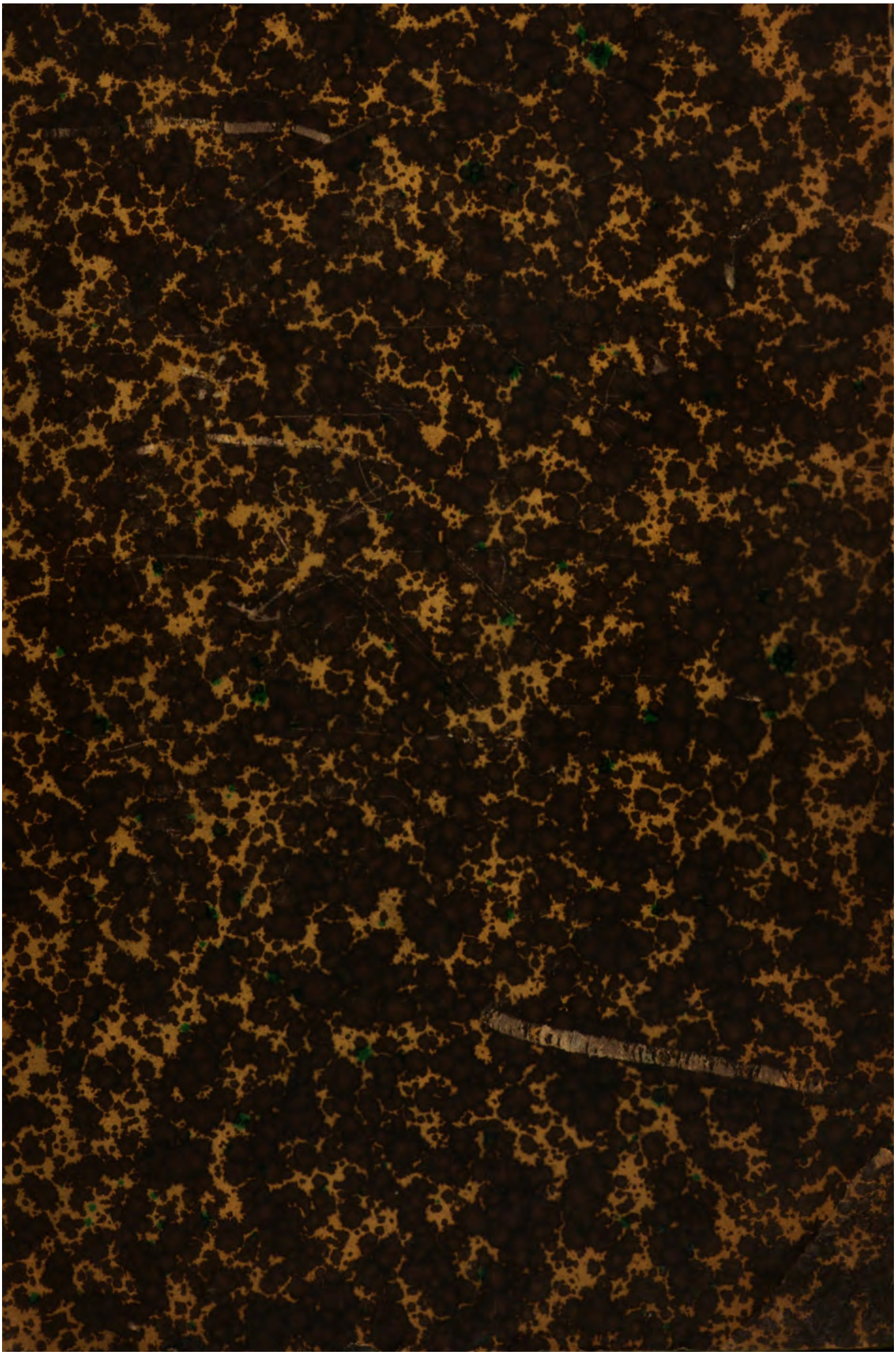

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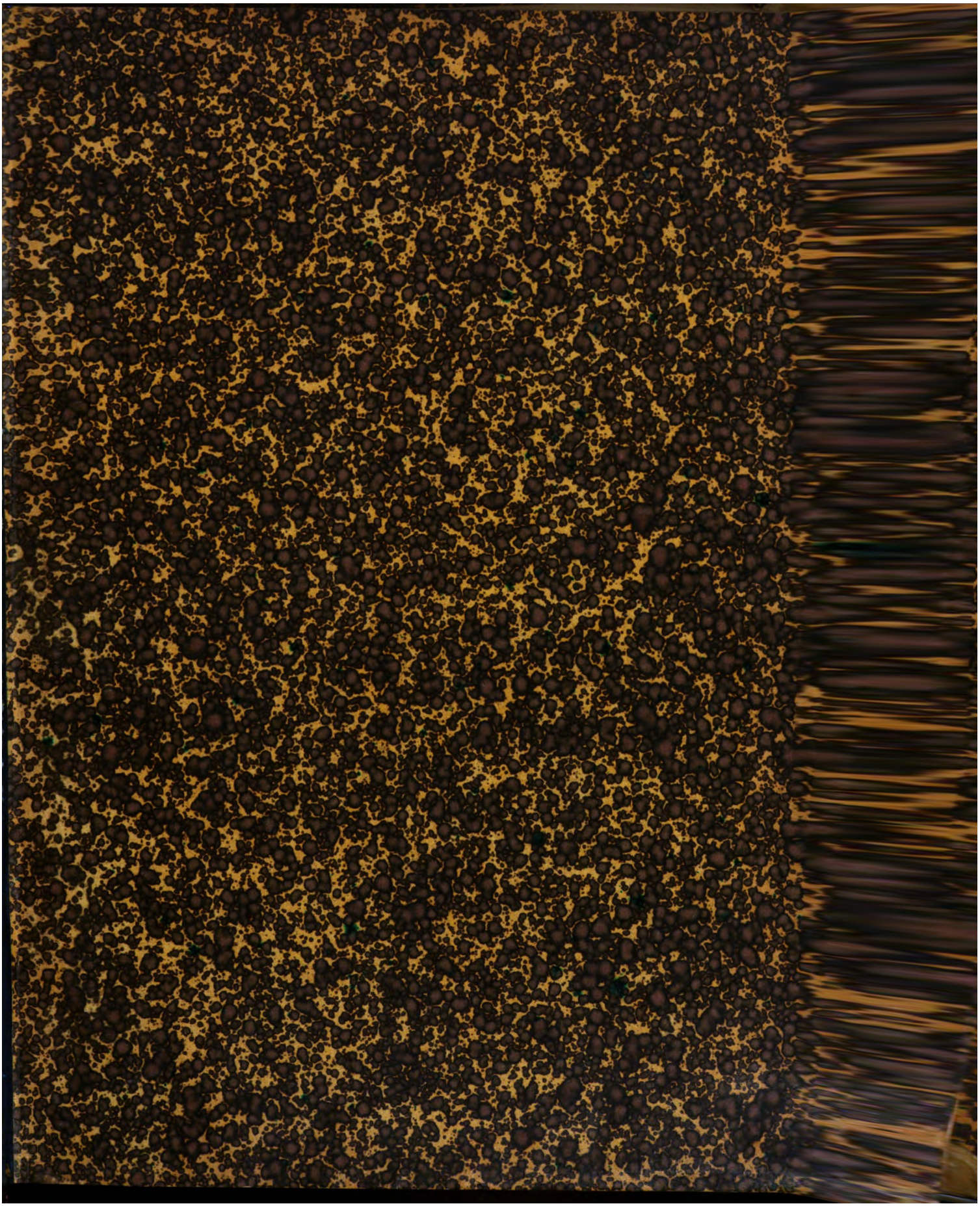

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An Address
ON
TEMPERAMENTS: IS THERE A NEUROTIC ONE?

Being the Mid-sessional Address delivered before the Abernethian Society of St. Bartholomew's Hospital on June 8th, 1911,

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GENTLEMEN,—This is an age which concerns itself about "equality of opportunity" if not "equality" in many other directions. Democracy, represented by the State, insists that there should be no privileged class, that every person has a right to decent education, housing and food, and that the net for preferment, promotion, and office should be cast widely; but there are drawbacks to this Utopian scheme. We are not all constituted alike, and to avoid waste of energy on the part of the State to bring about equality, as well as on the part of the individual to be equalised, it is well we should know the "square pegs," "misfits," and even "impossibles"! We know people as tall or short, fair or dark, square or slim, and we know by experience that "one man's meat is another's poison," and if we can discover by some special means of observation the distribution of endowment, the capacity for education, the suitability for occupation, the fitness for after life, the taste, the disposition or tendency to act, or even the susceptibility to disease, in other words, if we can ascertain the "temperament" of the individual, we and he, or she, may be saved much disappointment and sorrow, possibly also of misery and shame.

In medicine we know that drugs act differently on different persons, and sometimes the normal effect fails to appear unless the dose is varied. Some cannot take quinine, others are affected unphysiologically by opium. One person becomes insufferably ill from the presence of a cat in the room, another at the odour of lilies. One suffers emotional disturbance at the creaking of new boots, another when a pencil writes on a slate, a third at the creasing of paper or the scraping of finger-nails, and similar personal idiosyncrasies have disturbed men of great mental power and ability. Schiller required the odour of decaying apples to stimulate him in composition, and Kant the sight of a button on a student's coat to help him to lecture, and I have known promising adolescents in my own profession who could work better when a photograph of their admired one was on their study table! We know the course of disease in different persons necessitates different treatment, we have learnt that different climates have to be avoided by different people—one cannot live at Ramsgate, for instance, and the other languishes at Ventnor, and *vice versâ*; and in treating diseases we have to remember that we treat the individual and not the disease; in other words, the treatment required must depend upon the "temperament," a knowledge of which may enable us to guard against diseases to which we may be particularly liable.

ORIGIN AND SIGNIFICATION OF "TEMPERAMENT."

Temperament is a very old word. It was in use over 2000 years ago and is said to have been originated by Hippocrates 400 B.C. The ancients had no stethoscopes, thermometers, watches, nor instruments for measuring arterial pressure other than the end of the fingers. Moreover, they had no physiological and but [illegible] anatomical knowledge of the internal organs, whi[illegible] neither view as we do nor bring them into [illegible]rdly. In consequence they eagerly cul[illegible] of [illegible]igns, and finding that pe[illegible]ternal conformation [illegible] they attributed th[illegible] the humou[illegible]m, an[illegible] an[illegible]were and phlegmatic temperament. Even in the remote past, dark or fair persons were known to be predisposed to diseases of different types or classes, and the same diseases were known to affect them differently and needed different treatment for their relief. Experienced physicians and surgeons in more modern times, relying on the maxim that we are often better known by our looks than our words, have followed most keenly the study of resemblances and differences in their patients—certainly keenly in this hospital in the time of Dr. Patrick Black, who, without examining them, arranged his out-patients on seats according to the "physiognomy" of their disease. By this experience many of them arrived at a sort of instinct or divination by which the true character and the history of their individual patients could be read in the external features and physical conformation. They were enabled to discover the presence of, and, it is stated, the predisposition to, disease in their patients, to foretell the nature of their illness as well as its probable termination, thus laying the foundation of prognosis, and, as is further added, to proclaim the nature of the moral affections.

The word "temperament"—from *temporare*, to moderate, derived from *tempus*, time, the great temperer—is the most popular and least exact of all the terms used in describing differences of organisation. One writer states that all creeds and opinions are matters of chance and temperament, giving it the widest range and the most varied possible use, but implying that, given a certain personality or certain physical characters, the corresponding mental as well as moral traits may also be predicted. The words *temperamentum*, *temperatura*, *temperatio* have also been used in the same sense, and so have *complexio*, crasis (κρᾶσις); eucrasia, a good temperament; eu-exia (ἕξος), a good constitution; euchymia (χυμός, juice), a good state of the humours. The different mixing or tempering of the constituent parts of the body was assumed to cause the difference between individuals, this difference of organisation being due to a difference in the function or activity of the organs concerned.

To define the word temperament is not an easy task. By some it has been applied to indicate the relation between certain physical states (such as the size and form of the body, the size and shape of the head and face, the colour of the hair, eyes, and complexion) and mental states. Others regard it as the actual combination of certain physical with certain mental characters. There is a danger, however, in reading too much from physical characters to mental traits, and there is no doubt that this has been overdone, minute details and deductions having been inferred which experience would neither warrant nor justify. We ourselves know the impulsiveness, the love of change, and the unwarranted hope of blue-eyed, red-haired people (the sanguine temperament) as contrasted with the caution, persistence, and ambition of the dark-eyed and black-haired (the so-called bilious temperament). Yet surrounding circumstances might so modify natural impulses and tendencies that a carroty-haired girl—a *femme blonde*—might be transformed into the unemotional and simple nature of her black-haired sister, the *femme brune*. John Stuart Mill clearly recognised that differences of bodily structure were correlated with different mental states, and George Eliot went further and declared she never knew brains and red hair associated.

Mainly, however, the term "temperament" came to mean certain physical conditions, and Galen, in a Latin treatise translated by Linacre, suggested nine kinds of temperaments, based upon four simple physical states, which he described as moist, dry, hot, and cold. Four others were obtained by mixing these—viz., hot and moist, hot and dry, cold and moist, cold and dry—the ninth, which he called the balanced temperament, being made up "through the proper mixture" of all the others. According to their preponderating activity and in accordance with the system of humoral pathology the function of the four chief organs in the body gave their names to corresponding temperaments—viz., (1) the heart and blood; (2) the liver and bile; (3) the spleen, which was surmised to secrete black bile; and (4) the brain, with the pituitary body, which secreted phlegm, and thus the varieties described by Galen were reduced to four. In order fancifully to delineate the four temperaments they have been considered analogous to the ages of man and to the seasons of the year—the sanguine corresponded to childhood and spring, the bilio[illegible] to youth and summer, the melancholy to middle age [illegible] autumn, and the phlegmatic to old age and winter.

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the progress of experimental physiology the spleen was discovered not to secrete black bile, and on anatomical grounds the atrabilious or melancholy temperament was discarded, and in its place was suggested a nervous one, and we desire to know if such exists?

TEMPERAMENT A TENDENCY TO REACT TO STIMULI.

As to whether temperament is physical or mental, or neither, probably no two authorities are fully agreed, but in our view it is neither a *combination* of states nor their *relation;* neither is it a physical condition but a *mental* "tendency." It will be taken throughout this paper in a psychological sense and as indicating certain reactions or tendencies on the part of the organism, in the first place towards its environment, or in other words, the tendency to certain kinds of conduct, based on the correlation of physical with mental states, and secondly, the reaction of the organism to disease. We cannot fail to recognise that there is a correlation between certain bodily states and certain mental states shown by the appearance of the brain in certain forms of insanity, and there is also a correlation between certain bodily states and certain morbid conditions described as scrofulous, gouty, cancerous, hæmorrhagic, rheumatic, sthenic, and dartrous tendencies; but empirical generalisations such as these must be further investigated before progress can be made in definite and actual correlation. Whilst therefore appreciating the reality of such a thing as "temperament," and whilst accepting it as a psychological tendency, A. Stewart and others who have written on the subject consider the correlations of the four chief types of temperament to be: (1) for the sanguine type, persons who are short and often stout in later life, who have fair complexions, blue eyes, and red hair; mentally active, emotional, and excitable, but lacking in persistence and steadiness and showing a tendency to acute illnesses; (2) for the bilious or choleric, those who are thick set, rather clumsy folk, with dark eyes, hair, and complexions, people who are often gouty or rheumatic, and who are mentally unemotional, deliberate, and jealous; (3) for the phlegmatic or lymphatic, people with bulky forms, light hair, pasty complexions, slow movements, mentally "heavy on hand," slow, and plodding, a type which tends to dementia and diseases of a slow course; and (4) the nervous, with slight, slim, tall figures, large foreheads and pointed chins, dark eyes and sallow skin, those who think quickly, react rapidly, are susceptible, but easily get over their emotions. These tend to suffer from nerve storms, not infrequently ending in insanity. Probably no person has only one or other of these four recognised types, the chief characteristics in any one person partaking of the compounding of all the varieties, hence the necessity for some other more definite classification. Even in twins, whom we should expect to be most alike, there is often a greater divergence than there was between Esau and Jacob.

THE BODY ONLY THE AGENT OF MENTAL EXPRESSION.

If we take the body to be the organ of the mind's expression, and the body must be considered biologically as an aggregate of unit characters each of which has independence of a kind; we shall find that temperament, in the sense of being the aggregate of a man's physical personality, is an untenable theory, and the term has ceased to have any definite anatomical meaning. The human organism, like any other, reacts to its environment, and it is this tendency to react which I shall describe as "temperament." Any stimulus, external or internal, impinging upon any sensory areas of the body tends to come out as movement, and it is this reaction to outward or inward excitement which is the basis of human activity. Precisely as the amœba is seen to contract from the excitement of contiguous particles which act as stimuli to it, so exactly does the human body react to its stimuli. It is this reaction, in my opinion, which is the fundamental quality of temperament, and we know how infinitely varied is this reaction in different individuals. A race or a nation is composed of many individuals, as the individual is composed of many cells, and the national or racial temperament is the tendency it has to react to stimuli from within or from without.

INFLUENCE OF ENVIRONMENT.

The physical organism, as we all know, is the resultant, so to speak, of developmental forces—i.e., it is the result of inheritance. The original gametes—the male and female cell with their chromosomes—unite and become the zygote out of which the individual arises and grows, by the power of certain chemical combinations, through certain states based upon laws, which, although we know little of them, we describe as the laws of inheritance. In the study of heredity we find certain characteristics dominant in the parents repeating themselves in the offspring, which is a blend of all its ancestors, but the influence of the environment must not be overlooked as a controlling power, for "nature" and "nurture" both count. In the course of long ages the surroundings are undoubtedly a great modifying factor upon growth and development, carrying with them also a certain method of reaction which I call a "temperament." The nature of man is "like the dyer's hand, subdued to what it works in." The capability for adaptation and improvement which the history of man records shows so many changes that it would be impossible correctly to infer definite mental qualities from outward appearances. Food, climate, occupation, soil, and the general aspects of Nature all exercise a modifying influence on man's development.

We can tell the East Coast agriculturist, the central manufacturer, and the Western miner from their occupations, food, soil, &c. We can also tell the doctor, lawyer, solicitor, and sailor by the influence of their environment. In the vegetable kingdom we see in plants that the environment counts much as a controlling power. Alpine plants when brought down to the plains assume plain characters, and those characters created by environment become fixed, for the plants come true to the seed, reappearing with their acquired characters when the seed is sown. The same with water plants which as a rule have deeply dissected leaves when growing in water. Land plants thus grown tend to take up the water characters, and these characters reappear again when the seeds of the new plant are sown. The same influence of the environment occurs with plants of the dry desert or with those of moist Equatorial continents. As in plants, so in animals and man. The environment is able to modify appearance, stature, language, customs, and conduct, and, owing to environmental differences, the geographical limitation of man is rarely an ethnographical one, as we know in regard to our own country.

ORIGIN OF THE BRITISH PEOPLE.

Let us briefly review the history of man in the British Islands in order to show his composite origin and his changes by environment, also in order to prove that he cannot possess a simple temperamental type as suggested by some authorities. In the Pleistocene Age, some tens or hundreds of thousands of years back, Great Britain and Ireland were parts of the main land; rivers ran north and west to a coast line far out into the Atlantic, probably where the hundred-fathom soundings show the dip into oceanic depths. In this age lived Palæolithic man as a hunter and fisherman, using flints, bone and horn tools and weapons. As contemporaries he had the mammoth, the cave lions and bears, the straight-tusked elephant, wild horse, hyæna, Irish elk and reindeer, the hippopotamus, and the rhinoceros. He had attained civilisation, as may be seen from the carvings and drawings of the river drifts and the cave remains since collected.

The Glacial epoch came on during this period and swept away the mammoth and its congeners, and with it Palæolithic man. A new era brought a new race from the continent of Europe, and Neolithic man was later succeeded by man of the Bronze Age, then of the Iron Age and of the lake dwellings. Neolithic man, who probably knew nothing of agriculture, was short and dark, dolichocephalic, with a cephalic index of 71 or 72, and with black curly hair. It is stated that curly hair is rarely associated with great intelligence, but this dark type from the Iberian Peninsula is the oldest stock in our country, and its remains are still found in Wales, in some parts of Cornwall, and in the West of Ireland. The Bronze Age saw the arrival of a new blonde race, who were brachycephalic, with a cephalic index of 78, who crossed the Channel about 1200 B.C. and introduced the Aryan tongue into Britain. This fresh immigration came from the parts between the Rhine, the Seine, and the Garonne; the northern became the Goidelic and the more southern, the Belgæ or Galli, became the Brythonic, using a language which became the parent of the present Welsh. Later, we have records of incursions by Phœnician traders and by Greeks from Marseilles, followed by those of

the Danes, Saxons, and Normans. Under such circumstances who can claim for any of the inhabitants of this country a pure temperament such as is academically suggested in the types presented? The absurdity of such a suggestion is too evident. What with the intermixture of races in the past and with local migration in the present (by means of railways and other methods of communication) it is impossible to look upon modern civilised man temperamentally as other than an amalgamation in his own person of different developmental forces, many of them of course arising out of environmental influences. Defoe says:—

"A true-born Englishman's a contradiction,
In speech an irony, in fact a fiction."

RELATIONS OF UNIFORMITY OF STRUCTURE AND QUALITIES OF MIND.

Although the Englishman is made up, as we have shown, of grafts from every race of the Aryan stock, yet abroad he is always "spotted"; at any rate, the hotel keepers seem to find it out! Is the American, the Frenchman, or the German identified by some peculiarity of configuration which is also always associated with certain mental qualities or by certain tendencies in conduct? I venture to deny any such constant association. Uniformity of structure in people is one thing, but the uniform association of structural qualities with qualities of mind or conduct in them is quite another. There is no more reason for considering that certain uniformities of structure (which enable us, for instance, to identify a Jew, a Frenchman, a German, or any other nationality) should imply similar temperaments than there is to suppose that such uniformities of structure or similarity of configuration as enable us to identify members of the same family should imply for each of its members the same temperament or the same mental reaction, a condition we know not to exist. It must not be assumed from racial likeness that structural similarity implies the same invariable association of mental qualities. For this reason we protest against the *physical* explanation of "temperament." The same excitation of the cortical cells in one person, even of the same family and descended from the same ancestors, gives rise to different effects when applied to another member of the family, and it is erroneous to associate physical similarity with uniform mental qualities.

CONSTANCY OF SOME FAMILY PECULIARITIES.

It is true that there are family peculiarities which are very constant—such, for example, is the nose of the Bourbon Royal houses of France, Spain, and Naples, or the Hapsburg lip,—yet these outward marks imply no uniform mental correlation. Analogous peculiarities may characterise races, yet they may not imply similar mental tendencies or temperaments in these races. Some of these family peculiarities are often in the nature of degenerate stigmata. The Hapsburg lip is not inherited by the females, yet it is transmitted by them. Napoleon I. married an Archduchess of Austria, and her son, the King of Rome, inherited the Hapsburg characters. Charles V., the greatest European potentate of the sixteenth century, had such a well-marked lower lip that each time he ate, it is said to have touched his nose. Philip II., son of Charles V., possessed this prognathous skull and lip of the Hapsburgs, and he was an unmistakable descendant; but Don John of Austria, although acknowledged to be another son, had none of these characters, and history has since rejected this filiation and has relegated his ancestry to the German servant, Barbe Blomberg, and her vulgar paramour. Some doubt has existed as to the legitimate claims of Louis XVII., as he inherited none of the prognathism of Louis XVI. and Marie Antoinette, who were both Hapsburgs.

THE FACE AS AN INDEX TO CHARACTER.

I do not say that much information as to mental character is not to be obtained from the face. The whole trend of experience is the other way; all I say is that too much trust must not be laid upon the face, for we are apt to deceive ourselves and be deceived by excessive reliance upon the physiognomy. Many attempts have been made to read temperamental traits from the face, and faces have been divided into the square for the bilious and lymphatic, tapering for the sanguine, and for the reflective and introspective the so-called melancholy face; but it hardly need be said this question of expression implies a much more complicated inference than seems to us on the surface, for we have the square-jawed midnight marauder—the typical "Bill Sykes," and we have the tapering face of this man's tool—viz., the sneak-thief, who is content with minor achievements, such as stealing purses and picking ladies' pockets in the intervals of loafing. There is no doubt the physiognomy has been greatly exploited as a field for information in regard to character. As an expression of the emotions it is certainly of value, particularly of those fundamental emotions relating to pleasure and pain, for the face, like the barometer, is a good indicator of *existing* emotional weather, but too much confidence must not be placed in the face as the chief interpretative medium of character. In regard to the elements of the physiognomy, the eyes are looked upon as the "pole-star" for those who seek guidance as to the emotions: the eyes of Chatterton had "fire rolling at the bottom of them," and those of Burns were "like coals of living fire," and Sir Walter Scott's "literally glowed"; but the hand is also a valuable guide. Nevertheless, I am inclined to think that the most reliable element in the face is the mouth. Possibly the more fleeting and transient feelings of the moment are better reflected in the eye; whereas the fixed, firm, decisive, and permanent constituents of character are in the mouth. We all know the roving eye which looks upon everything and sees nothing, and we recognise the inconstancy conveyed by the shifting eye.

As to the general mental disposition, we rightly associate the different emotions—e.g., joy, caprice, anger, fear, and ambition—not with the bony framework of the face, but with the more mobile features controlled by the muscles and nerves of the face. It is the *tout ensemble*, the whole assemblage of the visage in which we see emotion and which rightly show character. For instance, we know one person to be suffering from melancholia, another from mania, a third from dementia, a fourth from confirmed epilepsy, and a fifth from general paralysis by outward facial characteristics. A sixth, perhaps a summary of all the others, which forms the basis of the insane temperament, gives, on the other hand, no indication by physical signs—i.e., one needs to find out the mental reaction to ascertain the temperament. Neither the highest powers of the microscope nor the most skilled chemist would be able to say that a person possessed the temperament of the paranoiac, who is the most dangerous as well as the most chronic of all the varieties of insanity. For this it is necessary to ascertain the mental reaction.

CLASSIFICATION BASED ON THE MENTAL REACTION.

The mental reaction or tendency to act must be taken as the only guide to the temperament or the personality, and mental reaction originates primarily out of the master structure—viz., the brain, which gives to the individual the form of character or the conduct he tends to. The brain of man differs from that of the lower animals, and there is also a racial difference, for the brain of an Englishman differs from that of a Chinaman. There is a diversity in shape, weight, size, quality, and convolutional pattern, and a corresponding diversity is seen in their mental reaction. It is the reaction of this master tissue that forms the basis of temperament. In other words, it is the reaction to the environment which constitutes the scheme for its proper classification or subdivision, and this is the one which has been verified by observations and which, to quote Ribot, may be divided into four chief types—viz., firstly, the active or responsive; secondly, the sensitive or receptive; thirdly, the apathetic, indifferent or amorphous; and lastly, the unstable or the nervous. These portray fundamental types of character, and they are based upon physiological observation. Man, as we know, feels and acts and wills according to the increasing definiteness or distinctness of some motive depending upon the inhibiting power of the person himself, and so, by adopting this scheme, we have a classification of temperaments on a physiological as well as a psychological basis.

THE ACTIVE OR RESPONSIVE TYPE.

Let us take, firstly, the active or the responsive type. We are all familiar with the strong tendency to action of some of our acquaintances or friends, as well as of some characters in history or fiction whose lives seem to be always directed outwards. The heroes of historical novels (as pointed out by Margaret Ashmun) and all knights of the sword and pistol are of this type. These persons are people of purposeful vigour, full of courage, and they love action,

excitement, and adventure. They are the roystering dare-devils of heroic novels, brimming over with superabundant spirits and full of the zest of life, all action, and "damn the consequences." They are always optimistic, and they exhibit in their persons human possibility to the Nth Power. They are the giants and gods of mythology. Oliver Cromwell and Wellington remind us of the active type, and in Shakespeare Prince Hal and Hotspur are also of this type. D'Artagnan in Dumas' "Three Musketeers" is another example, and the personification of the type is shown in the classical descriptions of Hector, Achilles, Odyssey, Æneas, and possibly Joan of Arc, but it is not the fashion for women to be of the active resolute character, although about 1 in every 18 women is thus distinguished. As they are unable to pull down Hyde Park railings when they have revolted against deep-felt grievances they are laughed at and jeered when they attempt to leave the polite emotions for an active campaign. In further derogation of the gentler sex it is suggested that owing to the rarity of intellectual ability in women they have often played larger parts in the world's history than would be credited to men possessing similar achievements—that is to say, equal ability in man would not permit him to play a similarly large part. Mrs. Elizabeth Montagu, who obtained fame as a leader of society and an authoress, who attacked Voltaire; Mrs. Mary Somerville, who was acknowledged as a scientific writer on the spectrum and on Laplace, and possibly Miss Hannah More, the intimate of Garrick and the authoress of religious tracts, were women of this class. In domestic life the Mistress Page of the *Merry Wives of Windsor* is a cheerful, sprightly, active, and quick-witted woman, who deserves her husband's confidence and has it by her faithful, true-hearted allegiance to him; she is not to be taken in by the "greasy knight" Falstaff. Mistress Ford is another delightfully happy character, the active sunshine of the home, transparent and cheerful. Richard III. may be taken as a practical, direct, and promptly active man, the most wonderfully energetic and skilful murderer that ever sat upon a throne. A crooked and ambitious king, full of energy and insincere, he was a good example of the restless, active type.

THE SENSITIVE TYPE.

The sensitive kind, which is our ideal of refined womanhood, is the next type. The emotional type that sympathises with distress, that is quick to perceive and ready to respond, forms the list of attractive heroines of most of our love stories, and Shakespeare has them in abundance. Portia, the lady of Belmont, is the contemplative variety of this type, and she has been described by C. Cowden Clarke as a lovely specimen of a lovely woman. Like all distinguished characters, she has been roundly abused. She has been accused of pedantry and affectation, of conceit of learning, and of being the antipodes of modesty, but she showed courage at the right moment; she had ready wit and great presence of mind, and she is probably the most cheerful and pleasant spirited of Shakespeare's characters. Juliet is another of Shakespeare's love heroines, emotional and sensitive. From the moment she learns of Romeo's banishment, through her agonised pleadings with her parents to the subsequent interview with Friar Lawrence, as well as in the scene where she drinks the sleeping draught, we see her ceasing to be the weak loving girl of sixteen, pouring out the beauty of girlhood, and suddenly becoming a strong self-reliant woman in whom all the most powerful emotions and ardour of the really sensitive lover are fully portrayed. The delicate poetical love of Viola is the sweetest and tenderest emotion that ever informed a human heart. Jane Eyre and Lucy Snow are other characters which represent the sensitive temperament. Nor is this type limited exclusively to women; there are men of this type, and Mark Antony, if I interpret him rightly, was of this temperament. He was sensitive, and, although a warrior, he was effeminate and fond of pleasures. He married Fulvia, whom he repudiated for Octavia, and she was cast away for Cleopatra. Marcus Junius Brutus and probably Hamlet were also of the contemplative sensitive type. Job, Christian in the "Pilgrim's Progress," and Robert Elsmere may also be placed in the same category.

THE APATHETIC TYPE.

The other division is the mentally apathetic, the characterless or amorphous group, not because there is no character in these, but because most of the active and the sensitive elements of reaction are balanced and there is a suppression of any one definite element. These people do not feel deeply nor strongly, they are often heedless of others and are egotistical. Falstaff was of this type. He was charged with a host of vices; he was coward, swindler, liar, cheat, and braggart. He had a laughable effrontery, but he was no hypocrite. He was irrepressibly human and was always the friend of Prince Hal. There is much that is selfish and cold in many of this class, and they are not as a rule of the sensitive or the emotional set. Shylock the Jew, with his morality founded on disbelief in magnanimity and goodness, is of this order, and possibly so was Beatrice in *Much Ado About Nothing*. Her marriage with Benedick was a *fin de siècle* union not founded upon love but upon what might be called "friendly concoction." Cardinal Wolsey, although active and unscrupulous, was of the cold, calculating, and impervious manner, which, however, found its mastery in that of his king. Possibly Richelieu and Iago were also of this group.

I do not say these are the only types, as each of them is found mixed with the other, and even the resulting compound does not cover the whole ground of temperaments. Let us therefore see whether or not there is yet another kind, and which for the want of a better term we may describe as the purely "nervous."

THE UNSTABLE OR NERVOUS.

Into what class are we to place such characters as are pourtrayed by the Reubens, "Unstable as water, thou shalt not excel"? What about the many clever people who are often so scintillatingly brilliant that they can be best described as geniuses, but who are, nevertheless, so uncertain in their mental reaction that we are bound to call them capricious, fickle, explosive, and unreliable; persons whose friends are unable to predict what they will do next, who cannot be depended upon for kindness, devotion, or love even to their own relations and dependents, whose own natures know no standard of consideration, and who are described as wanting or lacking in mental poise. That such persons exist is without doubt, and some may be known among our own acquaintances. Take the well-known family trees which demonstrate insanity, epilepsy, suicidal tendencies, anti-social conditions, and bodily abnormalities, such as night-blindness, Huntington's chorea, muscular dystrophies, hæmophilia, or diabetes.

How are we to classify these people who suffer from such nervous diseases as are unknown among barbarous or even among half-civilised people—those, for instance, who are hysterical or eccentric, who are peculiar, or "cranky"; those who suffer from somnambulism or sleeplessness, from unreasonable irritability, from obsessions or nervous exhaustion, who may even be epileptic, yet are often extremely capable and often very talented and distinguished, but who nevertheless are abnormally susceptible to impressions, who suffer from functional neuroses of various kinds, who have neuralgias and headaches, who are dyspeptic owing to delicate digestions or premature decay of the teeth, who suffer from neurasthenias, and who are unduly sensitive to alcoholic stimulants, and who may even be moral degenerates, although possessing marked mental superiority in many directions? That such conditions exist compatible with high intellectual ability is seen from the history of many of our great men. Nature rarely begets a genius, but she does not often create imbeciles or idiots, she dislikes extremes of all kinds, and her tendency is towards the average or normal type both in mental and physical conformation.

GENIUS AND NERVOUS INSTABILITY.

Many persons described as possessing genius in certain specified lines are, as J. Nisbet has shown, of this class. They are often predisposed to states of extreme irritability, and they suffer from intense emotional disturbances resulting in severe nerve storms or outbursts of motor violence which can only be described as that of subacute mania. The rapidity of their mental processes and the intensity of their conative tendencies when aroused know no control and such are often out of all proportion to the amount of the stimulus.

Into what class other than the nervous or the neurotic are we to enter such persons? In this analysis we are bound to give much consideration to the maxim that "like begets like," yet in several instances there has possibly been a

segregation of some unit characters, although admittedly not on Mendelian lines. Shakespeare, the greatest poetic genius the world has ever seen, stands alone. He appears to have had no family history of ability, and little is personally known of him, which shows that mental characters, although distinguishable, are often unanalysable. The genealogy of the poet Cowper will illustrate my point. There was mental unsoundness on both sides of his ancestors, who were also distinguished for fame, as he was the grandson of a Justice and the great nephew of a Lord Chancellor. He suffered from religious hallucinations and had the strongest suicidal tendency, having to be cared for in an asylum for a period of over a year, yet he wrote "John Gilpin" when suffering from intense melancholia.

The poet Shelley had an insane ancestry; his grandfather suffered from melancholia and was a miser, but wealthy. His father showed similar tendencies. His mother was violent and domineering, but of lonely and solitary habits. At Eton he was called "mad Shelley," and the day before he was drowned at Spezzia, at the age of 30, he saw vivid hallucinations. In his picture his eyes are large and animated and wild, his voice was said to be high, weak, and discordant, and he was described as shy, solitary, anti-social, and the subject of ecstatic visions. Charles and Mary Lamb had a convergent heredity of nervous instability and nervous disease. Their mother died from dementia and paralysis at 50, and Charles died at 60 from what he himself described as the "cursed drinking." He was only 5 ft. in height, he stammered, and always suffered from headaches. At the age of 20 he had to be placed in an asylum, whilst his sister Mary stabbed her mother to the heart and killed her whilst insane. Wordsworth, who was a poet laureate, and his sister Dorothy are almost a parallel to Charles and Mary Lamb. Dorothy, like Mary, was insane and, like Mary, she was poetical and in the closest sympathy with her brother's pursuits. Dorothy Wordsworth was described by De Quincey as having eyes wild and staring, with an embarrassed and distressing utterance, a creature of fiery impulse. She later became mentally afflicted and never recovered her reason. Wordsworth himself described his sister as a "confirmed invalid." One of Wordsworth's children died from paralysis, another daughter was peculiar, being alternately gentle and vehement, and suffering from a form of insanity described to-day as of the "manic-depressive" variety. Wordsworth's father died at 42, and, like the fathers of many insane persons, was described as a man of great force of character, and his mother died from phthisis at 31.

The Coleridge family had a strongly marked insane history. The father of Samuel Taylor Coleridge was eccentric and absent-minded, and his mother is stated to have been uneducated and simple. He himself ran away from college, he quarrelled with his brother as a boy, and left home, being absent all night without apparent reason. Later in life he left his wife and children and went off to Malta. At the age of 30 he was broken down, and he died a wreck at 62. His son Hartley drank himself to death and died demented at 52. Southey came of an insane stock on his mother's side, who herself had paralysis in infancy. He had a maternal uncle described as "idiotic." His paternal uncle left his estate to a footman rather than to his sister who lived with him and who was dependent upon him. Carlyle described him as the "excitablest man" he ever met, and he died from dementia. His wife became insane, and also some of their children. He was described as having the most vehement pair of hazel eyes. The Sheridan family is notorious for neuropathic and psychopathic ancestry. The mother of Richard Brinsley Sheridan, the dramatist, was paralysed, and died demented at 42. His maternal grandfather also sank into dementia, and a maternal uncle was described as "absent-minded." He married twice, marrying the second wife a few weeks after the death of his first, and winning her, it is said, with copies of the love letters sent to his first wife. He died in debt and *déclassé* through drink. Only one son left issue, and he married into a healthy stock, of which famous issue has resulted.

Sir Walter Scott's family was permeated with nerve disorder. His father died from organic dementia, and his mother was aphasic and died from post-hemiplegic dementia. The maternal uncle also became demented. He himself had two sons who died childless, and two daughters, one of whom died from brain fever and the other, Mrs. Lockhart, from phthisis. His ambition to found a family "sleeps with him." Burns's father had an "ungovernable irascibility" and he himself was the victim of drunkenness and died at 37. One thing he loved since the age of 15, and that was "woman." He used to say his frame was blasted with a deep incurable melancholia which poisoned his existence.

Pope was deformed, rickety, and susceptible. A picture of him proposing to Lady Mary Wortley Montagu is in the National Gallery. Keats is described as neuropathic to the tips of his fingers. He had an ungovernable temper and was dwarfish, being only 5 ft. high. He had a passionate admiration for "Fanny Brawne," and Shelley said his alternation of despondent gloom and emotional passion was exactly like insanity. He had no trace of eminence in his ancestry, and his temperament and genius are probably a good illustration of a spontaneous variation. Byron's mother was most unbalanced, and his maternal grandfather suffered from melancholia and committed suicide. Another relative committed suicide with poison. Byron succeeded his grand-uncle, the "mad and wicked" Lord Byron. His father, the "mad Jack Byron," died from suicide whilst insane. Byron's father ran away with the Marchioness of Carmarthen, an heiress, whom he married and killed by cruelty, and treated his second wife, Miss Gordon, the same. A converging heredity of this kind in the ancestors fills our asylums. Byron was correctly described by his most intimate friends as "too mad, bad, and dangerous to know." His daughter Ada married Lord Lovelace, and her son, the Viscount Ockham, served as a common seaman and worked at Millwall as a ship's carpenter. Byron was tortured by hallucinations, he drank, and died an epileptic at 36.

Milton was gouty and lost his sight from inherited blindness. He was said to be most tyrannical in his home life, and is stated to have led his daughters a miserable time, accusing them of selling their father's works and cheating. He had four children, a son who is said to have died in infancy from ill usage, one daughter who was blind, another a cripple, and a third one died later. His own brother was described as a "disreputable judge," and in the collaterals were many "ne'er-do-wells." I quote this instance, as insanity is only one of a group of neuroses, and genius has to be paid for at the cost of many penalties.

Let us now trace the inheritance and the mental reaction in the biographies of some of the most eminent musicians, and we shall see the same penalty for genius and the same ravages of psychosis and neurosis, using these terms in their pathological sense. The genealogy of the Bach family has been traced for 200 years, from the founder, who was a baker, to Sebastian Bach, the climax of musical talent. Bach had 20 children, but no issue remains to perpetuate the distinctions of the father. Although many of the Bachs married musical people the family record is one of sickness, blindness, drunkenness, and mental defect. Although we can breed Arab horses, Derby winners, and prize cattle, it has hitherto not been possible to produce a "musical breed," showing the unfitness of genius to survive in a world requiring many adaptations, and the incapability of genius to continue its own distinctions. Schumann suffered from recurrent melancholia with suicidal impulses. His mother was singular and eccentric, and a sister died from what we now describe as "dementia præcox." Wagner was a wild and erratic boy, filled with the wildest mysticism. He grew up with a violent temperament and his actions were often uncontrollable. He had a mania for silks and satins, with which he always dressed himself to compose music. When travelling he also carried these to decorate his rooms, and when he died he requested that his room should be upholstered in pink and pale-blue satin. Schubert was worn out and died at 31. Beethoven suffered from a form of paranoia described as mania migratoria; he was always changing his rooms and was paying for three or four different lodgings at the same time. He seems to have alienated his best friends through suspicious jealousy and false accusations. He began to get deaf about the age of 30, and in later life was completely deaf, so that much of the music he composed he himself never heard.

CONCLUDING REMARKS.

From what has been said it will be readily seen that genius may often prove to be a golden idol with feet of clay. Man is firstly a vertebrate mammal with the instincts of the

animal, but he has the power of inhibition and of auto-criticism, and through the influence of his environment he has attained a veneer of civilisation, and it is interesting to note that in insanity these acquisitions of his progress are gradually dissociated and shed in the inverse order of their acquirement, until at last man is left a wreck barely above the level of the animal. The cause of this reduction in insanity is probably some physical process in the cortical cells, or, in other words, some chemical change has occurred in the neurones, either directly through the influence of some poison generated from within or introduced from without the body, or indirectly by means of the environment, favoured, of course, by some inherited predisposition; and it is the study of man biologically—that is to say, the observation of his general activity or his total reaction under the influence of physical and psychological impressions—that enables us to infer the kind of temperament a man possesses. As we have seen, the predisposition to states of instability of control may be associated with distinguished mental superiority, and it is the degree of sensitiveness to pleasure and pain, the degree of motor restlessness and the degree of emotional tone exhibited by the individual which justify us in concluding that there is or is not present a temperament which we are entitled to describe as the neurotic, and it is by foreseeing this temperament that we can promote happiness and harmony where otherwise there would be intolerance, strife, and discordance. The more we see of the deviations of mental reaction and of physical structures the more we must be convinced that special modes of nutrition must have their special physiological expression, and that our work of prevention and relief as medical men is as important for the welfare of the community and the progress of the race as it must be for the well-being of the individual.

AN ABSTRACT OF

The Samuel Hyde Memorial Lectures

ON

OUTLINES OF MEDICAL HYDROLOGY.

Delivered before the Balneological and Climatological Section of the Royal Society of Medicine on May 15th, 17th, and 19th, 1911.

BY R. FORTESCUE FOX, M.D. LOND., F.R.MET.S.

LECTURE I.

Delivered on May 15th.

ANALYSIS AND DEFINITIONS.

THE association of the medical science of climates with that of baths and waters is not accidental, nor founded only upon a convenient grouping of two chief modes of physical therapeutics. It is a real and essential connexion, for whilst the influence of climates often operates alone it is inseparable from the action of baths. In truth, the climatic factor enters into every balneological equation. At every spa the influence of the waters and baths and of the local climate are inextricably mingled. Whenever a patient is submitted to baths or waters the climatic factor is an accessory, and sometimes a dominant, influence. For this reason the study of medical climatology, both in its general principles and in its local and special applications, can never be overlooked by the spa physician.

CLIMATE IN RELATION TO SPAS.

The various spas, both British and foreign, enjoy a great variety of climates, and it would be possible, and indeed desirable, that they should be grouped according to their climatic characters. Many waters and baths, apart from the climate, produce, with minor individual differences, the same general effects. The climate is often, therefore, the determining factor in the choice of a particular spa for invalids—and in this matter the general condition and temperament of the individual must be considered as much as his malady. Moreover, an appropriate climate will reinforce the effect of the spa treatment, as an unsuitable one will antagonise it. This applies with especial force to cardio-vascular and nervous disorders. A large number of patients so affected are benefited more than by any other form of treatment by subthermal baths, still or gaseous. Of these cases, some should never be sent away from home for treatment; others do best in the cool and bracing climates of our own island; some require in association with bath treatment the cooler temperatures of northern latitudes or sub-Alpine stations; and for only a certain number is the summer climate of warm valleys appropriate. The question of altitude should be particularly considered in its influence on the action of baths. Among the thermal baths of Europe there is a wide available range, from 100 to 5000 ft. It may be noted here that for the treatment of circulatory disorders Buxton, Harrogate, and Llandrindod all have a suitable medium elevation, and that Strathpeffer, although nearer to sea-level, has the compensating advantage of a more northern latitude.

Hot or thermal baths are best borne in cool places. Indeed, in the case of delicate persons they can only be taken with safety in a cool climate. Otherwise, the enervating effect of heat, added to that of the baths, may bring on a serious condition of what may be called "thermal debility," which is sometimes prolonged for many months, and may even be fatal. Thermal debility, which is the effect of an excessive or too prolonged thermal influence, is a too common and undesirable result of a course of baths. Among the many examples that have come to my knowledge I have sometimes thought that the fault lay quite as much in a bad choice of climate as with the baths themselves. I need not apologise for this incidental reference to what is in truth the most serious danger of spa treatment. We know that heat is one of those powerful stimulants that very rapidly become depressant. Its first effect upon the skin is vascular dilatation and increase of sweat, resulting in compensatory loss of heat. This pronounced and obvious action cannot escape notice, but the reaction of heat comes more slowly than that of cold, and sometimes in a gradual and insidious manner, and it may be after the treatment has ceased. The lessened heat production from thermal applications, the lowering of blood pressure, and the elevation of the temperature of the blood from prolonged and repeated hot baths, all diminish nervous and muscular energy, and bring about exhaustion of the spinal and cerebral centres and the heart. It follows that the reaction to heat must in practice be avoided with as much care as the reaction to cold is encouraged and promoted. In many conditions of senile weakness and premature degenerative changes the indication is for a mildly tonic and sedative climate. The only appropriate remedy, whether of bath or climate, must be temperate, soothing, sedative.

FACTORS IN HYDROLOGICAL TREATMENT.

The medical use of springs and of baths comprehends a bewildering variety both in the potable water and in the methods of its application. Hitherto, this too obvious diversity has rather obscured the truth that all such treatments have certain essential characteristics in common. The action of pure, sweet, and fresh water is the first of these common factors. The quality of *freshness* is of the first importance in the administration of waters, and springs differ widely in respect to this quality. It is not necessary to accept without reserve the theory of Armand Gautier that the water of certain thermal springs is in a real sense chemically "new," having the heightened activity of nascent matter. But it is common knowledge that the flowing, or in the old parlance the "living," fresh water of the fountain has a different property from that of the same water when still, contained in reservoirs or bottled. Consequently certain waters produce their most powerful effect when employed either for drinking or externally at the source.

The second common factor in these methods of treatment is not less important—namely, *heat*. For warm-blooded animals living in a cooler medium, heat is measured relatively to the temperature of the body. *Plus* or *minus* applications of heat are naturally inseparable from waters, whether internally or externally used. Baths act in the main as vehicles of energy, of which heat is the chief form. Water is in respect to the human body the commonest and most convenient medium of energy, but it is convenient to include in the category of bath treatment other media, such as dry sand and air, by which heat can be abstracted or conveyed. Again, inasmuch as baths of different kinds embrace the

chief forms of heat treatment or thermotherapy, it is convenient to include with baths the other forms of thermotherapy such as insolation, thermo-penetration, and artificial radiant heat, for which no physical medium is needed. It follows that in this division of our subject ought to be placed all our knowledge with reference to the effects of temperature (*plus* and *minus*) upon the functions of the body in health and disease, notably the effects upon heat production and conservation, and upon the processes of tissue change, and especially on the dissociation of tissues. All these actions are excited through the skin. This, again, will lead to a deeper study of the functions of the skin as the most extensive and sensitive organ of the body. I have long believed that when the relations of cutaneous conditions, and especially subnormal cutaneous temperature, to chronic disease have been more accurately ascertained, the use of thermotherapy by means of baths will be widely extended. Take, for example, hot pediluvia, which are so much employed at the baths of Mont Dore and elsewhere in France in order to produce an effect that was long ago described as "derivative" or "revulsive." In this country there are many persons in whom the cutaneous circulation is permanently defective, and the surface temperature, more particularly of the feet, sinks to 10° or 15° below normal. Systematic foot-baths at a temperature of 110° to 120° F. provide a means of restoring the peripheral circulation and relieving high arterial tension in many cases. It is clear that the thermal effects of baths, whether general or local, are deserving of attentive study.

We have next to notice the factors that depend upon the particular qualities of medicinal waters. Each spring has its own proper ingredients, and these must have their pharmacological effects, beneficial or otherwise. Under this designation we find certain gases, salts, acids, metallic elements, ferments, and other organic matters, all of which belong to medicinal springs, and the study of which must therefore be germane to the science of waters. We have also to take account of the particular *physical properties* of waters. Their temperature, electrical condition, tonicity, and radio-activity fall under this heading. Important researches during recent years have thrown much light upon the physico-chemical properties of medicinal waters, particularly of the thermal springs, and still much remains to be learned.

Thus we may conclude that the medical doctrine of water embraces two great branches. The first concerns itself with the use of this element in medicine solely as a vehicle of energy, whilst the other branch has to do with the various ingredients and physical properties of medicinal springs, and of the emanations and deposits in connexion with springs, and with their chemical and physical action upon the body, whether taken internally or applied either locally or generally to its surface.

QUESTION OF NOMENCLATURE.

What single comprehensive name can be applied to the whole science? It is surely unnecessary to argue the convenience, nay, the necessity, for such a general term. To meet the exigencies of the case such a name must satisfy certain necessary requirements. It should be inclusive of all the medical uses of water; it should be distinctive, and it should also, as far as possible, conform to, or be capable of, international use. It has seemed to me that the time may be ripe for reconsidering in this country the nomenclature of this branch of medical science. The subject-matter has, indeed, undergone so rapid development, even in our time, that the terminology of the last century has become inaccurate and even misleading. The varying connotations given to familiar words cause an unnecessary confusion, and the fundamental unity of the whole subject may be overlooked for want of a simple and inclusive name.

THE TERMS "BALNEOLOGY" AND "HYDROTHERAPY."

The word "balneology" appears to be a new one, and was but seldom used before the middle of last century. My earliest example is in 1840, when Krahmer of Leipsic published a review of the "balneological" literature of the preceding year. About 1870 the words "balneology" and "balneological" found their way into this country, and until the present time have been generally employed in England and in Northern and Central Europe. So far as I am aware, in spite of their wider dictionary meaning, their connotation is strictly limited by all authors to the properties and uses of *medicinal* springs. The various actions of water and heat are excluded. Although, as we have already seen, these form essential factors of all treatment by means of water and baths, they have been made to form a separate study under the name of hydrotherapeutics. In France, Italy, and Spain the term "balneology" has not found acceptance, although the expression "balneotherapy" is sometimes used as descriptive of a treatment.

It is true that derivation is a poor guide to the meaning and use of words, even in science; but the purist might urge that balneology (from *balneum*, a bath) should rightly have to do only with the *external* use of water. Custom has, on the one hand, *restricted* its application to the use of medicinal waters, and, on the other, *widened* it to their employment internally as well as in the form of baths. A more serious objection to the claim of balneology to be a proper name for the whole science of waters is that it is too narrow, and that modern usage has confined its connotations to the medicinal spring.

According to the Oxford Dictionary, hydrotherapeutics is defined as "that part of medical science which treats of the therapeutic application of water." In the works which I have quoted there has been, so far as I am aware, no question of applying this term to medicinal waters. I must now refer to a tendency in some of the most recent writers[1] on hydrotherapy to enlarge the connotation of that word. It is even proposed to include under hydrotherapy the whole science of waters and of baths. I think it is not difficult to trace the origin of this proposal. For more than a generation the accurate study and practice of hydrotherapy had proved the efficacy of simple thermal applications in many disorders. As the part played by these great primary and general properties of all waters became evident, so the secondary and particular qualities of the springs naturally waned in estimation. The great reliance that was formerly placed upon the cutaneous absorption of the ingredients of mineral baths was shown in many cases to be unfounded by the discovery that comparatively little absorption of saline matter takes place through the uninjured skin. And the fact that widely different medicinal springs have been supposed to exercise the same effect, and are constantly resorted to for the same ailments, was held to show not only the importance of those qualities which waters have in common, but the insignificance of those in which they differ. The proposed nomenclature is therefore not so much an extension of the range of hydrotherapy as a denial of the supposed active qualities of the medicinal spring. I submit, with all deference, that it is founded upon an imperfect and hasty generalisation. Moreover, I would venture to say that hydrotherapy is not the name of a science. It signifies quite correctly an art or treatment. For more than half a century the word has been consistently applied in the medical literature of several languages to the use of sweet water. It would therefore violate an established and convenient usage, and introduce confusion, if it was now sought to employ it so as to include the particular and distinctive properties of the medicinal spring. In a recent letter Dr. Frankenhausen, lecturer in "balneology" at the University of Berlin, writes me: "In Germany, hydrotherapy and balneology are sharply divided departments of medicine. By hydrotherapy we understand the application of hot and cold water. With this is connected thermotherapy, steam, hot air, and incandescent-light baths. By balneotherapy we understand the therapy of mineral waters, in which, as a rule, different temperatures are of small account, but the chemical characters of the waters, climate, diet, &c., are of importance."

MEDICAL HYDROLOGY AND ITS DEFINITION.

By a process of exclusion we are led to the belief that the proper name for the whole science of water and of waters in medicine is *medical hydrology*. For many years the name has been widely employed on the continent of Europe. A literature of medical hydrology, including the whole subject of hydrotherapy and of medicinal springs, has grown up, particularly among the Latin races, and periodical meetings of congresses under this name in different countries have done much to promote and coördinate its study.

It would seem that philology offers no bar to our use of the word in a medical sense. And I venture to submit that the expression *medical hydrology* satisfies the three essential

[1] See Guy Hinsdale in Hydrotherapy, Philadelphia and London, 1910.

conditions with which we set out. That it is distinctive cannot be denied; that it is sufficiently comprehensive is also evident; and it is also, as far as may be, in conformity with international usage. We may, accordingly, define the name as follows: "Medical hydrology is the science of waters, vapours and mineral, or organic deposits in connexion with waters, as used in medicine, both by internal administration, and in the form of baths and applications."

A SHORT CHEMICAL STUDY OF A CASE OF CYCLIC VOMITING, WITH SOME REMARKS ON CREATINURIA AND ACIDOSIS.

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THE patient was a boy aged 6 years. He was admitted to St. Thomas's Hospital on May 21st, 1910, under the care of Dr. C. R. Box, who was responsible for the clinical conduct of the case and with whose concurrence the investigation was carried out. The patient was discharged on July 18th. According to his mother, he had been liable to attacks of vomiting and great prostration almost every month since his birth. The attacks lasted four or five days and were accompanied by feverishness and constipation. He was not subject to constipation except at these periods.

On admission to hospital the child was restless and fidgety. The movements, however, were not choreiform. He was very pale. The abdomen was poorly covered but moved well on respiration, and no abnormal masses or peristalsis were observed. The liver dulness extended from the sixth rib in the nipple line to the costal margin and the spleen was not palpable. The thoracic viscera showed no abnormality. The knee-jerks were normal and the plantar reflex flexor. The temperature was 98° F., the pulse was 116, and the respirations were 24 per minute. The urine was of specific gravity 1035, acid; it contained no albumin and no sugar; acetone was present; no blood, no pus.

Course of illness.—During the patient's stay of two months in the hospital he had two attacks of illness, the first one lasting from June 1st to 6th, the second from July 2nd to 6th. During the attacks, although vomiting was present, yet it was not a prominent feature. Naturally a nervous child, at the approach of each attack this condition was exaggerated, and he would sit up in bed and nervously move his hands. When the attack was at a climax the patient lay curled up in bed and refused all food. Although between the attacks his temperature remained normal, yet during the attack the temperature varied greatly between normal and 104·5°. At this time the urine was very scanty and measured on one day only 1 oz. It contained much acetone and diacetic acid. He gradually returned to a normal condition on the fourth day from the onset, the temperature oscillations diminishing, and the volume of urine gradually increasing. Gradually, also, the ability to take food returned.

A very prominent point was the extremely rapid loss of weight that occurred during the attacks. For instance, from May 28th to June 4th the child's weight diminished from 2 st. 3 lb. 15 oz. to 2 st. 2 lb. 6 oz.—i.e., 1 lb. 9 oz. Also from July 1st to July 6th the loss was from 2 st. 7 lb. 2 oz. to 2 st. 4 lb. 15 oz.—i.e., 2 lb. 3 oz.

Current Views on Cyclic Vomiting in Children.

From a review of the literature dealing with this subject it is apparent that the cause or causes are very obscure. The physician in his search for a cause has always had one standby in such cases, and that is the presence of an acidosis, involving the excretion in the urine of large quantities of β oxybutyric acid, aceto-acetic acid, and acetone. It is therefore fashionable, since it is also generally accepted that the symptoms of diabetic coma are the results of acidosis, to ascribe attacks of cyclic vomiting to the accumulation in the tissues of large quantities of β oxybutyric acid and aceto-acetic acid. Langmead [1] thinks that the intestinal tract forms some poison which, being absorbed into the portal circulation, acts directly on the liver and so causes a fatty infiltration of that organ with subsequent acid poisoning.

The central point about which Howland and Richards [2] concentrate is the unstable nervous system of a patient liable to this complaint. They regard shock or excitement as sufficient to disturb the whole metabolism, causing diminished power of oxidation and the circulation of the poisonous, unoxidised substances in the blood. The body tries to get rid of them by excretion into the stomach, and intestine, so that vomiting is the eliminating and protective mechanism called into vogue by the body in this condition. They also comment upon the excretion of indol compounds at this period, and show that indol emphasises the poisoning effect of small doses of potassium cyanide.

Ewing [3] regards the condition as depending upon a disturbance of metabolism due to defective function of the liver, with which is related the defective fat combustion, and associated also with poisoning by intestinal putrefactive products.

Comby [4] has alleged a much more definite cause when he ascribes the condition to chronic appendicitis. He describes the cure of eight patients where appendicectomy was performed, while three patients remained uncured by the operation.

A case recently described by Dr. A. E. Russell [5] seems to point to another possible cause in some cases of cyclic vomiting at least. In his patient the post-mortem examination revealed a markedly thickened pylorus, and he ascribes the vomiting to a hypertrophically stenosed orifice. The starvation which must of necessity accompany such a condition would be sufficient to account for the acidosis, while the death of the child he considers as due to inanition and exhaustion. Post-mortem examinations in other cases do not make it evident that a stenosed pylorus is a common cause of this condition, although stenosis of the pylorus due either to spasm or to spasm with muscular hypertrophy is a well-recognised condition in children. Recurrent pyloric spasm may well be a cause of cyclic vomiting in some children, but in the case now recorded it is quite evident from the subsidiary position occupied by the vomiting as well as from the physical signs no such cause would be acceptable as adequately explaining the symptoms. It is remarkable, however, that in the post-mortem examinations of such cases described in the literature gastro-intestinal lesions are frequent. Degeneration of glandular epithelium, small hæmorrhages, and shallow ulcers have been described in cases by Langmead [6]; necrotic changes in the mucous membrane of stomach and intestines by Crozier Griffiths [7]; dilatation of the stomach by Comby, and stenosed pylorus by Russell.

The general trend of opinion is inclined to the belief that cyclic vomiting is due to a deficient oxidation, particularly of fats, with the subsequent accumulation of oxybutyric acid and aceto-acetic acid in the blood and tissues. The acidosis is probably due to the action of intestinal toxins on the liver, while the symptoms themselves may be explained by the acid poisoning. It is one of the objects of this paper to combat this view and to emphasise as strongly as possible that the acidosis in itself had nothing to do with the onset of symptoms, and further, in general, acidosis may probably be disregarded as a cause of any abnormality in any disease, except, it may be, in diabetes.

A Chemical Study of the Patient.

In consequence of the discovery that the child excreted a large quantity of creatin during an attack, whereas a normal child of this age does not excrete creatin at all, a detailed study of the excretion of this substance was made. On the opposite page is given a table of figures obtained in this investigation.

The first prominent point to be noticed in the figures is that the child always excreted creatin. This is an abnormality in a child of 6, although it has been known for many

[1] Langmead: Brit. Med. Jour., Feb. 18th, 1905; Sept. 28th, 1907.

[2] Howland and Richards: Archives of Pediatrics, vol. xxix., 1907, p. 401.

[3] Ewing: Studies from the Department of Pathology, Publications of Cornell University Medical College, vol. viii., 1908.

[4] Comby: Archives de Médecine des Enfants, October, 1909, p. 721.

[5] British Journal of Children's Diseases, February, 1910.

[6] Loc. cit.

[7] Crozier Griffiths: American Journal of Medical Science, vol. cxx, 1900, p. 553

years that infants excrete creatin. It may be inferred, therefore, that the *cause of the recurrent illnesses was always present*, but that only at definite intervals did it rise to such proportions as to disturb many physiological activities. Incidentally, it may be mentioned that the excretion of creatin in the infant which appears to give way to the excretion of creatinin with age, is but one more example of the similarity of ontogenetic and phylogenetic development, for it has been shown by Meissner, and recently confirmed by Noel Paton,[8] that birds always excrete creatin while the mammalia always excrete creatinin.

The next point to be emphasised is the gradual rise of creatin in proportion to creatinin, before the onset of the attack. In fact, as early as June 27th (the attack started on July 2nd) it was evident from the abundance of the creatin excretion that the disturbing factor was approaching a maximum and that an attack was imminent. From the appearance and general condition of the child up to July 1st, it was impossible to imagine the approach of an exacerbation, and my suggestions, based upon the condition of the urine, as to the proximity of illness were not credibly received. It will be noticed, however, that during the height of the attack itself, whereas the creatinin excretion diminished from 0·28 grm. (average) to 0·165 grm. (average) per diem, the creatin excretion became remarkably high—e.g., 0·3 grm. per diem. Here, however, another factor comes in which I shall discuss at greater length later. The factor is the acidosis which accompanies the attack and which in itself is always related to a large excretion of creatin.

It may be well at this point to consider the facts concerning acidosis, involving the excretion of the acetone bodies, brought out in the above table. Unfortunately, none of the bodies β oxybutyric acid, aceto-acetic acid, nor acetone was estimated. Acetone was regularly tested for by Rothera's[9] method, and the intensity of the resulting permanganate colour together with the time of development gave one a rough idea of the relative quantity present.

The first point apparent is that acetonuria did not appear during the period of apparent good health. In this respect acetonuria is totally different from the creatinuria which, as stated above, was always present. The next point is that *acetone only appeared in the urine after the attack had been fully established.* It appears obvious, then, that acidosis is an effect rather than the cause of an attack. That this is the case is also evident from the following. At 3 P.M., July 4th—i.e., during the attack—the boy was given glucose (20 grm. to the ounce), together with soda-water, and by 9 A.M. July 5th he had taken 12 oz., which is equivalent to 240 grm. of glucose. The acidosis was stopped almost immediately, and by 3 P.M. July 5th certainly, and probably some hours before, no acetone was present in the urine, whereas the temperature did not return to normal for a further nine hours. Here again, then, there is an apparent independence of acidosis and symptoms. With the disappearance of the acidosis the creatin excretion became markedly lower, the creatinin excretion increased, and the $\frac{\text{creatin}}{\text{creatinin}}$ ratio sank from 2·13 to 0·45.

It still seemed possible that although the accumulation of acid bodies in the tissues was not directly responsible for

Table showing Excretion of Creatin in a Case of Cyclic Vomiting.

Date.	Creatinin in 10 c.c.	Creatin in 10 c.c.	Creatinin in 24 hours.	Creatin in 24 hours.	Ratio creatin, creatinin.	Acidosis.	Remarks.
June 4th	mgrm. 8·8	mgrm. 17·2	grm. —	grm. —	1·96	Abundant acetone.	Child ill. Temperature up to 104°.
June 16th	6·0	2·3	—	—	0·38	None.	Child well.
,, 17th	4·6	2·2	—	—	0·48	,,	,,
,, 18th	5·7	2·3	0·234	0·095	0·4	,,	,,
June 20th	9·8	2·3	0·304	0·071	0·235	None.	No temperature. Extra fat for five days.
,, 24th	9·0	3·1	—	—	0·345	,,	Child well.
June 27th	9·0	7·0	0·315	0·245	—	None.	Child well. Normal diet.
,, 28th	7·0	3·9	—	—	0·56	,,	,, ,,
,, 29th	11·0	7·0	0·275	0·150	0·64	,,	,, ,,
July 2nd	4·6	2·6	—	—	0·56	,,	—
July 2nd to 4th	6·0	12·8	0·330	0·700	2·13	Abundant acetone.	Child ill. Only 1 oz. urine July 3rd. At 3 P.M., July 4th, given large quantities of glucose.
,, 5th	7·3	7·2	0·271	0·22	1·00	Acetone diminishing.	Child ill.
,, ,, (12 noon to 3 P.M.)	8·8	4·0			0·45	No acetone.	,,
,, 6th (12 midnight)	11·5	1·25	—	—	0·108	,,	Child recovering.
,, ,, (4.30 A.M.)	10·7	1·0	—	—	0·1	,,	Attack ceased. Temperature normal.
July 7th	6·0	1·2	—	—	0·2	No acetone.	—
July 8th	7·0	1·5	—	—	0·21	No acetone.	From 3 P.M. protein-fat diet for four days.
,, 9th	8·7	3·8	—	—	0·44	Slight acetone.	Child well. No temperature.
,, 11th	8·5	8·7	0·234	0·24	1·0	Abundant acetone for three days.	Child well. Glucose at 3 P.M.
,, 12th	6·5	4·1	—	—	0·63	Abundant acetone.	Specimen before glucose. Child well.
,, 13th (3.30 A.M.)	3·0	1·98	—	—	0·6	Slight acetone.	Specimen 9 hours after glucose.
,, ,, (11 A.M.)	7·8	2·8	—	—	0·36	No acetone.	Specimen 17 hours after glucose.
,, ,, (2 P.M.)	7·8	3·7	—	—	0·47	,,	Child well.
,, ,, (8 P.M.)	14·0	6·0	—	—	0·43	,,	,,
July 14th	6·4	2·45	—	—	0·38	No acetone.	Child well.

[8] Journal of Physiology, vol. xxxix., p. 485, 1909-10.

[9] 5 c.c. urine + 3 grm. of $(NH_4)_2SO_4$ + 3 drops 5 per cent. sodium nitroprusside solution (freshly made) + 2 c.c. ammonia—acetone gives slowly developing permanganate colour.

the onset of symptoms, yet indirectly they might be masters of the situation in that their appearance just upset the balance in a complex which was evidently unstable, and, as is evident from the creatin excretion, was being constantly attacked by other deleterious forces. If this were the case, then acidosis, occurring during a period of quiescence, ought to be followed immediately by an attack of illness. On July 8th glucose and other carbohydrates were taken off the diet, which for the most part consisted of meat, casein-bread, and milk, and this was maintained until July 12th. Considerable quantities of acetone appeared in the urine, together with an increase of creatin, so that the creatin-creatinin ratio rose from 0·2 to 1. But in spite of the acidosis the child was perfectly well, the temperature and all other conditions being quite normal. This is conclusive evidence that acidosis in itself had nothing whatever to do with the symptoms of cyclic vomiting. To apply the term "acid intoxication" to such a condition would then be absolutely wrong and misleading.

One other point was tried. Although acidosis depends upon the absence of, or inability to metabolise, carbohydrates, it really means an incomplete oxidation of fatty acids. Was it possible that the child's power to deal with fatty acids was deficient? To test this he was given cod-liver-oil, and extra quantities of cream and bacon fat were added to his otherwise normal diet. He relished the fat and put on considerable weight at this time, and no acid bodies appeared in the urine. In other words, his power to metabolise fatty acids was perfectly normal so long as there was a sufficiency of glycogen in the liver.

What, then, is the cause of this recurrent vomiting? Unfortunately, the child left the hospital during a quiescent period and so it has been impossible to complete the investigation. From a consideration of the creatin excretion in a great number of pathological conditions (shortly to be published) I feel that the condition depends upon some intoxication in the portal area which is constantly acting. Thinking it might be a bacterial infection, Mr. F. W. Twort of the Brown Institute endeavoured to grow cultures from the child's blood taken during the height of an attack. The results were negative. The urine was also sterile. A positive result would have been interesting, but a negative result does not discredit the theory of a portal infection. In his Harvey lecture of 1906 Herter mentions cases of cyclic vomiting depending upon excessive intestinal putrefaction. I am strongly inclined to connect one of the facts discovered recently by Dale [10] and Barger in their investigations of the physiological actions of amines with this case of cyclic vomiting. They isolated considerable quantities of β-iminazo-ethylamine, the amine from histidine, from the wall of the intestine of the ox, and Dale and Laidlaw showed that this substance produced vomiting and all the poisoning effects of peptone (except altering the coagulability of the blood) and was an extremely potent poison. Quite recently Twort and I have isolated from the contents of the human intestine a bacillus which produces β-iminazo-ethylamine from histidine. An account of this isolation will be published shortly. It seems to me that this case of cyclic vomiting might depend on an excessive formation of this substance or of something of a similar nature in the wall of the intestine. It can be well imagined that an excessive absorption of this substance into the portal circulation would produce many [11] of the symptoms developed in the above-described case.

To sum up:—

1. The child was never normal because he always excreted creatin. The cause of the attacks was always at work.

2. The creatin excretion rose considerably several days before the attack, so that by the estimation of this substance it was possible to predict the onset of symptoms.

3. Acidosis had nothing whatever to do with the attack, but was only an episode like any other symptom. And this for the following reasons: (*a*) the child's power to metabolise fats was quite normal; (*b*) acidosis started after the onset of symptoms and cleared up, on giving glucose, before their abatement; and (*c*) a condition of acidosis for four days in a quiescent period was accompanied by no trace of ill-effect.

4. It is thought that the condition of recurrent vomiting is due to some intestinal intoxication which may or may not depend on bacteria. It is suggested that such a condition might depend upon an accumulation or excessive formation of β-iminazol-ethylamine in the intestinal wall.

[10] See various papers in Journal of Physiology from 1909 onwards.

[11] The effect of injecting β-iminazol-ethylamine into a cat by Dale and Laidlaw showed one great difference from this case of cyclic vomiting—viz., purging as contrasted with constipation.

Creatinuria and Acidosis.

Following upon the introduction of Folin's method of estimating creatin—a method which is easy and accurate—physiological research into creatin and creatinin metabolism has been very active of recent years, although the investigation of the behaviour of these substances under pathological conditions has not yet gained a clinical footing. There can be but little doubt, however, that in the near future they will be regarded as of some importance in diagnosis.

Unfortunately, the physiological part played by creatin and creatinin is still shrouded in mystery, although it appears probable, in view of the concurrence, in the main, of recent investigations, that at least the right line of attack is being followed up. The old theory that when muscle contracts creatin is liberated and converted to creatinin has been entirely given up. In 1908 [12] I endeavoured to show that the liver is the centre about which creatin metabolism plays, and that it would be by concentrating one's attack upon this organ that the problems associated with creatin would be made clear. It seems fair to say that nearly all recent investigators on this subject have taken this view, although, on the other hand, the hypothesis itself which I promulgated as explaining my facts is certainly not sufficient and is probably not correct in its details.

One of the observations which I published was that in cancer of the liver large quantities of creatin appeared in the urine, while in conditions like syphilitic liver, cirrhosis of the liver, and venous engorgement no creatin was excreted. I shall shortly publish further papers on this subject. At the present moment I wish to bring to notice another condition in which creatin is excreted—viz., in correlation with acetone formation, as illustrated by this case of cyclic vomiting. Since all recent work on acidosis indicates that the liver is the main, and probably the only, seat of β-oxybutyric and aceto-acetic acids, it is evident that to establish a constant relation between creatinuria and acidosis will involve an explanation of creatinuria which is associated with abnormal liver metabolism.

It is safe to generalise as regards the condition of acidosis that in such a condition either the body has no carbohydrates or else cannot make use of carbohydrate. Under such conditions the katabolism of fatty acids goes wrong, and with the excretion of β-oxybutyric and aceto-acetic acids much of the energy of the fatty acids is lost to the body. Various observers have noticed that creatin is sometimes found associated with acetone in urine, but to Cathcart [13] is due the credit of having worked out this subject and shown that absence of carbohydrate from the diet, or inability to use carbohydrate as in diabetes, involves an excretion of creatin. Since acidosis depends on absence of carbohydrate, and since creatinuria also depends on absence of carbohydrate, it seems legitimate to associate creatin with carbohydrate in its normal function in the body. Yet such an inference, I think, would be wrong. This is not the occasion on which I can discuss this matter, but I should just like to point out that the creatin excreted in this case of cyclic vomiting obviously results from *two* causes. In the first place, the child always excretes creatin, even when his carbohydrate and fat metabolism were normal—i.e., at a time when he was quite well, putting on weight quickly, eating a sufficiency of carbohydrate, and excreting no acetone bodies. Secondly, with the appearance of acidosis the creatin excretion was markedly increased, only to diminish greatly on the addition of glucose to the diet. I think one can only generalise to the extent that in both cases the creatin excretion was due to a liver abnormality—in the first case due to the action of some toxin, the potency of which periodically became so pronounced as to make the child very ill, and in the second case depending upon, or only associated with, the aberrant fatty acid metabolism due to lack of glycogen in the liver cells. The question then arises as to whether the cause of creatin excretion in diabetes is identical with that which is associated with the creatin excretion of inanition or deficiency of carbohydrate, or whether some other cause, as in cyclic vomiting, is present. Using an

[12] Journal of Physiology, vol. xxxvi., p. 447.

[13] Ibid., vol. xxxix., p. 311.

adequate method of detecting acetone—i.e., Rothera's sodium nitro-prusside reaction—I have been struck by the almost constant appearance of this substance in the urine of diabetic patients, and I think it probable that only one cause—the abnormality of the fat metabolism of the liver depending upon deficient use of carbohydrate—is present in such cases.

From the examination of large numbers of pathological urines, I think it can be safely stated that *all cases of acetonuria are accompanied by creatinuria, while the reverse is certainly not true.* The fact that this relation is not reciprocal should of itself make one hesitate to associate creatin directly with carbohydrate metabolism. Incidentally, I should like to add that the creatinuria of cancer of the liver is not associated with acidosis, although, it may be, of course, if the patient is starving.

Whereas the physiological chemistry of acidosis has rapidly been elucidated by the work of physiologists during the past decade, that of creatin and creatinin stands resistant to all efforts. The distinctive feature about these latter two substances is the methylated nitrogen which might conceivably arise in one of two ways: (1) by destruction of the protein molecule; and (2) by the methylation of the N group of some intermediate product of metabolism. Present knowledge is decidedly against the first explanation, for no methyl-imido (CH_3–NH) group has ever yet been isolated or distinguished in protein. However, the chemistry of the molecular grouping of protein is by no means complete yet, and it would not be surprising if this grouping were discovered. As regards the methylation of the nitrogen atom, it is a well-recognised means adopted by the body for rendering harmful substances innocuous—e.g., tellurium is excreted as methyl telluride; and pyridin is excreted as methyl-pyridyl ammonium hydroxide $OHCH_3$–NC_6H_5. With this idea Jaffé[14] fed rabbits on glycocyamin (guanidin acetic acid) and found, in consequence, that the excretion of creatin (methyl guanidin acetic acid) was increased. I think, however, that these results should be accepted with great caution, for during the experiments the rabbits were ill and developed diarrhœa, and I have noticed that a rabbit with diarrhœa always excretes considerable quantities of creatin. From the methylation point of view, creatin is chemically related to arginin, since they both contain the guanidin grouping $C(=NH)(NH_2)_2$, but the nitrogen of ingested arginin is nearly all excreted as urea. Again, both creatinin and histidin contain the imidazol ring, yet there is no evidence that these substances are physiologically related in the body.

With acetonuria, on the other hand, the matter stands very different. Although it seems probable that the formation of acetone itself has no significance, yet it is constantly excreted in acidosis, in amounts which run parallel to the really significant substance β-oxybutyric acid (Gunnar Forssner).[15] Even the normal person can only partially metabolise acetone, whereas ingested β-oxybutyric acid is completely used, so that it is probable that the formation of acetone in acidosis is a chance occurrence of no physiological significance. Its importance lies in the ease with which it is detected. The study of acidosis in diabetes has been the basis of splendid work performed by Baer and Blum, Schwarz, Knoop, Friedmann,[16] and other continental researchers. By noticing the influence of all manner of ingested fatty acids on the excretion of β-oxybutyric acid in diabetics, they have succeeded in elucidating one of the two important known chemical changes which take place in fatty acid katabolism—namely, their oxidation at the β, δ, &c., carbon atoms. Similar work has been done on alkaptonuric patients excreting homogentisic acid, and from this considerable information as to the breaking down of aromatic substances in the body has been gained. All these results have been controlled by Embden,[17] who perfused livers with different acids and estimated the β-oxybutyric acid formed. Although but little of such work has been done in this country, the other side of fatty acid metabolism—namely, the introduction of unsaturated linkages by the liver—has been entirely developed by English workers—Leathes[18] and his collaborators, particularly Hartley,[19] and at Cambridge, Mottram.[20] Gradually are we beginning to see why unsaturated acids like oleic and erucic acids do not increase the acidosis of a diabetic patient, while stearic, palmitic acid, and, better still, butyric acid do so. Also, how a protein molecule can be regarded from an acidosis point of view as being composed of two parts—one part represented by leucine and tyrosine, which on being denitrified increases the excretion of β-oxybutyric acid in the diabetic patient, and the other portion represented by alanine, valine, and glycocoll, which exerts an antiketonic effect, and reduces the β-oxybutyric acid of artificially induced acidosis. From which effect it seems legitimate to assume these latter substances are either built up into a carbohydrate molecule or into some intermediate breakdown product of carbohydrate metabolism.

One other point, and the most important from the clinical point of view—the part played by acidosis in regard to symptoms—remains for brief consideration. Ever since Stadelmann, Naunyn, and Magnus Levy[21] insisted on their importance in diabetic coma, the medical mind has assigned to the presence of β oxybutyric acid and the acetone bodies in the organism an importance which is nothing short of ludicrous. No matter what the symptoms are, if acetone is found in the urine, it appears customary to describe the case as one of acid intoxication. It seems necessary to mention that even in diabetic coma it is by no means a fully settled question whether the symptoms are *directly* due to the acid bodies. The comparative failure of the alkali treatment; the vagarious way in which some diabetic patients excrete large quantities of β-oxybutyric acid for years without symptoms; the absence of any change in the alkalinity of the blood plasma in such patients, whereas in artificial acidosis in animals produced by the ingestion of acids there is a slight but definite decrease in alkalinity; the occurrence of dyspnœic coma in uræmia, and other non-diabetic cases; these points and several others can be urged against the theory of direct relation between the acids formed in diabetes and coma. Besides, the other condition accompanying acidosis—absence of, or inability to use, carbohydrate in the liver—does not appear to have been sufficiently considered as a possible factor in the onset of diabetic coma. Undoubtedly one of the most important functions of the liver is to neutralise poisonous substances which may be either absorbed from the intestine or be formed in the metabolic changes of the body. The excretion of toxic substances such as camphor, chloral, phenol, and skatol, as compounds of glycuronic acid, makes it evident that this "Entgiftung" property of the liver depends to a large extent on carbohydrates. Other evidence in the same direction was obtained by Hildebrandt,[22] who showed that a lethal dose of thymotin piperidide loses its effect if glucose, cane sugar, maltose, or to a less degree levulose, was given at the same time. May it not well be that in all cases of severe symptoms accompanying acidosis, and even in diabetic coma itself, one of the most important factors is the absence of glycogen in the liver cells, with a corresponding diminution in poison-neutralising effect, thus allowing the diffusion of intestinal and toxic substances other than acids throughout the organism? Certainly the method of combating acidosis of conditions other than diabetics by large quantities of glucose seems to me to be more scientific and more likely to lead to beneficial results than the giving of alkalies. By this means one is obviously tackling the condition nearer its source than when simply attempting to neutralise an already fully neutralised series of acids which are probably of no more importance than some of the other known chemical abnormalities

[14] Jaffé: Zeitschrift für Physiologische Chemie, Band xlviii., p. 430, 1906.

[15] Gunnar Forssner: Skandinavisches Archiv für Physiologie, Band xxii., pp. (506) 349.

[16] For a review of the whole subject see article in Ergebnisse der Physiologie, 1910, by Otto Poges.

[17] Embden: Hofmeister's Beiträge, Band viii., p. 121, 1906.

[18] Leathes: See Harvey Lecture for 1909, THE LANCET, vol. i., 1909, p. 593.

[19] Hartley: Journal of Physiology, vol. xxxviii., p. 353.

[20] Mottram: Ibid., vol. xxxviii., p. 281.

[21] See Magnus Levy's article, John Hopkins Bulletin, February, 1911.

[22] Schmiedeberg's: Archiv für Experimentelle Pharmakologie und Pathologie, Ban dxliv. ,p. 308, 1900.

—such as the presence of creatin—which accompany this condition. For even if the causal connexion between acidosis and diabetic coma is accepted, there can be but little doubt that the acidosis as such, accompanying fever, gastro-enteritis, delayed chloroform poisoning, and cyclic vomiting, and many other conditions, is never of symptomatic significance. In other words, the term acid-intoxication, in the real sense of the word, applied to these conditions is a misnomer. The quantities of β oxybutyric acid and other acetone bodies excreted in these conditions are small—i.e., 10 to 15 grm. at the most—compared with the quantities excreted in diabetes, e.g., one of Magnus Levy's cases excreted 160 grm. per diem, and it is difficult to see how they could possibly produce symptoms. As regards the case above described, it has been seen that acidosis was merely a symptom and had nothing whatever to do with the attacks of cyclic vomiting.

THE PHYSIOLOGICAL IDEAL IN THE ARTIFICIAL FEEDING OF INFANTS.

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IT was said by Oliver Wendell Holmes that a pair of substantial mammary glands have the advantage over the two hemispheres of the most learned professor's brain in the art of compounding a nutritious fluid for infants. Since the enunciation of this aphorism the problem of infant feeding has increased enormously in urgency, but, unfortunately, much of the study devoted to the subject has only served to create difficulties and introduce complexity.

When an infant is submitted to artificial feeding the three most important questions which demand categorical replies concern (1) the quality of the food, (2) its quantity, and (3) the frequency of its administration. For the sake of convenience we will deal first with the two latter questions.

The quantity of food required by a healthy infant is usually ascertained from tables which exist in abundance both in medical and popular literature. These tables are constructed according to age-periods—a method which is physiologically unsound. There is no correspondence between age statistics and nutritional requirements. An infant requires food for purposes of growth, maintenance of body temperature, and as a source of energy for the performance of its vital functions. The amount required varies, not with its age, but with its weight and surface area. It is at once obvious that we cannot rationally satisfy the vital process of two healthy babies according to infant-feeding tables when one weighs 6½ lb. and the other 10 lb. at the same age.

A practical method of adjusting the infant-feeding tables according to weight would be to estimate exactly how much milk healthy infants of varying weights draw from the breast at each feed. The following may be taken as a fair average:—

Weight of infant.	Amount of feed.	Weight of infant.	Amount of feed.
6½ lb.	1½ oz.	15 lb.	4½ ,,
8½ ,,	2½ ,,	17 ,,	5½ ,,
11 ,,	3 ,,	19 ,,	7 ,,
13 ,,	3½ ,,		

As these are the quantities prescribed by Nature they stand in no need of further justification. But we may inquire whether these figures possess any rational significance. The scientific examination of these figures reveals the striking fact that four-fifths of the amount of food consumed by the healthy infant at the maternal breast corresponds precisely to the physical expenditure of the infant, and the other fifth is, therefore, employed in growth. This calculation is arrived at quite simply if we appreciate certain cardinal principles. The most important of these concerns the fact that the combustion of an infant's food within its tissues produces heat. An infant, in proportion to its weight, generates three times as much heat as an adult, because the surface area of an infant is, proportionately to its weight, nearly three times as great as that of an adult. We must be able to estimate the quantity of heat lost before we can assign the amount of food required to cover this loss, and in addition we must, of course, know how much heat the combustion of the food will supply. All these factors have now been accurately measured. Experiment shows that the amount of heat given off per diem by an adult equals 10 calories for every pound of his weight. We have already seen that an infant's loss of heat is thrice that of an adult, comparing weight for weight, therefore 30 calories per pound weight represent an infant's loss of heat. Consequently the average baby, weighing 7 lb. at birth, will lose 210 calories of heat daily. This must be replaced by food of adequate calorific power, and beyond this a supply sufficient for growth must be provided. This additional amount corresponds to one-fifth of the quantity imbibed by a healthy infant from the breast. Therefore the total amount of food required by an infant must represent the value of some 250 calories.

What is the practical value of this apparently theoretical calculation? This is at once realised when we remember that the average baby obtains from the mother within the first fortnight of its existence a daily amount of about 16 oz., and that the total combustion of 16 oz. of human milk produces 250 calories of heat. Thus the remarkable fact is clearly demonstrated that Nature provides for the infant just that sufficiency of food which will make good all its heat loss, and supply in addition an adequate pabulum for growth.

The daily amount of an infant's food bears a constant relation to the frequency of the feeds, because the whole quantity must be divided into portions corresponding to the capacity of the stomach. The amount which an infant's stomach can comfortably contain depends upon its weight; thus in a 7 lb. baby this will be 1½ oz., in a 14 lb. baby it will be 3½ oz. As a 7 lb. baby requires 16 oz. per diem this amount must be subdivided into 11 feeds. A 14 lb. baby consumes about 28 oz. per diem, and therefore eight feeds will be the appropriate number for it. It is noteworthy that the intervals of feeding, as determined in this way, correspond with the rise and fall of the lacteal tide in the human breasts, and that they also correspond with the periods required for the emptying of the infant's stomach.

Having thus seen that Nature's instinctive method of infant-feeding proceeds on a system which is confirmed by the strictest scientific inquiry, we are in a position to apply these principles to the qualitative artificial feeding of infants. If we accept cow's milk as the only practicable substitute for human milk, it would be a very simple matter to compare the caloric value of the two kinds of milk and give that amount of cow's milk which will yield the necessary number of calories. This calculation is very easy because the caloric value of cow's milk is greater than that of human milk in the proportion of 7 to 5. But an infant is not a calorimeter and the arrangement of its artificial diet cannot be conducted on this mathematical plan. The great factor of digestibility must be reckoned with, and this consideration involves an accurate knowledge of the difference in constitution between cow's milk and human milk. Artificial infant-feeding becomes a fine art when cow's milk is so modified as to resemble the constituents of human milk both in kind and in degree. The task is a complex one because a comparison of the analysis of the two milks shows that much readjustment is required. The urgency for this is emphasised by the almost universal experience that cow's milk upsets babies unless it is modified in some way or other.

The problem to be solved is postulated immediately we arrange the analyses of cow's and human milk in juxtaposition. Although these analyses vary from each other they all agree in displaying the essential differences between the two milks. The following analyses may be submitted:—

Cow's milk.					Human milk.				
Casein.	Lact-albumin.	Sugar.	Fat.	Salts.	Casein.	Lact-albumin.	Sugar.	Fat.	Salts.
3	·3	4·4	3·4	·7 (Randnitz)	·6–1	·5	6·4	3·4	·14–·28
2·5–3·7	·5–1	4·4	3·5–4	·6 (Cautley)	·6–1·3	·5–1·2	6–7	3–4	·2
3·25	·75	4	3·5	— (Still)	·6	1·4	7	3·5	—
2·7–3	·2–·3	—	—	— (Bergell)	·8	·6	—	—	—

All authorities agree in ascribing the same percentage of fat to both human and cow's milk. They also agree that human milk contains about 2 per cent. more sugar than cow's milk, and that the latter contains at least three times as many saline constituents as human milk. But there are some variations in regard to the proportional percentages of casein and lactalbumin. Notwithstanding these variations, however, one outstanding fact is brought into bold relief—i.e., that the proteid content of human milk consists very largely of lactalbumin, whereas the proteid of cow's milk is almost entirely casein. As we must credit Nature with the faculty of providing what is physiologically the most appropriate nutriment, it follows that our artificial diet for infants must contain a greater amount of lactalbumin than is present in cow's milk, or in other words, must contain as much lactalbumin as is present in human milk. To realise this is one of the fundamental conditions for success in the artificial feeding of infants, and undoubtedly one of the great causes for failure is the fact that in the milk modification usually recommended this lactalbumin is replaced by casein. The majority of text-books teach that cow's milk should be diluted until its proteid content approximates to the proteid content of human milk. The reason advanced for this is the indigestibility of the casein of cow's milk, but it is obvious that dilution only makes the proteids of cow's milk resemble the proteids of human milk arithmetically but not physiologically. It is not because a milk has a total proteid content equal to human milk that it is suitable for infant-feeding. It might just as well be argued that a milk with a total solid content equal to that of human milk constituted a suitable food for an infant.

The solution of the difficulty involved herein is to be found in correlating the two facts that (1) cow's milk casein is acknowledged as the great obstacle to infantile digestion; and (2) that Nature provides a large proportion of lactalbumin in human milk. Now it is clear that a considerable dilution of cow's milk can reduce its quantity of casein to that of human milk. According to the figures given by most authorities this would require a very much greater dilution than is the usual practice. But it is also clear that no manipulation of cow's milk can render it equal to human milk in lactalbumin content. As the cow's milk is diluted so the lactalbumin begins to vanish, and even if it is not diluted at all it falls far short of the proportion required.

It has, of course, been recognised that this deficiency in lactalbumin is a serious blemish on the customary methods of milk modification. Hitherto there has been one palliative available which consists in diluting the milk with whey—i.e., a solution of lactalbumin, sugar, and salts. The method succeeds in providing nutriment containing as much lactalbumin as cow's milk possesses. The use of whey, however, only meets the difficulty very partially, because, in the first place, it cannot possibly supply Nature's proportion of lactalbumin, and, secondly, the domestic preparation of whey is troublesome, the product is often a decided failure. In addition to this, German observers have lately drawn attention to cases of severe gastro-enteritis accompanied by signs of general intoxication as a result of the use of whey in infant-feeding. Indeed, it has been found that a milk mixture containing the casein of human milk and the whey of cow's milk produced similar results, thus clearly fixing the responsibility on the whey constituent of the mixture.

This line of reasoning enforces the conviction that the addition of pure lactalbumin to the milk mixtures of hand-fed infants is an indispensable requirement in order to guarantee the success of artificial feeding. It is just as illogical to deprive an infant of its lactalbumin as it is to deprive it of its sugar. To supplement the inadequate amount of lactalbumin contained in the usual milk mixtures by an excess of casein is to throw an undue burden on the physiology of gastric digestion. We need but recall the series of changes to which casein is subject in the stomach and intestines before it is absorbed and compare them with the physical ease with which soluble albumin is absorbed to understand that casein can never be an appropriate substitute for lactalbumin.

Modern research, moreover, suggests that it is the abundance of lactalbumin present in human milk which makes its casein digestible, and that cow's milk casein is indigestible because of the paucity of lactalbumin with which it is associated. Consequently, the crucial distinction between the digestibility of cow's milk and human milk rests with the difference in lactalbumin content. The explanation of this circumstance follows from certain experimental investigations made on the physical state of solutions. Attention has been drawn to the condition of "colloidal solution," such as is formed by gelatin, gum, or other "colloid" bodies. A peculiarity of these colloidal solutions is that they cannot be precipitated by an acid, base or salt, but these solutions when dried can be re-dissolved. It has further been shown that many metals—e.g., silver, gold, mercury—can be prepared in the form of colloids, but when these are dissolved the solutions are precipitated by the action of an acid, base or salt. Moreover, these solutions when dried do not re-dissolve. It is obvious, therefore, that there are two classes of colloids with differing physical properties. The former group is known as "reversible colloids," the latter as "irreversible colloids." Further experiment revealed the fact that the addition of a small quantity of solution of gelatin to a solution of colloidal silver protected the latter solution from precipitation, and enabled the solution after drying to become re-dissolved. It is now known as a physical fact that a reversible colloid protects an irreversible colloid from precipitation or coagulation. The importance of all this centres in the circumstance that *casein is an irreversible coagulating colloid*, whereas *lactalbumin is a reversible or protecting colloid*. Human milk thus contains an excess of protective colloid, and therefore its casein forms a fine soft coagulum, in contrast to the firm bulky curd of cow's milk.

Thus there accumulates an abundance of evidence, decisive of the claim for lactalbumin in infant-feeding. As lactalbumin is now procurable in the form of a neutral soluble substance in powder form, there is ample opportunity for its adoption in practice. This substance, termed albulactin, lends itself to a very ready demonstration of its effects if a weak solution be added in a test-tube to pure milk and then acidified with diluted acetic acid, and the result be compared with the contents of a test-tube of pure milk without albulactin to which dilute acetic acid has been added. In the former case the precipitate obtained is soft, flocculent, and consists of minute particles; in the latter case the precipitate is the ordinary thick, firm, and tough curd. Further, if this former precipitate is compared with the result yielded by human milk to which dilute acetic acid has been added they will be absolutely indistinguishable from each other. This, however, is not mere test-tube experimentation, for it is confirmed by clinical experience. Dr. Kamnitzer and Dr. Cassell have recorded a series of cases of infant-feeding wherein this effect of albulactin has been verified by syphoning off the stomach contents during the process of digestion. They compare the material drawn off to small-grained oatmeal soup contrasting very markedly with the thick and dense curd formation which characterises the digestion of cow's milk in the infant's stomach. As collateral evidence one may adduce the observation frequently made by experienced nurses, that the stools of infants taking milk modified with albulactin are practically identical in appearance with those of breast-fed infants.

The amount of albulactin which should be added to the milk mixture in order to secure these physiological benefits should correspond with the amount of lactalbumin present in human milk. Some observers put this as high as 1·4 per cent., others as low as 0·5 per cent., but for practical purposes an addition of 3 grains to each ounce of the milk mixture is perfectly satisfactory. Having made this provision for the supply of the lactalbumin one may dilute the cow's milk so as to reduce the casein in the mixture to the percentage in which it exists in human milk. This is merely a matter of manipulating figures, but in view of the uncertainty of figures and of some recent criticism to which the whole subject of casein has been submitted, it is doubtful whether this extreme reduction in casein content is required.

Professor Budin of Paris claims success for feeding infants on undiluted cow's milk which has been fully sterilised. It is stated that the complete sterilisation alters the casein in such a way as to prevent the formation of tough curds. A new method of feeding in case of gastro-enteritis and toxæmia of infants by means of "casein" milk has lately secured extensive trial in Germany. This milk contains 3·5 per cent. of casein, and only 1–1·5 per cent. of sugar, but the casein is presented in such a way that the development of indigestible curds is prevented. It probably exists in this milk in the form of casein lactate.

From yet another source there comes corroborative evidence

that casein has been unduly incriminated in the production of digestive disturbances in infants. From time immemorial we have been accustomed to scrutinise the stools of infants, and we have pointed to the white masses as testimony of casein indigestion. Some authorities have lately denied the truth of this inference, and maintain that these masses do not consist of casein but of fat. Some analyses are said to have shown that they contain fatty acids and soap only. Other analyses certainly do reveal the presence of proteid, but the suggestion is made that this probably comes from the intestinal secretion. Indeed, Ludwig Meyer states that these so-called casein curds are even found in the stools of infants fed on whey. A keen controversy is in progress in regard to this matter, but it is quite obvious that the truth lies midway between the extreme views of the opponents, for it is well known that casein entangles a large proportion of fat in its meshes as it clots. If the clot happens to be tough, it will resist the action of the digestive juices; the fat in its interior will not be acted on by the pancreatic secretion, and hence the appearance in the stools of more or less unaltered fat. There is no doubt that large curds owe their size to their association with fat. Simple casein curd without any fat is never bulky, neither is it leathery and tenacious.

These observations also direct our attention to the existence of fat indigestion. It would be rash to adopt the view of those who are beginning to ascribe to the fat of cow's milk the main responsibility for infantile indigestion, but we cannot disguise from ourselves the fact that there are important differences between the fat of human milk and of cow's milk. The fat of human milk is comparatively rich in olein, which is an easily digested substance, whereas stearin and palmitin predominate in cow's milk fat, and these require much more digestive effort. The fat of human milk has a higher iodine value than that of cow's milk, and it also possesses a lower melting point. When cream is used to supply deficiency in fat the infant is often provided with some preservative which may prove detrimental. So far we are unaware of any plan to eliminate fat indigestion as has been achieved in the case of casein indigestion. But the very fact that we can banish casein indigestion and permit an infant to feed with impunity on a somewhat larger proportion thereof than Nature dictates, intimates to us that our dilution of the cow's milk need not go so far as to make it unduly poor in fat, and thus there will be no need to add cream to the final mixture. There is reason to believe that an excess of really digestible casein will satisfactorily supplement the deficiency in fat as long as it does not fall below 2 per cent. If the fat is reduced to less than 1 per cent. the infant becomes hungry, notwithstanding an abundance of proteids. It is not possible to be dogmatic on this question of fat in infant feeding, because current scientific opinion thereon is in a state of fluctuation, but it is undoubtedly wrong to assume that the usual mixture containing equal parts of milk and water requires the addition of cream. Provided that the casein in such a mixture is really digestible the addition of cream is in ordinary circumstances quite unnecessary.

The practical outcome of the foregoing remarks resolves itself into a strong claim for a routine milk mixture which consists of equal parts of milk and water, with the addition of three grains of albulactin (lactalbumin) to each ounce of the mixture and of an appropriate quantity of sugar. Although this mixture contains more casein than human milk, this excess is justified by the presence of lactalbumin, which protects it from the formation of tough curds, and it likewise also compensates for the fact that the fat is not up to the human standard in quantity. This mixture of equal parts of milk and water should not be given to infants for the first fortnight; they should be started with 2 parts of water to 1 of milk. The proportion may then be raised to 3 parts of water to 2 of milk, and at the end of the second month the normal healthy infant will be quite prepared to digest equal parts of milk and water, with the appropriate addition of lactalbumin and sugar. The amount of each feed must be regulated according to the weight of the infant, as explained earlier in this paper.

The use of lactalbumin in the artificial feeding of infants is a comparatively new procedure. The recorded observations already made with it convince one that its action in the modification of cow's milk promises to supersede all the other devices which are in vogue for making such milk suitable for infants. When a new-born infant is started upon its career of hand feeding the practitioner is always anxious as to whether the bottle will agree. My own observations have impressed me very firmly with the conviction that these anxieties may be dispelled when the milk is modified with soluble lactalbumin. It gives a sense of security which is otherwise only felt when breast feeding is being employed. Previously in my own practice, if an infant showed any signs of dyspeptic discomfort in its early days of artificial feeding it usually meant that there would be much ringing of the changes before a suitable milk mixture could be found. But after having recourse to milk modification by means of lactalbumin it soon became evident that this method bore the palm, and that it is preferable to and more reliable than the use of citrated milk, peptonised milk, cream and whey feeding, and all other plans which have been adopted to meet the frailty of infantile digestion.

The following instances will illustrate the type of case upon which my view of this method of milk modification has been founded.

CASE 1.—Child born April, 1909. The mother a somewhat elderly primipara, in whom the establishment of lactation took longer than usual. The infant, after struggling in vain with the breasts for three or four days, apparently felt the delusion and disappointment so keenly that it absolutely refused to make any further attempts when the belated milk actually arrived. A milk mixture (1 part cow's milk to 2 of water) was given with all due precaution; this resulted in the production of intense colic and flatulence. The infant cried literally for hours at a stretch, causing a hernia to protrude, and there was vomiting of the usual thick curds. The milk was diluted 1 to 3 and citrate of soda added; the pain appeared to be less; the vomiting continued, but the curds were less dense, and diarrhœa supervened. At the end of the first week the infant had dropped in weight from 7 lb. 2 oz. to 6 lb. 12 oz.; its face indicated distress, and the whole outlook was unpromising, as the greater part of the night was still occupied by the infant's moaning. I then left off the citrate of soda and added 5 grains of albulactin to each ounce-and-a-half feed of cow's milk diluted as before 1 to 3. The most striking effect was the cessation of the colic, for the infant then experienced its first comfortable day, the vomiting followed suit, and the second week registered a gain of 2 oz. In the third week the strength of the milk mixture was increased to 1 to 2, and as development was proceeding apace this strength was progressively increased to equal parts of milk and water, which the infant digested most satisfactorily at the age of 10 weeks, its weight then being 10½ lb.

CASE 2.—This baby was born in July, 1909, and was the second child of parents whose first child had died a year previously in a convulsive seizure consequent upon digestive disorder. The infant was only of eight months' gestation, but weighed 6 lb. at birth. The mother was unable to suckle and the child was fed from the first with humanised milk delivered to the house in the Soxhlet outfit. On the sixth day there was definite jaundice and then diarrhœa supervened with an eczematous condition of the buttocks. Half-grain doses of grey powder were given daily for three days without improvement, and as the weight had then fallen to 5 lb. 6 oz. a change of food was made to a dilute whey and cream mixture. The diarrhœa certainly diminished, but this mixture was promptly vomited after each feed. During the second week the infant lost another 4 ounces, and a somewhat widespread outbreak of seborrhœa appeared on the fourteenth day. I then fed the infant for two days on a 1 per cent. solution of albulactin with milk sugar, which was well retained. The next step was to fortify this solution with cow's milk, beginning with two teaspoonfuls to the ounce, gradually increasing the quantity of cow's milk, as the mixture appeared to agree perfectly. There were no further symptoms of dyspepsia, and when the child was a month old its weight was again 6 lb. The further progress of the case was excellent, and the child weighed in January, 1911, 14½ lb.

CASE 3.—This infant was 3½ months old when he came under my care in September, 1910. He was being breast-fed, but for the last few weeks the weight had been fluctuating between 10 and 10½ lb. There were great distress from colic, very frequent sickness, and obstinate constipation. It was clear that this was one of those somewhat rare cases where the mother's milk was not agreeing. A change of diet under these circumstances is often a perilous undertaking, but I ventured, with some confidence, on a mixture consisting of equal parts of cow's milk and water (1½ oz. of each) with the addition of 10 gr. of albulactin to each feed. The result was perfectly gratifying, no further indication of dyspepsia ever manifested itself. The whining and moaning baby became transformed into a picture of contentment, he began to thrive again immediately, and while under observation there was a steady increase in weight of some 4 oz. per week.

To advise a change from human milk to cow's milk is very rarely required in the feeding of infants. It constitutes the exception which emphasises the rule that the breast must dominate in the realms of infant-feeding. No artifice of scientific modification can compare with the human secretion, and if it be true that the composition of milk changes while it is actually being withdrawn by the infant from the breast, so that the fore milk differs in its fat and casein proportions from the subsequent milk, it is evident that "percentage" feeding, calculated with mathematical accuracy, is a fallacious imitation of Nature. No ingenuity of contrivance can provide an infant with a "course" of food of varying composition such as it apparently obtains from the breast. But though it be vain to attempt

to follow Nature to the accuracy of decimal points, it nevertheless does behove us to adhere to the broad principles of imitation. We cannot pretend to maintain these principles as long as we ignore the existence of lactalbumin and act as if it were identical with casein. It is to be hoped that the attention which has been drawn to this anomaly will contribute towards the removal of a serious obstacle in the successful management of infant-feeding. The few cases quoted above only refer to the adoption of lactalbumin modification after other methods had failed, but the ideal in this respect will not be attained until it is recognised that the nutritive function of lactalbumin in milk ought to be given its opportunity long before mischief has set in. On chemical, physiological, and clinical grounds lactalbumin demands a permanent position in all cow's-milk mixtures intended for infant use.

Shoot-up-Hill, N.W.

SUCCESS OR FAILURE IN ELECTRO-THERAPY: A CONSIDERATION OF SOME OF THE CAUSES.[1]

BY SAMUEL SLOAN, M.D. GLASG.,

PRESIDENT OF THE ELECTRO-THERAPEUTICAL SECTION OF THE ROYAL SOCIETY OF MEDICINE DURING 1909-10; EXAMINER IN MIDWIFERY AND DISEASES OF WOMEN TO THE UNIVERSITY OF GLASGOW.

THIS is the tenth year since the foundation of the British Electro-Therapeutical Society, the parent of the present Electro-Therapeutical Section of the Royal Society of Medicine, and it seems to me a fitting opportunity to review the progress of electro-therapeutics during that time. Electro-therapy now has no need to fear the sneers of the profession. At the present day it is more in danger of being made the spoilt child of medicine, for it is admitted even by those who are not working in this department that no specialty has made more advance in recent years or is pursued on more strictly scientific lines.

I shall not attempt to give a *résumé* of the general progress of electro-therapeutics since the foundation of our society, but shall confine myself to what is strictly personal, and attempt to give briefly a record of some of the experience I have myself gained during these years, in so far as it may be helpful towards securing success in the future.

If I had been asked, affer one year's experience of high-frequency treatment, what I really thought of it I should have had to confess that I had some difficulty in answering the question. My work had not been so successful as I had anticipated. I had not even then realised the possibilities of the treatment. By that time I had acquired so much experience of low-tension currents that I was perhaps hard to please. Now I have no hesitation in saying that I would be seriously handicapped in the struggle with disease without the whole of my electric plant at my command. I have had many failures in the past, but I have endeavoured to make these failures milestones on the road to success, and I am feeling now such an amount of confidence in the therapeutic effects of electric currents that I start treatment in new cases with an assurance of success which I formerly could not have believed possible.

Wherein, then, is this confidence? This is the subject of my paper. In the first place let me emphasise the importance of a correct diagnosis in each case. This does not mean merely determining the name of the disease: it means obtaining a complete grasp of the patient's condition—why is he ill; what prevents him from getting well; what, if any, cause is still in operation? Indeed, I am realising more and more that the successful electro-therapeutist must be first of all a skilled physician with a wide experience of men and women in health and in disease; for it is a diagnosis not of the disease but of the patient which is all-important. Again, many failures in electro-therapy, I feel sure, are due to neglect in the diagnosis, not of the disease but of the cause. Take a case of headache, for instance. How difficult it is we all know to cure many of these even electro-therapeutically, largely because the discovery of the cause so often baffles us. Though there are many causes of headaches, these may for all practical purposes be considered as two only—namely, toxic and ocular. Let this be borne in mind and the cure is much simplified. If toxic, is the sepsis oral, tonsillitic, intestinal, uterine, or urinary? No permanent improvement can be effected till this is determined. Not the headache, therefore, must be treated in these cases, but the sepsis, and, except when the dentist is required, this can usually be to no small extent carried out electrically. If, again, on the removal of the sepsis medicinally or electrically the headache should persist, as is not at all unlikely, whether it be due to cerebral congestion or to peripheral neuritis, we have admirable means in our electric armamentaria to combat it. Oculists inform us that if the headache is ocular only the pain will be found absent on waking in the morning, will come on early in the day, and steadily increase till evening. Toxic headaches, on the other hand, are worst in the morning and get better as the day goes on, owing to the elimination of the toxins by exercise and fresh air. Of course, these two causes may be combined and often are, the headache being present in the early morning and remaining all day. Suitable glasses will at once remove the ocular cause and make the management of the case a more simple matter electrically. The same may be said of insomnia; but here we have a less simple origin. The psychic element enters largely into the etiology of this distressing complaint. Therefore the greater is the importance of a minute inquiry as to the whole life of the patient. Is the cause idleness, alcohol, emotional excess, or undue nerve strain? Once remove the cause or causes, however, and, if sound sleep does not follow, we have an assured means for its cure. At least this is my experience of treatment by faradisation of the brain, and even by auto-condensation.

Again, another cause of failure in electro-therapeutics, besides the failure to detect the cause, is that the electric treatment is begun before the patient is ready for it. He has come for this kind of treatment and will be disappointed if it is not started at once. Some preliminary treatment, however, is usually needed. Or, again, he is too weak or his work is too strenuous, or coming for it would involve an amount of fatigue which might not only prevent it from helping but even make it capable of doing injury. Anything, indeed, which is capable of benefiting in suitable cases, and when suitably administered, is equally capable of injuring under different conditions. This may almost be taken as an axiom, but I fear that in electro-therapy it is too frequently forgotten.

I have referred to the fact that, even after the removal of all the causes of disease, it by no means follows that all the symptoms will disappear. I had a few months ago an illustration of this. A gentleman called upon me for a certificate that he was no longer fit for his occupation. He was, and had been for many years, an accountant in an insurance office, and was finding it impossible to keep his brain in working order. His idea was that an outdoor occupation, such as inspector of agents, was all he was now fit for. I said I was not prepared to agree with him without some investigation of his case. I found upon examination that he was suffering from oral sepsis, gastric disturbance, and general ill-health, and I advised first the removal of all diseased stumps, then a tonic and a fairly long holiday. He felt so much better on his returning in a few weeks that he resumed his old work with the expectation of being able to continue it, but in a very short time his former condition returned and he was quite unable again for any brain-work. I then began the application of faradisation to the brain and promised to make him in a short time perfectly fit for his usual occupation. After a course of this, during which he remained at his ordinary employment, he declared himself quite well and able to manage his work with his former ease. Coming to me afterwards, he said that having been busy of late with the annual balancing of accounts, and having been working for the two previous weeks daily from 9 A.M. to 10 P.M., he was fearing another breakdown. I resumed the treatment for a few days, and so enabled him to tackle successfully the extra work till it was finished. In alcoholic cases, again, there is sure to be failure if treatment is undertaken without a period of probation and preparation. Total abstinence should be enjoined or only small quantities of a light claret or lager beer allowed, with perhaps a mild course of some saline. With these preliminaries a course of electro-therapy may be begun with reasonable expectation of success. Even in serious organic disease, where cure is impossible, I

[1] Read at a meeting of the Electro-therapeutical Section of the Royal Society of Medicine on April 21st, 1911.

have known life prolonged and made happier by judicious electric treatment. A case of malignant disease of the colon, for instance, was so much benefited by dorso-abdominal faradisation as to make the friends wonder if, after all, there had not been an error of diagnosis.

I have spoken of peripheral neuritis when referring to headache, and this is frequently the condition when headache is complained of. There is a tenderness on pressure on one or both temples, and possibly posteriorly also. Here general electric treatment is, I find, of only small avail; but the vacuum electrode, rubbed over the tender parts till a distinct redness results and remains as a burning soreness for an hour or two, will frequently relieve and finally remove the painful condition. Failing this, cocaine ionisation may act like magic. I usually, when the neuritis is over a well-padded region, such as the back or the shoulder, employ the condenser electrode and finish off with the electric vibrator. I suspect that one reason for failure in cases of so-called rheumatic neuritis of the trunk is that the spinal root of the nerve supplying the part is untreated; for, if careful examination be made of the spine, a tender spot will be felt on the affected side, treatment of which as above will go far towards effecting a cure of the pained part. Massage with the condenser electrode will sometimes remove a chronic sciatica when milder electric measures fail. In very chronic cases the massage must be deep and the applications strong. Excellent results may be obtained by fairly vigorous effluve from the high-frequency solenoid applied over the whole of the spine, strong enough to be just short of sparking and for a period of 15 minutes, for pains in the lower limbs and for a very troublesome condition, nocturnal fidgets, which sometimes render sleep impossible.

Even in organic affections of the spinal cord much good may sometimes be effected by electric applications to the spine. I have known a case of spastic paraplegia with exaggerated knee reflexes and marked ankle clonus arrested, although a year of active medicinal treatment and a prolonged holiday had failed, the case continuing to go from bad to worse. The reflexes are now almost normal and the ankle clonus has practically disappeared, whilst the patient is at least as well now as when the disease was first detected. The only electric treatment in this case was 15 minutes' daily application of the effluve to the whole of the spine. Another case, in a woman where the paraplegia had lasted for nine years, has remained well during the past ten years. No one could now suspect that she had ever been paralysed. In this case the treatment was by faradisation between the upper dorsal region and the feet once or twice a week for five months.

The history of auto-condensation since its introduction has been a varied one. I feel sure, from what I hear and read, that it is losing, if it has not already lost, its reputation; and yet no form of treatment is at present giving me more satisfaction. Why is this? I attribute my increasing success in part to my practice of giving smaller doses than formerly, and to the habit of controlling the environment of the patient on the days of administration of the treatment, as well as to the care with which I select my cases.

A common reason for failure in cases which are otherwise doing well is that patients do not allow sufficient time for repose, or at least cessation from strenuous work, before and after each application. The business of having the applications is hurried through. They come for the treatment fatigued perhaps, and they arrange for some important duties as soon as they leave—a dressmaker to see, some shopping to do, or a call to be made. This is fatal. An hour or two of quiet rest, not necessarily of idleness, before each application and the same after it will make an immense difference in the result, unless when merely local conditions are being treated, and often even in such circumstances if the best results are to be obtained. In cases of severe neurasthenia indeed I insist upon absolute rest for an hour or two before and after each application, permitting perfect freedom of action during the rest of the day.

Regarding the question of regulation of dose I usually begin with one of 200 milliampères only. In one or two cases I have started the treatment with a milliampèrage of 100 only, especially where the blood pressure was low and the patient liable to fainting turns. At each after-visit the effect of the previous sitting is ascertained. If exhaustion has followed it a smaller dose is given. If a sense of increased vitality or a comfortable weariness only is reported the original dose is given or a slightly increased one. If upon inquiry the patient reports a busy forenoon, or an expected active time after leaving, less current is administered than was formerly given.

When the treatment is applied daily therefore the time devoted to it is considerable, though the actual application is only of 15 minutes' duration. Where three applications a week are given I permit absolute freedom of action on the alternate days with reasonable avoidance of fatigue. All this may seem trifling and not worth mentioning, but it must not be forgotten that great results are only obtained by attention to trifles; and I have had such good results from auto-condensation when all else, including a prolonged holiday, has failed, that I am inclined to continue my practice. Let me here say that any holiday which can be obtained will be much more pleasant and more profitable after such treatment than before it.

Before leaving the subject of high frequency I should like to draw attention to the beneficial action of local applications, as distinguished from auto-condensation, in gastro-intestinal trouble. For example, the effluve over the abdomen for five or ten minutes before the application of auto-condensation will aid materially. So also will the same applied over the spine behind the arch of the aorta assist in cases of cardiac dilatation. In cases of eczema, when the health has improved and general irritability has been relieved by the auto-condensation, the local condition may remain practically uninfluenced till the vacuum electrode has been applied to the parts in sufficient strength to cause a sense of surface burning, when pruritus will cease and the previous rough red surface will disappear, but usually I find on the parts treated only. I wonder if any of you have observed how nervous a patient may become after about ten minutes of auto-condensation if placed on the couch shortly after a full meal. The best results, I find, are to be obtained shortly before a meal. I suspect that treatment is often withheld because the patient, usually a woman, is terrified of it. I never allow this to influence me where everything else has failed. The dread disappears, the patient's countenance changes, and a previously hopeless invalid is delighted to find herself well again.

I have absolutely failed in the treatment of diabetes and of confirmed obesity with high-frequency currents—failed, that is, in influencing the specific condition. At the same time, if obese people or diabetics are otherwise ill much benefit may be derived from auto-condensation properly applied. In simple glycosuria, on the other hand, the glucose can be made to disappear early in the treatment of the case, especially where it has been observed to come and go according to the condition of health of the patient. Again, in cases of generalised chronic rheumatic arthritis where there is obviously evidence of profound constitutional disturbance of long standing the results have been unsatisfactory. This is what might be expected. In these cases I have tried both high-frequency and ionic medication. If the case is made worse early in the treatment I am more hopeful, though it is difficult to get the patient to see it in that light. A possible reason for non-success may be that the length of the treatment should probably be proportioned to the duration of the disease, and this may prove too irksome to the patient. On the other hand, even a relatively short course of treatment may in time prove beneficial, but as the patient may in the meantime have been lost sight of it may be difficult to obtain knowledge of the final result. A case illustrating this came under my care some years ago. The lady had suffered for 20 years from progressive rheumatoid arthritis, her hands being practically useless. The report at the end of 12 applications of high frequency, local and general, was: "More freedom of movements of arms, but condition of hands and knees unchanged." Three months later the report sent to me was: "Ever so much better, stronger, less pain in joints, and less stiffness." About a year after she called to express her gratitude for the great improvement she then felt. Possibly, therefore, the failure in these cases is less real than at first might appear.

I have heard it said more than once that there are some patients whom electrical treatment in any form disagrees with. I am not prepared to accept such a statement without further details. In such cases I would be inclined to say, Why? when a possible explanation might be forthcoming. This reminds me of the case of a medical friend in the country. He had known of my success in cases of insomnia

when treated by faradisation of the head, and so he had it tried in his own case. The result was such as to make him vow that he would not attempt it a second time. Continuing, however, to suffer, and being so restless from nervous exhaustion that he could not remain at rest in bed, he sent for me in the hope that there might be something in what I had said after all. I took with me an excellent large sliding coil which I had had from Mr. Dean of London, and the current was no sooner applied to the head than the restless movements ceased, and he exclaimed, "Oh! how delightfully soothing." Evidently the first application had been from a small coil, giving therefore a coarse current; for it is not simply the quantity of faradic current but its quality which tells in such cases. Two milliampères can be borne with comfort from such a coil as Dean's, whereas less than one milliampère from an ordinary coil might irritate instead of soothe.

In cases of severe gastric dilatation my experience is that where there is no pyloric obstruction, congenital or acquired, success from electro-therapy may be looked for. Several cases treated by me had a successful result. I shall briefly relate one which came under my care in 1904. The lad had been off work for a year and the stomach had been washed out twice daily for weeks, but this lavage had to be given up on account of pain. Vomiting of sour and frothy material had occurred almost every day. His general condition was such that I decided to try electric treatment for one month only, when if no real improvement resulted he must have gastro-enterostomy performed. I gave him oro-epigastric applications of bi-polar treatment from the high-frequency solenoid, with a spark-gap of 1 mm. in series, which caused rhythmic muscular twitchings extending from the neck to the epigastrium. In a few weeks there was marked improvement. One year later the report given to me was: "Has been working for some months, can eat anything, is stout, and only knows he has a stomach if he gets cold." This is the only form of current which has been successful in my hands in gastric dilatation. One drawback to it is that there is some uncertainty as to the regularity and strength of the muscular movements. Possibly the static-induced current might be as efficient. It could be absolutely relied upon at any rate for regularity and force.

I am sorry to have to report numerous failures in cases of melancholia. Where, however, this is slight and has a definite cause in the patient's mind, especially if it is due to worry and brain fatigue and is accompanied with sleeplessness and general ill-health, and where the asthenia is cerebral more than psychic, success is almost certain. If, on the other hand, the melancholia is irrational, and especially if it is associated with delusions, failure is in my experience just as certain. The removal in such cases of the insomnia seems to have little, if any, influence on the melancholia; and this is notably so where the mental affection has resulted from the loss of a dearly loved husband or wife. In one such instance my advice to the widower to take a new partner in life resulted in a complete cure.

In cases of occupation neuritis I find it safer, if the occupation cannot be temporarily suspended, to give a guarded opinion as to the results of electro-therapy. This is only what might be expected since the cause remains in continued operation. Here I would warn against encouragement at the beginning of treatment of the expectations of nervous optimistic patients, where there may be even justifiable reasons for expecting success. Some necessary patience must be inculcated in these cases, and not too much promised at the start, otherwise possible success may become actual failure through early disappointment.

I have so recently given my experience of electro-therapy as applied to gynæcology that I shall be brief in my reference to this department. I should like to give a warning, however, regarding intra-uterine ionic, or ordinary pelvic galvanic, treatment in cases of disease of one or both ovaries. If the treatment is employed in such cases pain on the part of the patient should be considered as an indication either that too large a current is being employed or that the treatment is in that case unsuitable. I have had cause to regret applying it in such circumstances. In one case I had reason to suspect that intra-uterine high-frequency treatment was the cause of an acute attack of pelvic cellulitis. Since the mere passing of a uterine sound has been known to have such a result, the electric current may not have been accountable in this case; it is difficult indeed to see how it could have been so. I mention the case, however, as a warning.

I have spoken in the early part of my remarks on the importance of correct diagnosis as an aid to success in electro-therapy. Now, I know of no condition more liable to be overlooked, in the case of woman suffering from psychic neurasthenia, than unsuspected, often apparently unimportant if detected, irritable conditions of the vulva. In one case a young woman had been under my care, with only limited success, until I discovered that her mind had for years been unduly concentrated on an irritable condition of the vulva; and it was only when this had received attention that real improvement set in. In another the patient had repeatedly complained of distressing pelvic spasms, which she felt certain were largely the cause of her neurotic condition; but she omitted to mention this to me in her history of her illness. The lady doctor under whose care she had previously been had told her that the vulva was perfectly normal and that the sensations she described to her must be imaginary only. On my first examination of this patient I observed that the vaginal orifice was unduly red compared to the rest of the vulva. Under proper electric treatment this redness disappeared and so did the pelvic spasms, the general health becoming greatly improved as a result. In such cases I find a conical vacuum electrode passed into the vagina an almost certain remedy. In the case of a married lady now under my care long-continued treatment had failed to relieve her of a burning sensation in the vulva. On examination I discovered two minute septic ulcers in the groove at the junction of the hymen with the vulva, too trifling apparently in size to be the cause of much distress. She insisted, however, that this was the situation of the burning. These ulcers disappeared about a week after one application of the galvanic cautery. The burning sensation has greatly diminished; but since it has existed for many years its final disappearance cannot be expected immediately after the removal of the cause, seeing that the general health has been impaired from long years of physical distress and mental anxiety, normal conjugal life having been made impossible owing to the pain resulting. Auto-condensation combined with an ordinary tonic is, however, proving sufficient to restore her nerve tone. As a rule, these vulvar conditions can be detected only by examination in the dorsal position, with a full view of the opened vulva.

The employment of electricity as a sole remedy eliminates all other sources of possible success or possible failure, and makes for education in correct electro-therapy. This is of value in the early practice of the art, but, without doubt, once sufficient experience has been gained, the best results will be obtained by utilising to the full all the resources of the healing art—electrical, medicinal, dietetic, physical, psychic; and he is the most successful physician who has his quiver full of such weapons and who, in cases of difficulty, is fertile in resource.

Glasgow.

A CASE OF TROPH-NEUROTIC ANÆMIA; A SEQUEL.

BY T. WILSON PARRY, M.A., M.D. CANTAB.

AN account of the original attack of this case was published in THE LANCET of Nov. 6th, 1909. I now wish to record two relapses of this case of troph-neurotic anæmia which took place: the first, at an interval of about two months, which ended in a brilliant recovery, in which the blood almost touched its normal state, in response to the same treatment (intramuscular injections of an arylarsonate) which the patient underwent on the first occasion; and a second relapse, which followed about three months after the second recovery and which, for certain reasons, was not suspected till the condition of the blood had passed into an irrecoverable "pernicious" type.

To summarise the case briefly. A lady, 54 years of age, underwent a course of intramuscular injections of para-aminophenylarsonate of sodium from June 30th to August 9th, 1909, 100 grains of this arylarsonate being injected. During this period her hæmoglobin mounted from 65 to 93 per cent.; her red corpuscles from 3,500,000 per cubic millimetre to 4,800,000, and her white corpuscles from 2800 per cubic millimetre to 3250. The polymorphic cells were raised from 34 to 55 per cent., while the mononuclears dropped from 32 to 21 per cent., and the lymphocytes from 34 to 24 per cent. The colour index was 0·9 per cent. on both occasions.

A few poikilocytes, megalocytes, microcytes, and chromaphile granules were found at both examinations, but no normoblasts or megaloblasts could be discovered. The patient left for the seaside, with a nurse, on August 19th, and was progressing most satisfactorily in every way when the nurse left her on the following Sept. 2nd.

On Oct. 16th the patient returned home, with a temperature of 102° F., and I was called in to see her on the evening of the 19th, when her temperature was 101·2°. It appears she had been feeling poorly the past two or three weeks, had lost her appetite, and her legs had begun to ache as they had done at the commencement of her previous attack. For the past eight days she had been unable to walk comfortably on this account, and in the nights she had had profuse perspirations. During these latter days also she had retched a great deal, as had happened in her original attack, but vomited for the first time on Oct. 19th. Her conjunctivæ were again colourless, and she felt faint and giddy when she raised her head from the pillow, but this was not as marked as on the previous occasion. Her skin was of a pale lemon tint, but moist. I could not discover a hæmic murmur. Her pulse was 92, but not as soft as might have been expected; the sphygmomanometer gave 110 mm. Hg. I lost no time in commencing treatment, injecting 2 grains of soamin intramuscularly, morning and evening, on Oct. 20th. These doses I repeated both morning and evening on the 22nd and also on the morning of the 24th, but abstained from giving the injection in the evening of that day as vomiting and diarrhœa with abdominal pain set in and she had also certain ocular symptoms—namely, the feeling that her eyes were too big for their sockets, and when she looked at an object part of it was always replaced either by a dark blur or by an image which appeared "red like fire." This made me feel that this series of symptoms might mean a passing arsenical toxæmia. I accordingly waited a day and a half, and then began with half the previous doses, slowly increasing them to a maximum of 5 grains, which was given in two half doses, on alternate days and then gradually lessened till I finished up with 1 grain a day. The whole period for the injection of the full hundred grains covered 52 days, as compared with the 39 days on the previous occasion. Besides these injections I administered 10 grains of salol twice a day, half an hour before lunch and dinner, as an intestinal antiseptic, and the fresh juice expressed from a pound of raw beef-steak every day. The result was excellent, as will be seen in Table I., which shows the two examinations of the patient's blood made by Dr. Wyatt Wingrave, the first one on Oct. 20th, the day on which I began injecting the arylarsonate, and the second on Dec. 11th, the day after I had injected the hundredth grain.

TABLE I.

	Oct. 20th, 1909.	*Dec. 11th, 1909.*
Hæmoglobin	75 per cent.	95 per cent.
Red corpuscles	4,000,000	4,850,000
White ,,	3,500	4,500
Differential:		
(*a*) Red—		
Poikilocytes	A few.	A few.
Megalocytes	None.	—
Microcytes	A few.	A few.
Chromaphile granules	,,	,,
Normoblasts	None.	None.
Megaloblasts	,,	,,
(*b*) White—		
Polymorphic cells	50 per cent.	74 per cent.
Mononuclear ,,	5 ,,	1 ,,
Lymphocytes	45 ,,	25 ,,
Eosinophiles	0·5 ,,	1·05 ,,
Colour index	0·95 ,,	1·05 ,,
Platelets	Slightly below average.	Numerous (above average).
Bacteria	None.	None.

While the blood on Oct. 20th was not in as poor a condition as it was on June 30th, it can be seen at a glance from the above table that the examination on Dec. 11th demonstrated the fact that the arylarsonate injections had wrought wonders by bringing the blood almost up to its normal character, the only abnormalities being a slight deficiency in hæmoglobin and red corpuscles. The white corpuscles were now normal in number and the lymphocytes had now regained their correct ratio. Coincident with this treatment was a most marked clinical improvement. The patient, who was at first too ill to take note of anything, was got up on to a sofa by an open window on Nov. 1st, was taken out in a bath-chair on Nov. 23rd, and was able to take half-an-hour's walk on Dec. 12th. Hyperacusis, which had been present, disappeared by Nov. 15th, but the eye symptoms did not entirely depart till Nov. 22nd.

The patient went to Eastbourne with a nurse on Jan. 27th, 1910, looking exceedingly well, carrying a slight colour in a usually pale face, and her fingers also had a decidedly pink blush. On Feb. 9th the nurse wrote to say: "Mrs. —— is going on very nicely. Her appetite is very good and she is sleeping much better. She was weighed the day before leaving home and had gained 1 lb. 4 oz. in a fortnight. To-day we found she had just doubled that and had gained 2 lb. 8 oz. since we came here, her weight now being 10 st. 2 lb. 8 oz. without her clothes. In spite of this gain Mrs. —— is taking much more exercise, being out nearly three hours in the morning, and when fine going out in a bath-chair one and a half hours in the afternoon." On Feb. 28th I had further news, telling me that the patient "had been weighed on the 23rd and had gained 2 lb. all but 2 oz., so that is 3 lb. in the last fortnight. She gets very depressed at times, and the last few days fears she is becoming more anæmic; she says she has an exhausted feeling at times and feels a shortness of breath, that she does not enjoy her food so well, and feels slightly sick. I do not think her lips and eyelids are quite so red as when she came here, but apart from that she is taking her food well and sleeping better. I have let her go back this week to taking the meat juice three times in the 24 hours and the Levico water twice a day. She also takes a pint of milk and the meat juice between 7 P.M. dinner and 7 A.M. tea, so that she could not possibly take more than that." The nurse went on to say that she wished to call in a local medical practitioner, but unfortunately the patient, whose nerves were not of the strongest at the best of times, absolutely refused to have anyone called in, or even allow the nurse to communicate with me, as she felt she did not wish to consider herself ill enough to need a medical man. The consequence was that valuable time was lost. When at length she permitted the nurse to have medical help Mr. H. D. Farnell, who was summoned, recognised that a relapse was inevitable and communicated with me at once. I requested that a blood examination should be immediately made, and this was accordingly done by Dr. H. S. Gabbett, whose report will be found below in Column 1 of Table II., showing a sudden alarming deterioration in the condition of the blood since the previous examination on Dec. 11th, 1909.

TABLE II.

	March 12th, 1910.	*March 22nd, 1910*
Hæmoglobin	35 per cent.	—
Red corpuscles	1,750,000	1,600,000
White ,,	2,400	Not counted.
Differential.		
(*a*) Red—		
Poikilocytes	Numerous	—
Megalocytes	,,	—
Megaloblasts } Normoblasts }	[Presence of nucleated corpuscles. 10 seen while counting 100 leucocytes, most of them megaloblasts.]	
(*b*) White—		
Polymorphic cells	21 per cent.	25 per cent.
Mononuclear ,, (large)	4 ,,	24 ,,
Lymphocytes	74 ,,	51 ,,
Eosinophiles	1 ,,	—
Platelets	Greatly diminished.	—
Colour index	0·89	—

[If the normal corpuscular count is taken at 5,000,000 the index is 1.]

The result of this examination was most alarming, and one was painfully aware of the fact that it was more than probable that the patient had passed the line from which recovery was possible, as the state of "pernicious anæmia" was now undeniable. The suddenness of this deterioration was all the more amazing considering the degree of excellence the blood had attained on Dec. 11th, when its normal character was within an ace of being reached, and the short time (say about Feb. 20th) that any symptoms indicating a relapse had manifested themselves.

The patient arrived home on March 17th in a greatly

exhausted condition. Two grains of soamin were immediately injected on arrival, salol was administered by the mouth, and oxygen was given freely at intervals. The juice from a pound of raw beef was also given every 24 hours. Thinking that the double return of the hæmolysis might be caused by an intestinal toxæmia of microbic or chemical origin, I asked Sir Almroth Wright to see the case with me. He kindly met me in consultation on March 19th, and was of opinion that such was most probably the case and suggested that the fæces should be examined, the microbes isolated, and each one tested (1) against the patient's blood as to comparative powers of resistance against each of the different microbes discovered; and (2) against a normal "pool" of healthy men's blood. Sir Almroth Wright made an examination of the patient's blood (Table II., Column 2) which showed further deterioration in the red corpuscles in the space of a week. His report was: "Mrs. ——'s red blood corpuscles measured 1½ volumes in 10, instead of 5 volumes in 10. I found also a considerable number of macrocytes which point to a profound disorganisation of the blood-forming apparatus." Referring to the differential count of white blood corpuscles Sir Almroth Wright continues: "These are practically the same as Dr. Gabbett's figures, for the line one draws between large mononuclears and lymphocytes is often an extremely arbitrary line. There was a great reduction in the white blood corpuscles, but I did not count them. The blood picture is, as you see, almost as bad as it could be, and the prognosis is correspondingly bad." He suggested the administration of 15 grains of thymus tablets three times a day to increase the number of white blood corpuscles. The examination of the fæces was kindly done for me by Captain J. Matthews, R.A.M.C., whose report is as follows:—

I found five microbes on lactose bile-salt plates and in sugars they gave—

	Lactose.	Glucose.	Mannite.	Dulcite.	Cane sugar.
No. I.	+	+	+	+	−
,, II.	+	+	+	−	−
,, III.	+	+	+	+	+
,, IV.	+	+	+	+	*+
,, V.	+	+	+	+	−

* Slight gas only.

This makes—

Nos. I. and V. = Bacillus coli communis.
,, III. ,, IV. = Bacillus Friedländer.
No. II. = Bacillus acidi lactici of Hueppe.

The indices were:—

No. I.	0·71	No. IV.	0·79
,, II.	0·46	,, V.	0·90
,, III.	0·76		

I also plated on plain agar to see if there were any undue quantity of streptococci. There were, curiously enough, none, so I do not think streptococcus vaccine is indicated, and if we gave it we should not know what strain to give.

Captain Matthews prepared a vaccine from a culture of the B. acidi lactici of Hueppe, and I injected 2,500,000 at 10 P.M. on March 24th. The specimens of the blood sent Captain Matthews after this injection showed no change. On the evening of March 26th I injected 5,000,000, but it was all of no avail, as the patient sank rapidly, and passed away on the evening of March 30th.

Remarks.—There has been much talk of late concerning the arylarsonates. While one school affirm them to be of inestimable value, another, which has perchance not watched the effects of the drug carefully enough when slight indications presented themselves, so as to make them either reduce the dosage they were giving or to stop the drug entirely for a time, denounces these arylarsonates with a vigour that might give one the impression, had one had no experience with them, that they were both useless and dangerous and should never be employed. This case has taught me one thing, that had it not been for the arylarsonate I used, my patient would have rapidly sunk into a state of irrecoverable pernicious anæmia eight or nine months previously. Though the drug was not curative it was ameliorative, and the happy time spent by the patient each occasion the drug temporarily relieved her deplorable condition only proves to me how great is its true value. We unfortunately at present understand very little about the causes of these obscure anæmias. Had we been able to discover a cause and deal with it effectively it is quite possible that no relapse would have taken place. The picking up of the patient from an anæmic cachexia by the use of intramuscular injections of an arylarsonate I believe to be due to the splendid temporary tonic effect of this drug upon the blood-forming apparatus, possibly through the intervention of the nervous system. It must not be forgotten that nervous shock appeared to be the cause of this anæmia at the outset. I know no other drug that could have taken its place, producing the same result in the same time; so that even if by its use life cannot be saved but can be happily prolonged, that drug surely is of priceless value when used in suitable cases and when handled in a proper manner.

Crouch End Hill, N.

Reviews and Notices of Books.

Human Physiology. By Professor LUIGI LUCIANI, Director of the Physiological Institute of the Royal University of Rome. Translated by FRANCES A. WELBY, and edited by Dr. M. CAMIS, Institute of Physiology, University of Pisa. With a Preface by J. N. LANGLEY, F.R.S., Professor of Physiology in the University of Cambridge. In four volumes. Vol. I.: Circulation and Respiration. With 263 illustrations. London: Macmillan and Co., Limited. 1911. Pp. 592. Price 18*s.* net.

AFTER a short introduction on general physiology and such themes as materialism, neo-vitalism, energetic and psychical monism, pragmatic pluralism, and the general physiology of the cell, the author devotes three chapters, or about 80 pages, to living matter, its chemical and physical basis, its fundamental properties, and the conditions by which it is determined, in this way giving an all-round view of the general physiology of plants and animals. About 60 pages are devoted to the blood, including its formed constituents and blood plasma. In this chapter Cornstein must, we think, be intended for Cohnstein. A method of estimating fibrin-ferment, viz., that of Carbone, is not usually to be found in English text-books. The chapters on blood are very readable, comprehensive, and concise.

One chapter is practically devoted to the discovery of the circulation of the blood. Professor Langley, who has written a preface to the English translation, says: "It will be a shock to many English readers to find that Professor Luciani allots the discovery of the systemic circulation of the blood to his countryman, Cesalpinus"; while he is good enough to say that Harvey's little book of 72 pages is "unmistakably the masterpiece of a man of genius." It should be no shock; the pretence has often been made. That Harvey had forerunners who understood part of the story no one doubts. But Harvey's claim is justified over and over again, and will continue to be accepted.

The chapter on the mechanics of the heart and all that relates to cardiac physiology is one that Professor Luciani is peculiarly fitted to write, for under the guidance of Ludwig he began his classical researches on the beat of the excised heart. It would have been better if the translator had avoided Riolan's phrase, "peri-systole," as used by the author to indicate what we know as the pause—i.e., the resting period of the heart as a whole. The simplicity of the cardiac cycle is further complicated by the introduction of "pre-systole." We are at one with the author that it was Ceradini and not Krehl who introduced the present view regarding the opening and closing of the semilunar valves. Professor Luciani about 40 years ago revived the theory of "diastolic activity" of the heart, and he rejoices to think that Stefani has placed this theory on a firm experimental basis. The reader will find the matter fully set forth in the text. While certain parts of this chapter are very fully elaborated, the important question of the work of the heart is dealt with less fully than in most English text-books. About 50 pages are devoted to the blood stream, of which a concise summary

is given. The well-known apparatus of Marey for demonstrating the effect of intermittent flow of fluid through a rigid and an elastic tube is attributed to Mosso (Fig. 90), although its source is correctly stated in the text. For English readers it might have been well to introduce other forms of sphygmomanometers in addition to those mentioned in the text, and the same might be said of the sphygmograph, which the author asserts has proved "to be of very little diagnostic value." The figure of the plethysmograph of François-Franck (Fig. 115) should be replaced by a more modern form. Sixty pages are given to cardiac muscle and nerves, a subject that the author has largely made his own, and he treats it with a wealth of detail, entering fully into the history and evolution of the nature of the cardiac beat, and discusses in the light of Carlson's experiments on the heart of the king-crab (Limulus) the relative merits of the myogenic and neurogenic theories of the heart-beat. A similar question arises and is discussed in connexion with the *a.v.* bundle. About 30 pages devoted to the vascular muscles and nerves complete the story of the circulation.

The chemistry and physics of respiratory exchanges are clearly and explicitly set forth, including an excellent historical account of this subject. Full justice is done to the work of John Mayow (1640–79) and also to the grand contributions of Spallanzani (1729–99), so important in relation to "internal respiration." A description or figure of a simpler form of gas-pump than that of Pflüger would have been useful. Oxidases are mentioned in the introduction, but we did not find a reference to them in relation to nternal respiration. Under Mechanics of Respiration we failed to find any reference to the recent work of Keith. Sixty pages are devoted to the Nervous Control of Respiratory Rhythm, of which subject a very elaborate and well-illustrated account is given. Fifty pages are given to Lymph and the Interchanges between Blood and the Tissues. There is added in this chapter an account of the Ductless Glands. The indexes of subjects and of the authors cited are good, and to each chapter is added the modern literature of the subject with Recent English Literature collated by Dr. Camis of Pisa. The illustrations are good and well produced.

We offer a hearty welcome to the work of the veteran professor of physiology in Rome, one of the early Italian pupils of Ludwig and the successor of Moleschott. Few men have such an all-round knowledge of physiology as Luigi Luciani or so wide an outlook on physiological problems, both in their modern and in their historical aspects. Moreover, this treatise will introduce to English readers much of the work done by his compatriots, which is none too well known in either England or America. It is rather remarkable that the translation into English of such an all-round comprehensive work should have been so long delayed. All the more, therefore, do we congratulate Miss Welby on the successful manner in which she has performed her work. We wish this and the succeeding volumes every success in their English garb, and we hope that the other three volumes will soon make their appearance.

The Principles and Practice of Modern Otology. By J. F. BARNHILL, M.D., Professor of Otology, Indiana University, &c., and ERNEST DE W. WALES, B.S., M.D., Clinical Professor of Medicine in Indiana University, &c. With 314 original illustrations, many in colour. Second edition. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 598. Price 24*s.* net.

THE opening chapters of the book are devoted to the anatomy and physiology of the temporal bone and auditory apparatus. The third treats of the bacteriology of the ear, and in dealing with this matter a few important points may be worth referring to, especially the differences between the course of otites according to their exciting organisms. Though the pneumococcus is the more rapid in action, it shows a greater inclination to extension than the streptococcus, and at the same time it more often remains latent for a considerable period. The authors sum up their conclusions under 12 headings, which may be read with considerable advantage. The Causation of Ear Disease forms the title of the following chapter, and the next four chapters are devoted to diseases of the external ear. The principal point worthy of notice is the very full description given to its cutaneous disorders. The subsequent eight chapters are devoted to diseases of the external meatus.

Chapter XVII. deals with the methods of examination of the patient, and includes amongst its illustrations the photograph of a room fitted up for that purpose, and in Chapter XVIII. the authors give a very full report of the so-called universal acoumetric formula adopted at the Eighth Otological Congress at Budapest. The nineteenth chapter deals with the influence of nasal and naso-pharyngeal conditions upon the ear, while Chapters XX. to XXIII., inclusive, treat of acute conditions of the middle ear, preceding a chapter on acute mastoiditis and one describing the operations necessary for the treatment of acute suppurative conditions of the mastoid. Five chapters are devoted to chronic purulent otitis media, giving its effects on the mastoid bone and the operations necessary for the relief and cure of chronic suppurative conditions involving the middle ear and mastoid; the next eight chapters deal with the intracranial complications, and the following three with chronic non-suppurative otitis media. The remaining portion of the book is devoted to diseases of the perceptive portion of the hearing apparatus.

This is by far the best American work on otology that has been published for some time, and in their second edition the authors have been able to improve the text materially by the addition of much interesting and essential matter. We recommend this book with all confidence to those interested in otology.

Micro-organisms and Fermentation. By ALFRED JÖRGENSEN, Director of the Laboratory for the Physiology and Technology of Fermentation, Copenhagen. Translated by S. H. DAVIES, M.Sc. Fourth edition, completely revised. London: Charles Griffin and Co. 1911. Pp. 489. Price 15*s.* net.

THERE are probably few who are so well able to deal with the subject of micro-organisms considered in relation to fermentation as the author of this book. He has been associated with the fundamental work of Hansen in the application of micro-biological methods to the brewing industry, and he has himself enriched our knowledge of this and kindred industries by numerous researches of great practical and scientific interest. He has, in addition, been for many years the director of a technical laboratory in which large numbers of students have been trained. As might be expected, therefore, the book bears the impress of first-hand information, and has the interest which attaches to the record of original work. Even the historical portions of the subject gain an air of greater reality when dealt with by an actual worker in the field of research. The book has reached its fourth edition. It was first published in 1886, and has grown to its present size in the attempt to incorporate the numerous researches on the science of fermentation which have appeared since that date. This gradual growth is perhaps responsible for some slight confusion in the arrangement of the subject. For the book must not be considered merely as a technical handbook of the fermentation industries; it takes a wider view than this, though undoubtedly the micro-organisms, their

characters and modifications, are always seen from the standpoint of fermentation activity.

Opening with a review of the methods for the microscopical examination and cultivation of micro-organisms, the author passes on to consider the biological examination of air and water. In this part the work differs from the usual medical bacteriology in that the zymogenic properties are more important than the pathogenic, so that, for instance, in dealing with disinfection various antiseptics are regarded in the light of their suitability for the brewery rather than for the hospital. In the chapter on bacteria, which follows, it is the fermenting organisms with which the work is chiefly concerned, and bacteria are grouped according to their chemical action as lactic acid, acetic acid, and alcohol-forming bacteria without regard to morphology. Those causing beer and wine diseases are naturally regarded as important. The moulds are similarly treated.

As might be expected, about half the book is concerned with the yeasts. Probably to the general reader the most interesting part of the treatise is that which deals with the theories of fermentation and the very full account given of the yeast enzymes. Of more restricted and technical interest is the discussion of the morphology and physiology of various yeasts, but here also there are numerous interesting biological problems dealt with, such as the occurrence of variation, the causes producing it, and the stability of the varieties found. A description of a large number of yeasts is given, and the book ends with a chapter on the industrial application of pure yeast culture. A very full bibliography is furnished, and there is a good index.

The book is of good appearance and is well and accurately printed. It is an indispensable text-book for all who have to deal with the fermentation industries, and is of interest to all bacteriologists.

The Chemistry of Food and Nutrition. By HENRY C. SHERMAN, Ph.D., Professor in Columbia University. New York: The Macmillan Company. 1911. Pp. 357. Price 6*s.* 6*d.* net.

IN this work food is chiefly considered in its nutritive relations, while the detailed description of individual foods and the chemical and legal control of the food industry, we are told, may be treated in a future companion volume. The principles of the chemistry of food and nutrition with special reference to the food requirements of man are set out in the following order. First, the organic foodstuffs are dealt with, carbohydrates, fats, and proteins, much on the usual lines. Next follows an account of the general composition of foods (a very short one) and of the action of ferments, in which the author cites the well-known classification of enzymes, as given by Howell in his text-book. The description of the course of food through the digestive tract occupies about thirty pages. In dealing with the stomach "hormone" or "gastrin"—though this word is not mentioned—the author omits the name of Edkins. The X ray experiments of Cannon are largely drawn on, but there is no reference to the work of Hertz. The account of "the fate of the foodstuffs in metabolism" is excellent as well as suggestive. When dealing with the fuel value of food the work of Atwater is fully presented. Instead of using Rubner's heat-value results obtained on dogs—i.e., for carbohydrates 4·1, fats 9·3, and proteins 4·1 calories—the author uses for carbohydrates 4·1, fats 9·45, and proteins 4·35 calories per gramme as more accurate for man.

There is an interesting chapter on the conditions affecting the total food requirement. Protein metabolism is next fully discussed, and many experiments are quoted from standard authors, and in discussing Chittenden's results the author says "that to maintain nitrogen equilibrium with the full store of protein which is carried on an ordinary diet must necessarily call for a somewhat larger amount of protein than was used in Chittenden's experiments, probably in the neighbourhood of 75 grams of protein per man per day." Food habits and dietary standards are next discussed. Somewhat on the lines adopted by Bunge, nearly 30 pages are devoted to iron in the food and its functions of nutrition, and a similar account is given of inorganic foodstuffs and mineral metabolism—a subject all too frequently forgotten in text-books. A short chapter on Value and Economy of Foods—the prices being given in dollars—ends the text. An appendix of over 20 pages is filled with elaborate composition tables relating to foods.

The book is thoroughly readable, the subject-matter is dealt with in a clear, precise, and easily understood form, and seems to us to embody a trustworthy and not too lengthy account of the great principles of the chemistry of food and nutrition. At the end of each chapter a list of books of reference is given. There are a few misprints: for instance, on p. 95 Chauveau appears as Chaveau.

Vorlesungen über Infektion und Immunität. (*Lectures on Infection and Immunity.*) Von Dr. PAUL TH. MÜLLER, a.o. Professor der Hygiene an der Universität Graz. With 21 figures in the text. Third enlarged edition. Jena: Gustav Fischer. Pp. 451. Price, paper, 7 marks; bound, 8 marks.

THE additions constantly being made to our knowledge of the mechanisms of infection and immunity, as well as the complexity of much of the experimental work upon these subjects, render it a matter of considerable difficulty for anyone except an expert bacteriologist to keep abreast of the literature. A book presenting in readable and philosophical manner a review of the main facts concerning these matters, considered from the theoretical as well as from the practical standpoint, should therefore be of undoubted value. In the volume of lectures before us Professor Müller supplies such a book. The nature of infection and of the bodily responses is considered systematically, and the practical applications of the information obtained in relation to these problems are clearly stated. Sufficient details in regard to important experimental work are given to render it intelligible. Facts are clearly differentiated from theoretical considerations, and the discussion of any question that is still the subject of controversy is always critical and dispassionate. The arrangement of the material is also worthy of commendation. Each chapter deals fully with some special aspect of the problems of infection and immunity; authorities are quoted in the text; and in addition a bibliography of each special subject concerned is given.

After a brief introductory chapter the channels of infection are considered, then the nature of bacterial poisons and their distribution and localisation in the body are discussed. Questions of incubation and virulence and of the behaviour of the organisms in the infected areas are next dealt with. The nature and scope of phagocytosis and of the bactericidal and hæmolytic properties of the body fluids are analysed in considerable detail. An interesting chapter is devoted to a discussion of the nature and uses of the opsonins. The views of Sir Almroth Wright are clearly epitomised and critically examined. Professor Müller lays stress upon the difficulties of controlling inoculation by opsonic index determinations, and while admitting that Wright's method gives good results points out that these do not necessarily establish the correctness of his theory of immunity.

Several chapters are devoted to a full examination of active immunisation and the processes underlying it, in so

far as they are at present known. The nature of the various antibodies, the question of their specificity, their relation to variations of temperature, and their seats of origin are all discussed, and the evidence in regard to these problems is simply presented. The nature of the combination between antigens and their corresponding antibodies is next dealt with, and the quantitative relations of these combinations are discussed. A separate chapter is given to a consideration of Ehrlich's researches upon toxins and antitoxins, and the theoretical speculations of both Ehrlich and Arrhenius to explain the facts observed, are critically examined. Professor Müller quotes some observations of his own in this connexion, which he regards as being opposed to the views of Arrhenius. The characters of lysins, such as hæmolysins, bacteriolysins, and cytolysins, and of their corresponding antilysins, are next considered. The nature and mode of action of complement, the relations between it and the immune body, the characters of the receptors and of various antibodies, such as antilysins, anti-amboceptors, anti-complements, and complementoids, are reviewed and illustrated by references to the well-known diagrams of Ehrlich and Morgenroth. Agglutinins and precipitins are considered in similar detail, and then Ehrlich's side-chain theory and recent variants of it are presented and discussed.

The practical applications of the general principles studied are set forth in detail, together with statistical and other reports as to their value. The forms of antitoxic and antibacterial immunity are defined and differentiated, and the general principles underlying the cure and arrest of infective diseases are fully and clearly enunciated. Special chapters are devoted to anaphylaxis and to the practical results of protective inoculation and serum-therapy. The application of immunity reactions to purposes of diagnosis is discussed at considerable length, and all recent methods are included. Professor Müller's book is one we can thoroughly recommend for supplying in a form convenient for reference a general exposition of all the aspects of immunity and infection.

LIBRARY TABLE.

Outlines of Psychiatry. By WILLIAM A. WHITE, M.D., Superintendent, Government Hospital for the Insane, Washington, D.C. Third edition, revised and enlarged. New York: The Journal of Nervous and Mental Disease Publishing Company. 1911. Pp. 272. Price $2.50.—The student will find in this third edition of Professor White's Psychiatry a compendium of mental disease written from an essentially modernist standpoint. It is thoroughly readable and therefore enjoyable; the author's style is graced with picturesque expressions and at the same time pleasantly free from Americanisms. Chapter VII., on the Principles and Methods of Examination, occupies some 40 pages, and is altogether admirable from the standpoint both of theory and of practice. The adoption of the methods employed by the author cannot fail to be profitable. Mental disorders at best are often obscure enough, and no pains should be spared to throw light from any quarter on their phenomena, hence the necessity of a comprehensive scheme of examination. The book has been written especially for the student, and its excellent qualities will, we feel sure, be appreciated by him.

Science and the Criminal. By C. AINSWORTH MITCHELL. London: Sir Isaac Pitman and Son. 1911. Pp. 240. Price 6*s.*—In this volume some account is given of the manner in which certain scientific discoveries have been utilised to assist the cause of justice. The book is written in a popular manner, and is not in any way intended as a treatise on medical jurisprudence. The principles upon which scientific evidence is based are briefly described, and numerous illustrative cases add interest to the work. The systems of personal identification are discussed, and the uses of photography, anthropometry, and finger-prints are indicated. Numerous trials for poisoning are mentioned, and short accounts are given of the most notable. The identification of human blood and its differentiation from that of animals are described at some length, the precipitin test receiving due notice. The selection of the cases and the manner in which the whole book is written show good judgment, and all unnecessary sensationalism is carefully avoided.

Aids to Memory for First-Aid Students. By L. M. FRANK CHRISTIAN, M.B., C.M. Edin. Fourth edition. Additionally illustrated. London: St. John Ambulance Association. Stockport: Connell and Bailey. Pp. 48. Price 6*d.* net.—One of the best ways of memorising the contents of a book is to make a summary of the information contained in it, and the little book under notice is really a summarised arrangement of first-aid teaching, which can be used either in connexion with a recognised text-book or for class instruction. The notes are arranged under different headings in such a way that the student can easily find a methodical summary of instructions and rules relating to any division of his subject, and both those who have already undergone a course of training and those who are commencing the study of first aid will find the book a practical help; in the one case as a means of refreshing the memory, and in the other as a means of tabulating their knowledge. The illustrations depict actual conditions under which accidents happen. The pictures showing two supposed cases of rescue from contact with live wires are particularly noteworthy, as accidents from this cause are likely to increase with the more general use of electricity, and so far but little attention is paid to this subject in first-aid books.

Recollections of an Irish Doctor. By LOMBE ATTHILL, M.D. Dub. London: The Religious Tract Society. 1911. Pp. 238. Price 2*s.* 6*d.* net.—This is a pleasant, chatty collection of—as Dr. Atthill confesses in his preface—quite unimportant reminiscences. To use his own words, the book "merely narrates incidents in the ordinary life of an ordinary man," but the recollections of one who has lived under five monarchs—namely, George IV., William IV., Victoria, Edward VII., and George V.—are well worth reading by anyone who has not himself reached a great age, for they describe a mode of existence as remote from the present as the days of Elizabeth. Dr. Atthill's descriptions of his early life at home and at school, both in England and in Ireland, are extremely interesting, and although he did not have such thrilling experiences at his Irish school as those described by Trench in his "Realities of Irish Life," yet his account of the sanitary arrangements would cause a modern board of education to hold up its many hands in horror. This was about 1841; and lest we should be suspected of comparing Ireland unfavourably with England we hasten to add that at a much later date neither Winchester nor Eton was conspicuous for either good feeding or proper sanitary conditions. Dr. Atthill's account of the Dublin canal boats are by no means so favourable as those of Mrs. Major O'Dowd, as detailed in "Vanity Fair," but they were evidently a less uncomfortable mode of travelling than the coach, although extremely slow. The value of the book lies in the fact that it gives a modest picture of the life of a man who succeeded in his profession, brought healing and hope to thousands of sufferers, was an honest and true friend, and one who at the beginning of his career had a very uphill battle to fight against adverse circumstances. Apart from his own reminiscences, Dr. Atthill gives us a most interesting account of the foundation of the Rotunda Hospital, of which establishment he became Master in 1875, and into the management and organisation of which he introduced many valuable improvements.

Marriage and Parenthood: The Catholic Ideal. By the Rev. THOMAS J. GERRARD. New York: Joseph F. Wagner. 1911. Pp. 179.—This book—which we must assume is a fair representation of the Roman Catholic viewpoint on the subjects treated, since it bears the imprimatur of the Archbishop of New York—aims to promote and foster those ideals of the home life, the marital relationship, and the responsibility of parenthood, which other Christian communities also consider desirable, but for which the former upholds the indissoluble sacramental idea as the only effective basis. The author, while considering that reticence in regard to the most intimate, the most delicate, and the most sacred marriage relationships is a strong protection against temptation, yet admits that there is some knowledge of sexual subjects that all should have. His chief difficulty has been to decide what must be left out, and he says that what has been retained has been retained by advice of authority. In the practical part of the work it is to be noticed that great attention is paid to the teachings of science, particularly medical science, in such subjects as the choice of a mate, the question of conjugal restraint, the care of the pregnant and parturient woman, and particularly in the chapter on sexual instruction for the young. The time to keep silence and the time to speak is well denoted in the following words: "Knowledge should never be thrust into the child's mind before it is asked for. The state of innocence or ignorance, whichever we like to call it, is better kept untouched as long as possible. To put sexual images into a child's mind before due time is to start a tendency towards precocity and moral depravity. ..... There comes at length a time when the story of the stork and the doctor fails to satisfy. The dawn of a more intelligent interest begins to glimmer. It comes so innocently, so naïvely, that it is just as likely to express itself in the presence of the mother as in the presence of other and older children. That is the mother's opportunity. Then, and not until then, may she give the information."

The author points out that the knowledge sought for is primarily what is meant by being born, rather than how children are begotten. Difficult as the latter subject is, however, if the parents do not speak in due course children will get their first knowledge from undesirable sources and in an undesirable manner. But here, again, more restraint is to be observed than some at the present day are advocating. "There is no need whatever for a full and particular description of the sexual act. Much less is there need of diagrams and pictures of the human body." The lower forms of life are best to start instruction from, but the manner of giving information is more important than the matter. We are decidedly of opinion that the following statement by the author on one moot point puts the essential truth of the matter in a nutshell: "A proposal has been made, and in European countries partly put into practice, to enlighten young minds concerning the many extreme forms of sexual perversion. This instruction I hold to be decidedly pernicious. If the boy is warned against the more common sins he will at once recognise the less common and more heinous ones, if the temptation should arise." We also agree with the author that books dealing with the extreme forms of sexual perversion should not be read even by adults, unless their profession obliges them to deal with such cases.

Faith, Medicine, and the Mind. By CHARLES REINHARDT, M.D. London: The London Publicity Co., Limited. 1911. Pp. 231. Price 5*s.* net.—Readers of that clever collection of stories entitled "In a Glass Darkly" will remember Mr. Lefanu's character, Dr. Hesselius, and his disquisitions upon the inner eye and the methods by which this inner eye may be opened or shut. Dr. Reinhardt, in the book before us, formulates a theory much of the same kind in his explanation of faith healing, telepathy, hypnotism, and similar phenomena. His "psychic sphincter" and "diffused mind" are designed to give a plausible working theory in explanation of phenomena which are at present only very imperfectly understood, but the importance of which increases almost daily. In saying this we must not be taken to mean that we agree with all that Dr. Reinhardt says. Whatever may be the ultimate end of the inquiry into mental processes, conscious or subconscious, Dr. Reinhardt has written an interesting work, and he seems to be both a successful hypnotiser and to have met with extraordinarily sensitive subjects.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLV. Third Series, Vol. VI., Part III. April, 1911. London: Charles Griffin and Co. Annual subscription, 21*s.*, post-free.—The April issue of the *Journal of Anatomy and Physiology* possesses the distinction that an unusually large number of its constituent papers deal with subjects which are of direct utilitarian interest in practical medicine and surgery. The charge that research in human anatomy tends nowadays to be confined to clearing up obscure problems of development or morphology receives direct refutation in the work which appears in this volume, for it is amply demonstrated that the investigation of normal adult anatomy may always take new and useful channels hand in hand with the advances made in the study of its cognate sciences. The injection of alcohol into the divisions of the trigeminal nerve has been the motive for the reinvestigation of the anatomical relations of these trunks by Professor J. Symington. His paper upon the Relations of the Main Divisions of the Trifacial Nerve is a study of the sectional anatomy of the head, carried out in order to provide safe guides for the proper penetration of the nerve trunks by the hypodermic needle. Normal regional anatomy is also dealt with by Mr. F. G. Parsons in his paper on the Form of the Parotid Gland, which is the outcome of the study of the normal form and relations of the formalin-hardened gland. The same author also contributes an article on the Reconstruction of the Norma Facialis and Verticalis of the Skull. The aims of the method adopted are to establish a sufficiency of measurements from a series of fixed points of the skull in order to enable a graphic representation of the skull to be reconstructed and compared with reconstructions of other skulls similarly produced. The simple production of an outline of the most important features of the skull from numerical data is a desideratum, for to most people the study of such a reconstruction yields more information than the study of a mere table of figures; it is the choice of the arbitrary points of measurement that is the problem upon which general agreement is somewhat difficult to obtain. A paper of great interest to the pathologist is that of Professor A. C. Geddes, which deals with the changes undergone by the bones in acromegaly, a subject to which anatomists have devoted much attention of late. Professor Geddes's paper has the great merit that it describes the actual changes in the skeleton of a case whose clinical history has been recorded from the onset of the disease to its fatal termination—a period which covers 25 years. The clinical features of the case have been recorded in the *Edinburgh Medical Journal* by Dr. G. A. Gibson, and the soft tissues are also described in the same journal by Professor Geddes; we therefore possess in these publications a highly detailed account of the progress and ultimate pathological

changes of this remarkable disease. The periodic photographs of the patient, showing the progressive nature of the process, are as striking a series of pictures as could well be imagined; and the detailed reports on the skeleton, which is to find a permanent resting-place in the University of Edinburgh, constitute a record of the inroads of this strange pathological process that cannot fail to be of great value. The same author also contributes notes on Anomalies of the Subclavian Arteries. The subject of the Relation of the Brachial Plexus to the First Rib and to Cervical Ribs has two papers devoted to it. Dr. T. Wingate Todd deals more especially with cervical ribs of surgical importance, and Dr. F. Wood-Jones with a case of rudimentary first ribs studied in relation to the nerve trunks. This subject is one around which an extensive literature is growing, and it is also one of obvious importance to the clinician as well as the pure anatomist. Developmental problems are dealt with by Mr. J. E. S. Frazer, the Pharyngeal End of Rathke's Pouch; and by Dr. R. J. Gladstone, a Case in which the Right Ureter passed behind the Inferior Vena Cava: with a Short Note upon a Case in which the Left Renal Vein passed behind the Abdominal Aorta, and the bearing of these Abnormalities on the Development of the Abdominal Veins. Two papers deal with osteology: Dr. Douglas E. Derry discusses the significance of accessory articular facets between the sacrum and ilium; and Dr. W. L. H. Duckworth describes a skull dredged from the North Sea. A paper on the Lamina Terminalis is contributed by Dr. J. Cameron.

Journal of Laryngology, Rhinology, and Otology. January to June, 1911. London: Adlard and Son. Price £1 per annum.—The articles contained in these numbers which are of special interest are the following:—Partial Petromastoid Excavation with Preservation of the Tympanic Membrane and Ossicles, by Georges Mahu (Paris), in the January number. Reports for the Year 1909 from the Ear and Throat Department of the Royal Infirmary, Edinburgh: A Clinical and Bacteriological Study of 36 Cases of Mastoid Suppuration, including 10 Cases of Intracranial Complication, by Dr. A. Logan Turner and Dr. F. E. Reynolds (with 2 plates), in the February, March, and April numbers. Injuries of the Head and Nasal Diseases, by C. Ziem, in the March number. Report of a case of Thrombosis of the Lateral Sinus Exhibiting Symptoms of Cerebellar Abscess; Operation; Recovery, by Mr. J. Walker Wood; and Fibrolysin in Otology, by Mr. P. M. Yearsley, in the May issue. The June number is unusually full of original matter, an article by Dr. James Adam, entitled "A Note on Turbinal and Sinus Function," being well worthy of study. The *Journal* contains besides these a large number of reports of the various throat and ear societies, with a few abstracts from current literature. This journal has now been handed over to a body of laryngologists and otologists, some 60 in number, who have taken over its control under the management of Dr. P. Watson-Williams.

PRIZES FOR LIFE-SAVING APPARATUS.—In 1907 the Council of the Royal Society of Arts offered certain prizes for the best portable apparatus or appliance for enabling men to undertake rescue work in mines or other places where the air is noxious. These prizes were offered in connexion with the Fothergill Trust, and the Council has now awarded gold medals to Mr. H. A. Fleuss and to Mr. W. E. Garforth, and silver medals to Mr. Richard Jacobson and to the Mining Engineering Company. The report of the committee which investigated the claims of the various applicants for the prizes is printed in the issue of the *Journal of the Royal Society of Arts* for June 16th, and contains some interesting details with regard to the adjudication of the awards.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to June 26th:—

	£	s.	d.
Mr. W. Herring	1000	0	0
Messrs. Watts, Watts and Co.	2	0	0
St. John's, Paddington	200	0	0
"Anon."	200	0	0
Mr. Alex. Miller	200	0	0
Westminster Chapel	196	0	0
St. James's, Piccadilly	188	0	0
Mr. Heath Harrison	175	0	0
All Saints', Ennismore-gardens	165	0	0
City Temple	152	0	0
St. Andrew's, Frognal	130	0	0
Emmanuel, Wimbledon	127	0	0
Temple Church	113	0	0
Brixton Independent Church	111	0	0
St. Mary Boltons	105	0	0
Holy Trinity, Sydenham	104	0	0
Sir John Ramsden	100	0	0
Mr. W. D. Graham Menzies	100	0	0
Lieutenant-Colonel More Nisbett	100	0	0
Mrs. Richard Foster	100	0	0
St. Paul's Presbyterian Church, Westbourne-grove	100	0	0
St. James's, Paddington	98	0	0
St. Mark's, Reigate	97	0	0
St. Anne's, Wandsworth	83	0	0
St. Matthew's, Bayswater	79	0	0
St. Mary's, Shortlands	79	0	0
St. Peter's, Bayswater	77	0	0
Roehampton Parish Church	76	0	0
St. Philip's, Kensington	73	0	0
Eltham Churches	70	0	0
Beckenham Parish Church	66	0	0
Annunciation Church, Chislehurst	65	0	0
Christ Church, Beckenham	57	0	0
St. James's, West Hampstead	56	0	0
Christ Church, Newgate-street	55	0	0
Lemsford Parish Church	54	0	0
St. John's, Putney	53	0	0
Messrs. J. H. Vavasseur and Co., Limited	52	0	0
"J. C."	50	0	0
Mrs. C. E. Layton	50	0	0
Mr. G. P. Gooch	50	0	0
Mrs. Gooch	50	0	0
Mr. Norman McCorquodale	50	0	0
Mrs. Kenneth Clark	50	0	0
S. M. G. S.	50	0	0
Miss M. E. Druce	50	0	0
A. B. C.	50	0	0
Carmelite Church, Kensington	50	0	0
St. Paul's, Beckenham	49	0	0
Christ Church, Brondesbury	48	0	0
Chapel Royal, Savoy	47	0	0
St. Magnus's, Lower Thames-street	46	0	0
Chapel Royal, St. James's	44	0	0
Dulwich College Chapel	43	0	0
Farm-street Roman Catholic Church	43	0	0
West Wickham Parish Church	42	0	0
Crouch Hill Presbyterian Church	41	0	0
Clapham Parish Church	41	0	0
St. Augustine's, Highbury	40	0	0
Monken Hadley Parish Church	39	0	0
St. Matthias's, Earl's Court	39	0	0
St. Stephen's, Putney	38	0	0
Fulham Parish Church	36	0	0
Highgate Presbyterian Church	35	0	0
St. Alban's, Holborn	34	0	0
St. Mary's (Old Church), Stoke Newington	33	0	0
Westminster Cathedral	33	0	0
Wellington Barracks Chapel	33	0	0
Old Malden Parish Church	32	0	0
St. Peter's, Clapham	32	0	0
Betchworth Parish Church	32	0	0
Highgate Wesleyan Church	32	0	0
Ilford Parish Church and Missions	31	0	0
Emmanuel, West Hampstead	31	0	0
Christ Church, Victoria-street	30	0	0
Ferme Park Baptist Chapel	30	0	0
Mr. C. W. Drabble	30	0	0
Miss F. Martineau	30	0	0
Christ Church, East Greenwich	30	0	0
St. Mary's, Primrose Hill	29	0	0
St. John's, Sidcup	29	0	0
St. Peter's, Dulwich	28	0	0
St. Mary Magdalene's, Enfield	26	0	0
St. James's, Spanish-place	26	0	0
St. Luke's, Holloway	26	0	0
Mr. H. Dent Brocklehurst	25	0	0
Mr. Otto Beit	25	0	0
Mr. Harold Russell	25	0	0
Mr. Russell D. Walker	25	0	0
Mr. O. S. Fleischmann	25	0	0
Mrs. Christie Miller	25	0	0
Mr. Septimus Vaughan Morgan	25	0	0
Miss Gabriel	25	0	0
Kingswood Parish Church	25	0	0
Effra-road Unitarian Church	25	0	0
Chislehurst Wesleyan Church	25	0	0
St. Matthew's, West Kensington	25	0	0
St. Mary's, Graham-street	24	0	0
Mitcham Parish Church	24	0	0

THE LANCET.

LONDON: SATURDAY, JULY 1, 1911.

The National Insurance Bill.

As is sufficiently shown in that small proportion of the numerous communications which we have received for which we are able to find space in our columns, the general feeling of the medical profession is that the National Insurance Bill in its existing shape is absolutely unsatisfactory; and we have chronicled, as has been done regularly in the daily press, the growth of the feeling among the members of the British Medical Association that the presentation to the Government of what is practically an ultimatum is absolutely necessary in the present position of affairs. The British Medical Association is now inviting every registered medical practitioner to sign an undertaking in the following terms:—

I, the undersigned, hereby undertake that, in the event of the National Insurance Bill becoming law, I will not enter into any agreement for giving medical attendance and treatment to persons insured under the Bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association; and that I will enter into such agreement only through a Local Medical Committee representative of the medical profession in the district in which I practise, and will not enter into any individual or separate agreement with any approved society or other body for the treatment of such persons.

At the same time, the members of the medical profession are asked to attest the following memorial to Parliament:—

(*a*) That Parliament and the Government should postpone dealing with all questions of arrangements with medical practitioners for attendance and treatment of the insured, whether under the head of medical, maternity, or sanatorium benefits, until such terms shall have been arranged as shall afford reasonable assurance that competent medical practitioners will be induced, in the necessary numbers, to enter into those arrangements for treatment of the insured which the proper administration of such benefits would require.

(*b*) That arrangements made under the Bill for medical attendance and treatment of the insured should apply to those persons only whose average income from all sources does not exceed £2 per week.

(*c*) That the Bill should be so amended as to provide that the administration of medical and maternity benefits, like that of sanatorium benefit, shall be placed entirely in the hands of the Local Health Committees, and not of the approved societies.

(*d*) That the Bill should be so amended as to provide that each insured person entitled to medical benefit shall have free choice of doctor from among those medical practitioners practising in the district who are willing to enter into arrangements under the Bill.

(*e*) That the Bill should be so amended as to provide that an adequate number of medical practitioners who have had experience of general practice among the classes from which the insured will chiefly be drawn shall be included amongst the Insurance Commissioners and in the Central Advisory Committee; that the number of medical practitioners on the Local Health Committees should be increased to at least one-fourth of the whole number; and that provision should be made for the constitution, in the district of each Local Health Committee, of a Local Medical Committee, representative of all the registered medical practitioners practising in the district, which Local Medical Committee shall be consulted on all questions of arrangements with registered medical practitioners for attendance upon the insured.

The answer to the invitations of the Association have been very satisfactory.

There is undoubtedly the difficulty in the memorial that it appears to consider the contract system, under which such terrible, almost devastating, abuses have arisen in many parts of the country, necessary to national insurance against sickness, while there is a very large and important section of the medical profession who believe that it is not so necessary, and that the time when the whole of the relations of the medical profession to the public are undergoing rearrangement offers a remarkable opportunity for taking up the position that, in spite of its numerous conveniences, the contract system is inimical to the public interest. Those who think in this manner hold, as we do ourselves, that the conditions of medical practice are sufficiently flexible, and the provisions of the National Insurance Bill sufficiently elastic, to allow the system of payment for work done to be recognised by the Government and adopted by the medical profession, at any rate in such localities where the majority of medical men find it to favour the public interest as well as their own. We cannot see that there is here any immediate parting of the ways—all find the Bill at fault. The statesman-like proceedings in the counsels of the British Medical Association, which have resulted in obtaining a measure of unanimity in favour of the contract system, might well, we think, in future negotiations with the Government be so far extended as to permit of organisations under Local Health Committees whereby the system of payment for work done would be adequately recognised.

But for such a complete readjustment of affairs time will be wanted, just as time will be wanted to ascertain what terms, under any system of contract practice, will secure that a sufficient number of competent medical practitioners can be induced to enter into contracts. The determination which is understood to exist in the mind of the Government to press the Bill through without delay is therefore to all medical men's thinking most unfortunate. Unanimity of feeling in the medical profession, whether particular members are likely or not likely to be affected by the passing of the Bill, is very great in respect of the necessity that the professional relations between medicine and the public should not be turned upside down in a hurry, and the responsibility of the Government in the matter is becoming proportionately heavy. The General Medical Council, which for some years has been seriously uneasy at the increased and increasing shortage of candidates for medical qualification, has adopted a weighty report of a subcommittee of its body, which states that under the Bill the existing relations of the majority of the members of the medical profession to the State and to the public will be profoundly altered. The report also expressed the belief that changes, "whose full effect it is impossible to forecast, will take place in the sanitary and preventive departments of public health administration." We believe that the Council is right, and these serious matters have not been dealt with in the reply of the Chancellor to the Council's report.[1] To very many of our readers the question of the figure at which a capitation fee

[1] THE LANCET, June 3rd, p. 1540, and June 24th, p. 1723.

under the contract system should be placed, or the line under such a system at which a wage limit should be drawn, are matters of the greatest import. Heaven knows we do not minimize the urgency of the threats contained in the Bill against the material prosperity of many of our readers, but we suggest that the risk to which the medical profession will be exposed under the provisions of the Bill, so far as they are outlined, is even greater than is indicated by the apparent intention of the Government to underpay the medical practitioners coöperating in the National Insurance scheme. The risk is that the whole status of the profession of medicine may be hopelessly lowered if too large a proportion of its work is administered at the dictates of lay committees; for on this it will ensue that the supply of candidates for professional qualification will decline in quantity and perhaps quality. It would be a national disaster that this should occur at a time when enormous developments in scientific medicine make it absolutely necessary that the State, through and with the aid of the General Medical Council, should maintain a high standard of medical education, an arduous curriculum, and a drastic system of examinations. We feel that every section of the medical profession will agree in believing that a powerful case has been made out for urging the Government in the strongest and most unmistakable terms to give adequate time to the discussion of these great problems. The powerful and solid resistance to the medical provisions of the Bill, which has been organised along certain lines by the British Medical Association, forms one excellent reason why the Government should take leisure to reconsider the position of the medical profession under the Bill. The growing opposition to the Bill in Ireland forms another. Further reasons will be found in the just apprehension of the General Medical Council and of the great medical corporations that the whole status of medicine, as a scientific profession, may be degraded by a measure which should call for the closest coöperation of scientific medicine. Medical opposition to the Bill is unanimous, and the many and various grounds for the professional attitude require time for their exposition.

The Coronation Ceremonies.

THE Coronation is over and we need not dwell upon the incidents of a gorgeous ceremonial, which was at once impressive with its reminiscence of feudal ceremonies and yet more intimate than anything which we associate as a rule with modern sovereignty. The daily newspapers have done full justice to the scene within the Abbey, to the passage of the KING and QUEEN to and from its portals, and to their prolonged progress on the following day when they passed through Temple Bar, receiving the loyal greetings of the City at the hands of its Lord Mayor, to journey south of the river into streets not familiar with Royal pageants and among people unused to be the direct recipients of Royal smiles. We congratulate King GEORGE and Queen MARY most heartily upon the part which they played during two days, and upon the warmth of the loyal greeting which acclaimed them at every step. The people among whom they passed had assembled in serried lines upon the footways for hours before—some of them since dawn—and they were subjects to be proud of, not less enthusiastic, orderly, and courteous than those who occupied stands and costly seats in the windows of clubs and the façades of palaces. The police, with a caution which was ample, but which it is ungrateful to suggest was exaggerated, had secured safety from all those dangers which are so difficult to eliminate when huge crowds assemble. It has been suggested that the absence throughout of any excessive crushing was due to the apprehensions that had been created by the erection of so many unyielding barriers at different outlets to and from the route. This may have been so, but, as no one can possibly guess either what amount of crowding there might have been or what tragedies might have ensued had no steps been taken to deal with the risks, we find room here for nothing but praise of the police regulations. It is an event of the highest medical importance that such a ceremony as the Coronation, which has stirred the imagination of hundreds of thousands of persons, has taken place with the absolute minimum conceivable of injury, illness, or inconvenience.

The notable absence of accidents and of temporary or serious cases of illness among the spectators both during the Coronation procession and during the Royal progress was principally due to two main causes—firstly, to the precautions above referred to as having been taken by the police, and secondly to the weather. If we say that the latter was practically ideal for such an occasion we are liable to be met by the suggestion that bright sunshine, or at least some more or less protracted gleams of it, would have added considerably to the brilliancy of the spectacle both within and without Westminster Abbey; and if the climatic conditions which greeted Their Majesties on June 22nd and 23rd had resembled those of the preceding week, undoubtedly the pageant would have gained in beauty. But no medical man thinking over the circumstances in which these enormous concourses of persons came together could fail to be glad that such ideal June weather as marked most of May was not granted. For ideal weather for public spectacular display and ideal June weather are not identical. Those who from the safe eminence afforded by stands or windows watched the intervention of the members of the St. John Ambulance Association, and applauded the energy of Boy Scouts or the good-natured sympathy of policemen in the few cases of fainting which gave them occasion to display their willingness to assist, possibly came to the conclusion that the provision for sickness was fully equal to, if not in excess of, the necessities of the day. And so it was, as matters turned out. But if there had been hot sun such as there was during the last week of May and the opening days of June the tale might well have been a different one. The front rows of the crowd at most points of prominent interest were composed of men and women of all ages, many of whom had spent the night at or near the spot where they stood. All had been standing erect in expectancy for three or four hours before the event which they awaited took place and had been the objects of an appreciable degree of pressure from their neighbours. They may not have been without

food or drink, but they certainly had foregone their usual meals in exchange for snacks, taken in circumstances which would hardly be recommended by a medical man. They assuredly had good cause to be thankful that they were not compelled to hold their hard-won places in the brilliant sunshine of a summer morning. Not dozens but hundreds or thousands would have needed the assistance awaiting them if the heat which prevailed till recently had continued but a short time longer, and we need hardly add that troops, police, and all engaged in the exacting duties connected with the ceremonial would have suffered severely. As it was the long processions with protracted standing at attention varied by Royal salutes, were fairly trying for the soldiers who had marched early from their tents in the various parks, and those who watched them must have noted how glad they were to shift their positions and bend their heads when the order to "stand at ease" was followed by "stand easy."

It certainly was an excellent crowd, of a composition which reminded the observer of the changed conditions prevailing in all London throngs, whether they await the opening of pit doors or the passing of Royal processions. Is it the feminine influence which has made itself felt, or have the improved courtesy and forbearance of men of their own social class, and indeed of all classes, rendered it possible for women and young girls, gentle and refined, but at the same time self-reliant and independent, to pass long hours of waiting by night or day on kerbstones and pavements, and to retain their places secure and undisturbed? For anyone who remembers the crowds of a bygone generation, as when Queen VICTORIA celebrated her Jubilee in 1887, or upon minor and earlier occasions, the advance is remarkable. The crowd that witnessed the illuminations in the City and in Piccadilly on Thursday night was in places rather larger and more congested than was agreeable for those who found themselves involved in it, and at times the situation was rendered worse by the senseless rushes made by gangs of stupid lads. There was, however, the same absence of serious accidents that distinguished the proceedings by day, and the same gratifying fact that cases of over-indulgence in alcohol were extremely rare. At eight London police-courts a total of less than 300 charges described as arising out of the Coronation were heard, a large proportion of which were of drunkenness, the majority of the defendants in these being women. On such occasions excitement accounts for a good deal, and those of both sexes who behaved foolishly in their cups were certainly inconspicuous. Here, again, comparison with the "festive" occasions of 20 or more years ago shows a marked improvement in manners in the present generation.

Among those who had good reason to be thankful for the absence of intense heat upon the days of ceremonial were Their Majesties the KING and QUEEN. Theirs, be it remembered, were the leading parts, in fact and not merely in name, in the great ceremonial of their Coronation, parts which they had to sustain for long hours with the eyes of thousands at all times concentrated upon them, watching every gesture, noting eagerly every smile from the moment when they left Buckingham Palace early in the morning of their Coronation Day until their return in the afternoon. They had to support the strain, mental and physical, of a ceremony the solemnity and deep import of which would have rendered it a fatiguing ordeal even if it had not been preceded and followed by the drive at foot's pace amid the ceaseless din of loyal enthusiasm. Royal robes and crowns are not garments of choice by those who would be comfortable. To smile and bow incessantly while facing a restless sea of waving hats and pocket-handkerchiefs, amid ceaseless cheering through a space of more than two hours, is a task all would find hard. We congratulate Their Majesties upon their famous endurance of the physical strain of the Coronation ceremonies, and pray that the vigour of health so publicly demonstrated may be theirs for many long years.

Auto-inoculation in Pulmonary Tuberculosis.

THE doctrine of immunity has had far-reaching results in its applications to the treatment of infections, and has brought new light in regard to many obscure and difficult problems in the pathology of acute and chronic disease processes due to microbial and protozoal agencies. The study of the cellular and humoral responses to sublethal doses of bacteria or their toxins has revealed some of the details of the mechanism by which complex multicellular organisms are enabled to combat these disease-producing agents successfully. It is now generally recognised that these protective processes are capable of destroying the infecting organisms, of limiting their activities to local disturbances, or, if the organisms become generalised, of neutralising their effects and eventually producing a more or less permanent protection in some cases. On the other hand, if the organisms are extremely virulent, or if the protective processes are ineffectively activated, the infection progresses unchecked and death eventually occurs. It is obvious that the bacteria, either directly or through the agency of toxic products, bring into action the protective mechanisms, and that the effective character of these immunising responses is related to the dose and degree of virulence of the infecting organism. The phenomena of chemiotaxis, of phagocytosis, and of the development of the numerous antibodies which have been demonstrated in the blood and tissue fluids, all afford striking evidence of the mutual reactions which occur between the invading agent and the organism it attacks. In experimental infections in animals the infecting dose can be nicely graduated, and the virulence of the organism can be varied so that any condition can be produced, from a slight and strictly localised lesion with no general manifestations, to a condition of profound septicæmia, with generalisation of the bacteria and their products, marked intoxication, and certain death. It is difficult to avoid the conclusion that the similar variations seen in natural infections in man depend upon like conditions, and the theory of auto-inoculation, enunciated by Sir ALMROTH WRIGHT and his collaborators, is based upon these considerations and upon the interesting observations of Dr. J. FREEMAN in regard to the effects of massage upon localised bacterial infections, whereby it was shown that active and passive movements led to variations in the

opsonic index of the patient to the organism concerned These results have been confirmed and extended by numerous observers, so that it would appear as if any condition tending to alter the local vascular supply, such as massage, active and passive movements, the induction of hyperæmia by BIER'S method, and the administration of the X rays, may all lead to an increased discharge of bacteria or their products from the local lesion into the general blood stream, and therefore be said to produce auto-inoculation. According to Sir ALMROTH WRIGHT, the different effects of bacterial infections may be satisfactorily explained on this theory. He suggests that generalised infections are characterised by frequent or even continuous auto-inoculations, that strictly localised infections do not give rise to them at all, while that in a third class, in which the infection is more or less localised, occasional auto-inoculations occur depending upon variations in the local blood- and lymph-supply.

Treatment by means of bacterial vaccines is an attempt to utilise the information at present available in regard to the nature of immunity by the administration of graduated doses of bacterial products with a view to increasing the production of antibodies. The work of Sir ALMROTH WRIGHT has served to extend widely the use of vaccines and to afford an intelligible explanation of their action, while determinations of the opsonic index supply in some degree a means of measuring the immunising responses evoked. It is of interest to note that the determination of the opsonic index of the blood before and after massage of an infected area has shown that the immunising responses, induced by the auto-inoculations thus set up, are strictly comparable to those obtained by inoculation with bacterial vaccines prepared from the organism concerned, and that the results of such auto-inoculations may be beneficial or harmful according to their degree. It is not surprising, therefore, that attempts have been made to control auto-inoculations with a view to treatment—in other words, to utilise the patient's own bacterial products rather than to inject others obtained outside the body. We have received a copy of a thoughtful, suggestive, and original book by Dr. M. S. PATERSON,[1] in which this question is discussed in regard to the treatment of pulmonary tuberculosis by rest and graduated labour. It is of interest to note that Dr. PATERSON worked out his scheme of treatment before he was aware of the theory of auto-inoculation, and that his championship of this depends upon the explanation it affords of the results he has obtained. He describes how he conceived the idea of putting patients to do work involving the use of the upper limbs as well as the lower, supposing that this might possibly exert a more direct influence upon the lungs. He found that suitable patients could perform the hardest manual work with improvement in their general condition and weight, with a decrease in the quantity of sputum, and without the occurrence of hæmoptysis. He then observed that some patients who made no progress on lighter work showed marked improvement when put upon a harder grade, and also that some patients who had slightly over-exerted themselves and developed a small rise of temperature were subsequently none the worse; indeed, they were sometimes much better and were able to resume the same grade of work without ill-effect. It was also found in the case of certain patients, who over-exerted themselves considerably against advice, that headache, fever, loss of appetite, and sometimes pleurisy resulted. On learning from Dr. A. C. INMAN of the theory of auto-inoculation Dr. PATERSON applied it to these results, and after numerous determinations of the opsonic index of the blood of his patients by Dr. INMAN, they came to the conclusions that physical exercise induced auto-inoculations, and that systematic graduation of exercise regulated and controlled the extent of these auto-inoculations. Dr. PATERSON now gauges the progress made by his patients by a careful study of the temperature, the sputum, the patient's own feelings and appetite, and by the body-weight, and he gives as his aims of treatment the raising of the patient to his normal or highest known weight, and the elevation of his specific resisting power to such a degree that he can perform the hardest work without the risk of introducing a dose of bacterial products into the blood large enough to produce constitutional disturbance. The control of the auto-inoculations is therefore one of the great objects of the rational treatment of pulmonary tuberculosis, if the theory of auto-inoculation is accepted as the explanation of the phenomena of the disease and of the effects of rest and exercise. In febrile cases the auto-inoculations are excessive, and must be reduced by appropriate means.

Dr. PATERSON maintains that the most effective and most rapid method of securing this object is by what he has termed complete immobilisation, which consists in absolute rest in bed, the patient being treated like a case of enteric fever, except in the matter of diet. He is not allowed to move in bed, to read, to wash himself, to cut up his food, or to go to the lavatory, while every means is employed to lessen ineffective or unnecessary coughing. Interesting charts are shown in the book illustrating the effects of some of these movements upon the temperature. In afebrile and localised cases, and in cases in which the excessive auto-inoculations have been controlled the inducement of effective auto-inoculation by graduated exercise is the principal factor in treatment. With this object in view Dr. PATERSON has elaborated at the Brompton Hospital Sanatorium at Frimley, where his observations have been carried out, six grades of labour, with a preliminary period of walking exercise. He gives details of these grades and of the various guides for determining when a patient shall be changed from one grade to another. He pays particular attention to the temperature chart and believes that a temperature of 99° F. in a man or of 99·6° in a woman, accompanied by headache and loss of appetite, are indications of over-inoculation. These patients, after a few days of complete immobilisation, can often return to the grade which caused the over-inoculation without difficulty. Some patients have to pass through several grades before they obtain effective auto-inoculations, and this is the explanation offered of the observation previously mentioned—that some patients who make no progress on light work advance satisfactorily

[1] Auto-inoculation in Pulmonary Tuberculosis. By M. S. Paterson, M.B., B.S., M.R.C.S., L.R.C.P., Medical Superintendent at Brompton Hospital Sanatorium, Frimley, &c. London: James Nisbet and Co. 1911. Pp. 236.

when put upon a harder grade. Dr. PATERSON'S suggestions and his explanations of his results are of great interest and are worthy of careful consideration. The system of graduated labour as applied to the treatment of pulmonary tuberculosis has many obvious advantages: it tends to improve the physical condition of the patient, and to render him ready for work directly he is discharged with his disease arrested; moreover, it brings a more definite interest into the treatment than where the only exercises prescribed are graduated walks. The theory of auto-inoculation must, of course, be regarded only as a working hypothesis, but Dr. PATERSON'S interesting observations, although not a direct outcome of this theory, lend considerable support to it, and should serve to encourage the application of similar methods to other infections. We congratulate him upon his work.

Annotations.

"Ne quid nimis."

IMPROVEMENTS IN THE NAVAL MEDICAL SERVICE.

WE understand that the recommendations of the Committee on the Naval Medical Service, which has been presided over by Vice-Admiral Sir John Durnford, have been accepted by the authorities practically in their entirety. Under the new conditions of service the inducements to young medical men to join will be distinctly greater. There are increases of pay in certain directions, provision is made for acceleration of promotion in response to good and scientific work, and the facilities for post-graduate study are multiplied. The projected reforms affect also Queen Alexandra's Royal Naval Nursing Service, where the age of entry has been raised and the rates of pay increased, and the Sick Berth Staff, where alterations for the better have been made in training, and where special allowances will be granted for the discharge of exceptional duties. We desire to bring this information prominently before those of our readers who are connected with medical schools, for they will find in the report when it is issued many reasons for suggesting to young qualified men that the career of the naval medical officer contains excellent opportunities.

HOSPITAL SATURDAY FUND: A CORONATION APPEAL.

"IN view of the Coronation, and having regard to the fact that His Majesty has recently become Patron of the Hospital Saturday Fund, the time is felt to be opportune for a special appeal on behalf of the work which that Fund is doing amongst the hospitals of London." These opening words of a circular letter signed by Sir Savile Crossley and Mr. A. W. Davis, respectively chairman and secretary of the Fund, will probably meet with a good response. The great interest which His Majesty has always evinced in the hospitals is well known, and Coronation year could not be more fittingly commemorated by the charitable than by increased provision being made for the ever-growing needs of hospital work. The suggestion in the circular was that those who now contribute regularly to the Hospital Saturday Fund should double their weekly contributions in Coronation week as a special offering. We join Sir Savile Crossley and Mr. Davis in cordially commending the idea to contributors, and remind them that though Coronation week has passed the opportunity for generosity remains.

SCIENTIFIC RESEARCH FOR THE LOCAL GOVERNMENT BOARD.

THE President of the Local Government Board has authorised the following special researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease:—

1. A research into the causes of premature arterial degeneration in man, by Dr. F. W. Andrewes, pathologist to St. Bartholomew's Hospital.
2. An inquiry by Dr. J. H. Thursfield, of St. Bartholomew's Hospital, into the causes of death in measles.
3. A comparison by Professor Nuttall, F.R.S., Quick Professor of Biology at the University of Cambridge, of the number and kind of fleas found on rats.
4. A continuation by Dr. C. J. Lewis, of Birmingham University, of his investigation into the degree of prevalence and the characteristics of micro-organisms known as non-lactose fermenters in the alimentary canal of infants.
5. An investigation into the same subject by Dr. D. M. Alexander, of Liverpool University.
6. An inquiry by Dr. Graham Smith, of Cambridge University, into the incidence of non-lactose fermenters in flies in normal surroundings and in surroundings associated with epidemic diarrhœa.
7. A study by Dr. F. A. Bainbridge, of the Lister Institute, of the anaërobic bacteria in the alimentary canal of infants.
8. An investigation by Dr. Graham Smith into the possibility of pathogenic micro-organisms being taken up by the larva and subsequently distributed by the fly.

TUBERCULOUS BURSITIS.

TUBERCULOUS bursitis has not received much attention In the *Johns Hopkins Hospital Bulletin* for May Dr. Sydney M. Cone has described two interesting cases. A man, aged 22 years, was admitted into hospital complaining of pain in, and loss of function of, the right shoulder. He had always been strong and healthy, and there was no family history of tuberculosis. For about three years the right shoulder had been stiff on getting up in the morning, but this wore off after he had worked. For the past three months the shoulder had been constantly painful. The pain was increased on movement and prevented him from working. Examination showed fulness of the shoulder, especially over the coracoid process, and crepitus was felt in front of the joint. There was localised tenderness at the acromion process. He could not raise the arm or place it behind him because of the pain. Radiography showed rarefaction over the tuberosity of the humerus and slight roughening there as well as at the upper part of the glenoid fossa. Two milligrammes of tuberculin were injected subcutaneously and produced a reaction locally, focally, and generally. At the site of the injection there were swelling, tenderness, and redness. On the following day there was pain in the shoulder and the temperature rose to 100° F. On August 2nd, 1909, an incision was made from the acromion process outwards and downwards towards the deltoid insertion. The deltoid muscle was divided and a thick grey sac was exposed by blunt dissection. As there was difficulty in removing the sac in consequence of adhesions it was incised and about 400 facetted bodies shot out with a thin serous fluid. The sac was then removed without difficulty. An incision was made into the joint at the point of greatest adhesion near the tuberosity. The joint was found to be normal. The muscle was sutured, the wound was closed, and union took place by first intention. On Sept. 8th he was readmitted with a sinus in the line of incision. This closed under treatment, but others formed. On Jan. 24th, 1910, the apices of both lungs

were found to be tuberculous. He was sent to the country. He there improved much, and on Oct. 15th the sinuses had all closed and he was able to use his arm. The sac measured 11 by 6 by 3 centimetres. Its wall varied in thickness from 3 millimetres to 1½ centimetres and was grey with pinkish areas throughout; there were some nodular areas. Sections from many portions of the sac showed typical tuberculosis—dense fibrous tissue containing areas of small round cells, epithelial cells, giant cells, and caseation. In places there were single and conglomerate tubercles. The facetted bodies were found on microscopic examination to consist of granular loculated material staining with Weigert's fibrin stain and showing flakes, granules, and strands. Tubercle bacilli were found by the Ziehl-Neelsen stain. In the second case, a man, aged 24 years, came under observation on Feb. 18th, 1910. He had had a swelling over his left patella for several years which gave him no trouble. On Nov. 27th, 1909, he fell on the knee, and two days later it began to be painful. He was well developed and otherwise normal except for a tuberculous focus at the apex of the right lung. The left knee was tender, and larger and warmer than the right. Over the patella was an elastic lump of the size of a hickory nut, freely moveable under the skin. The tuberculin test was positive. The knee was opened and pinkish-yellow tags were removed. After closing the joint the prepatellar bursa, which formed a dense fibrous mass, was excised. The wounds were closed. An active tuberculous process developed in the joint and surrounding tissues, necessitating amputation. The prepatellar bursa formed a solid glistening white mass, which cut with difficulty and showed greyish softer areas here and there. Microscopically it showed islands of small round cells, epithelioid and giant cells, and caseous areas. The material removed from the joint showed active tuberculosis. These cases illustrate the two types of tuberculous bursæ which have been described in recent years by continental writers, one containing rice bodies and the other of a sclerosing form.

THROMBOSIS OF THE SUBCLAVIAN VEIN IN MEASLES.

IN the *Glasgow Medical Journal* for March Dr. A. J. Couper has reported a case of a very rare complication of measles—thrombosis of the subclavian vein. A well-nourished but flabby boy, aged 18 months, had measles. The heart sounds were soft and the pulse was of low tension. Mucous râles were heard over the lungs. The rash faded on the fifth day, but the temperature, previously normal, rose to 102° F. During the next three days it fell to normal. On the sixteenth day the temperature again rose to 102°, the pulse to 136, and the respirations to 44. On the following day the temperature was 97·6°, and the dorsum of the right hand was swollen, but the circulation in the part was good, and there was no pain. On the next day the swelling was much increased, involving the palm and extending up the wrist. The circulation in the fingers was sluggish, and the terminal phalanges were cyanosed. On the nineteenth day the whole of the right arm and the inner wall of the axilla were œdematous and very tense. The limb was cold and mottled with purple, and the ends of the fingers were black. Crepitant râles were heard at both bases posteriorly, but there was no dulness. On the twentieth day the swelling was still further increased, the limb and inner wall of the axilla had assumed a much deeper and more uniform colour, and there were numerous bullæ containing sero-sanguinolent fluid. The child died on the following day. At the necropsy the right arm was found swollen to about twice the size of the left. It was of a purple colour, which was most marked towards the distal extremity. The inner wall of the axilla was livid and swollen. On incision the subcutaneous tissue was found to be very œdematous. The axillary and subclavian veins were engorged. In the subclavian, about half an inch from its proximal end, was a firm adherent clot which extended for an inch backwards. Attempts to grow cultures from the clot failed. There were numerous enlarged axillary glands, but none were caseous or impinging on the vein. During life the swelling of the hand and the flabby heart caused thrombosis to be suspected. The involvement of the axilla indicated that the lesion was without the limb. As the subclavian is one of the valved veins it was thought that the clot was situated in it. No case of thrombosis of the subclavian vein in measles appears to have been previously recorded, but thrombosis of the renal veins and of the cerebral sinuses has been observed.

THE OSTEOLOGY OF THE BUSHMEN.

THERE has been added lately to the Museum of the Royal College of Surgeons of England an extensive collection of skeletons of Bushmen which will prove of great interest to those engaged in the study of the pigmy races of mankind. Along with other specimens added during the last 12 months these skeletons will be on exhibition in the council room of the College on Thursday and Friday, July 6th and 7th, from 10 A.M. to 5 P.M., and on Saturday, the 8th, from 10 A.M. to 1 P.M. This special exhibition is open, as is the Museum itself, to all medical men, and the services of the museum staff are freely at the disposal of visitors. The outstanding feature of the Bushmen, besides their small size and negroid traits, is the juvenile character of the adult skeletons. The Bushmen are in one sense adult boys. One of them shows a remarkable instance of toleration of injury. The upper teeth have ground the food against the alveolar border of the lower jaw until the inferior dental nerve has been freely exposed on the grinding surface. At the annual exhibition numerous additions to the pathological collection, to the series of malformations, to the series of human anatomy, and especially to prehistoric British races, will be on view.

BRACHIAL NEURITIS CAUSED BY PRESSURE OF FIRST RIB.

THE symptoms occasioned by the presence of a supernumerary or cervical rib are now well recognised, and there is excellent reason to believe the condition is more frequent than is commonly supposed. Many patients whose symptoms are diagnosed as acroparæsthesia are found on X-ray examination to be suffering from cervical rib. In any case where the practitioner is consulted because of paræsthesiæ or radiating pains in the arm and hand, particularly if they are referred to certain fingers, where the subjective symptoms are aggravated by muscular effort, such as by the repetition of any occupation movement or movements, and where there may be slight objective impairment of sensibility in the fingers and slight wasting of the thenar eminence or of the radial interossei, he should always have recourse to a radiographic examination, for such symptoms are highly characteristic of cervical rib. A greater rarity, but one, nevertheless, of considerable practical importance, has been described by Mr. Thomas Murphy, surgeon to St. Vincent's Hospital in Melbourne, in the *Australian Medical Journal* for October of last year. His case exemplifies the inadequacy of such a diagnosis as "brachial neuritis" in certain instances and the desirability of radiographic investigation in all. The patient was a young woman aged 28 who complained of numbness, pain, coldness, and tenderness of the left upper extremity, with loss of power in the forearm and hand. The symptoms were always worse after any

exertion involving the use of the arms. They had continued for no less than seven years, varying considerably from time to time. On examination the arm, forearm, and hand were found to be painful on pressure throughout their whole extent. There was no localisation to any particular nerve. The hand and wrist were somewhat swollen and bluish, but no œdema was present. The patient could not close her hand. There was impairment of sensibility in the hand and some wasting of the forearm. On pressure over the brachial plexus just behind the sterno-mastoid there was a point of resistance, with marked tenderness and pain shooting down the arm. The neck was skiagraphed as a cervical rib was suspected, but this apparently was not present. Operation was decided on because of the tenderness and resistance in the neck. When the brachial plexus was exposed it was found that the nerve trunks were stretched over the insertion of the scalenus muscle into the first rib. The scalenus was divided near its insertion, and a considerable portion of the rib resected. Within a few hours of the operation the patient herself remarked that the hand was already normal in colour, instead of being bluish. In a week's time voluntary power had returned in the hand and the pain had entirely disappeared. The cure was perfect and permanent; the patient can now indulge in various forms of muscular exertion, such as typewriting, without any pain whatever. Previously such movements were impossible. A second skiagram showed definitely that it was the first thoracic rib which had been the offending rib. The main symptoms in the case appear to have been due to the effect of the contracting scalenus on the stretched nerve trunks where they passed over the prominence made by the insertion of the muscle into the bone. The circumstances under which an apparently normal first rib can cause severe nerve symptoms are not made quite clear in the case, but the importance of complete investigation of chronic cases of this nature is impressed on us by a perusal of this interesting communication.

ZINC IONISATION IN LUPUS VULGARIS.

AS our columns show, ionisation, or the introduction of drugs into the system by electricity, is coming much more into vogue and gives satisfactory results in many conditions. In THE LANCET of April 22nd Dr. J. Curtis Webb reported encouraging results from the treatment of colitis and proctitis by ionisation of a solution of zinc sulphate introduced into the bowel. In a recent number of the *Liverpool Medico-Chirurgical Journal* Dr. G. G. Stopford-Taylor and Dr. R. W. MacKenna have reported good results from the treatment of lupus vulgaris by ionisation of the same salt. Some years ago Dr. Stopford-Taylor ingeniously suggested a plan whereby the electric current might be concentrated on lupus nodules. The horny layer of the epidermis offers considerable resistance to the passage of the current, and if there is any break or abrasion of the epidermis the current tends to concentrate there. Lupus nodules are covered with ill-developed epithelium which is less resistant to the action of liquor potassæ than the surrounding healthy skin. If, therefore, the part to be treated is briskly rubbed over with a pledget of cotton-wool soaked in liquor potassæ the lupus nodules are denuded of their epithelial covering and appear as moist gelatinous masses embedded in the skin. The part is then thoroughly wiped with dry absorbent wool, and two or three layers of lint or a thick pad of cotton-wool, soaked in a 2 per cent. solution of zinc chloride or a 10 per cent. solution of zinc sulphate, are applied. The pad should exactly cover the part. Over this is placed a zinc electrode, which is firmly pressed on and is attached to the positive pole of a battery. The indifferent electrode is a pad soaked in a solution of sodium or ammonium chloride, and is applied to some distant part of the body and connected with the negative pole. The current is obtained from the ordinary galvanic battery of 12 or 24 cells, from accumulators, or from the electric mains through a switch-board. If the current is obtained from an ordinary galvanic battery or accumulator, a rheostat to graduate the intensity of the current, and a milliampèremeter to measure it, are required. The current is switched on gradually, as any sudden alteration in strength is likely to cause painful shock. The intensity to be aimed at is from 2 to 3 milliampères for each square centimetre of surface, which most patients can bear. The duration of the sitting should be from 10 to 20 minutes, but may be less if the patient cannot bear so much. The current should be switched off gradually. On removing the pad every lupus nodule is found converted into a dry glazed whitish plug. Where the skin is not broken there is no evidence of the passage of the current. After removing the electrode a burning sensation is felt, and after an hour or two there are considerable swelling and redness of and around the part treated. From the surface denuded of epithelium serum slowly exudes and dries into a crust, which should not be disturbed. All that is necessary is to apply a calamine or lead lotion. In about a fortnight the crust falls and considerable improvement is seen. Some of the nodules have completely disappeared, others are smaller, and all are more or less superficial. The treatment should be repeated every fortnight until the disease has completely disappeared. The ultimate result is a smooth, pliable, and elastic scar. The curative effect is due to several factors: (1) Zinc ions are powerful germicides; (2) they have strong coagulating drying properties; (3) as a result of the œdema produced by the current, which may last for several days, serum laden with opsonins and phagocytes comes into contact with tubercle bacilli in the nodules. For lupus vulgaris, in which the nodules are discrete, Dr. Stopford-Taylor and Dr. MacKenna have found the treatment superior to any other in speed, efficacy, and scar. They obtained remarkable successes in extensive lupus which had been treated by X rays, Finsen light, or other methods with great improvement, but had persisted in the form of a few scattered nodules. Such nodules may at any time become foci of fresh extension and are best treated by zinc ionisation. The treatment may also be applied with great advantage to lupus of the mucous membrane of the lip or nose.

BRITISH DENTAL ASSOCIATION.

THE annual meeting of this association will be held on August 3rd, 4th, and 5th at the University of London, South Kensington, S.W. The Museum Committee requests for this occasion the loan of specimens illustrating affections (infections and growths) of the periodontal membrane. Specimens, dry or wet, should be accompanied, when possible, by histories, microscopical slides, culture tubes, drawings, photographs, and radiographs, and should bear the name and address of the owner, in which circumstances the committee will hold itself responsible for the care of any specimens lent, and will return the same immediately after the meeting. The following classification will probably be adopted:—

Sites and modes of periodontal infection or growth:—
(1) In membrane itself.
(2) By extension from:—
Gingival margin.
Tooth { Apical region. / Cemental region (trauma).
Bone.
Secondary changes in membrane, gum, tooth, bone, and in more remote parts—e.g., mucous membrane, lymphatic glands, antrum, &c.

These willing to lend specimens are requested either to communicate with, or forward, not later than July 27th, the specimens

to the honorary secretary of the Museum Committee, Mr. F. Coleman, 129, Harley-street, London, W.

THE election of two members of Council will take place at a meeting of Fellows of the Royal College of Surgeons of England to be held on July 6th. Mr. Dent and Mr. Makins, whose terms of office have expired, will submit themselves for re-election, and a third candidate, Mr. B. G. A. Moynihan of Leeds, is announced.

THE governors and medical staff of Guy's Hospital will hold a garden party at the hospital on Tuesday next, July 4th, at 3 P.M. The medals and prizes will be distributed to the students by the Right Hon. Alfred Lyttelton, K C , M.P. The laboratories, museums, college, the Henriette Raphael Nurses' Home, and wards will be open to inspection from 3 to 5.30 P.M., and music will be provided in the grounds.

RESEARCH DEFENCE SOCIETY.

THE annual general meeting of the Research Defence Society was held on June 19th in the library of the Royal College of Physicians of London.

There were present among others Lord Cromer (in the chair), the Duke of Wellington, Sir Thomas Barlow, Dr. F. W. Sandwith, the Hon. Sydney Holland, Lady Dorothy Nevill, Admiral Fremantle, Sir Charles Cuffe, Sir Hugh Bell, Colonel Gordon, Lord Claud Hamilton, Sir Henry Knollys, the Bishop of Oxford, Professor Leith, Sir Frederick Treves, Sir Frank Lascelles, Sir Frederick Macmillan, Mr. Anthony Hope Hawkins, Sir James Reid, Sir James Dewar, Mrs. Garrett Anderson, the Master of the Temple, and Sir David Ferrier.

Mr. HOLLAND read the report. He then referred to the increase in the numbers of the society and to the work of the past year. He went on to speak of the antivivisection shops lately opened in London, and said that it was shameful that these shops should exhibit stuffed animals, put in position for imaginary experiments, without saying that no operation was permitted on any animal in this country unless the animal was under the influence of an anæsthetic. He pointed out that these shops must have a very demoralising effect on the minds of children. He added that such exhibitions helped the work of the Research Defence Society, for the society took occasion to distribute truthful leaflets and pamphlets outside the shops. Mr. Holland went on to speak of the way in which the society had kept the public informed of the facts of the case. He quoted with special approval a paragraph from Major Marjoribanks's pamphlet, "Friends of Animals," published by the society.

Dr. SANDWITH presented the honorary treasurer's report.

Sir FREDERICK TREVES moved the adoption of the report. He said that the last 25 or 30 years had witnessed an advance which in magnitude and in value of results had never been approached since healing became an art. It had proved a revolution rather than an advance, for such had been the nature of this progress that the very foundations of pathology had been overturned, old faiths had been swept to the winds, the assumed limits of philosophical inquiry had long been passed, while the capabilities of treatment had been so wonderfully expanded as to be worthy of the chambers of health in the New Atlantis. This great advance had led to the saving of innumerable lives, to the relief of unmeasurable pain, and to the providing of a cure for a series of diseases which were but a short while since regarded as beyond hope. This progress had been in the main accomplished by experiments on animals. More than that, without such a method of research the present measure of success could never have been attained. These experiments had not only led to a widely extended knowledge of the general processes of disease, but they had had an immediate, wide, and beneficent effect upon practical medicine. Methods of diagnosis had been rendered simple and exact. Methods of treatment hitherto undreamed of had been made possible, and not only possible, but safe and successful. In the relief of the sick the empiricism of ancient days had been replaced by proved and standardised methods, while the hesitancy and speculation which often attended the employment of new remedies had given way to a confidence based upon precise research. So striking and valuable had been the results of that line of inquiry with which this society was directly concerned that it was unnecessary at the present day to give specific instances to enforce the fact; but it was hard to resist the temptation of referring to the incalculable services which experiments on animals had rendered in the investigation of sleeping sickness. It would be interesting to know what measures the opponents of research would advise if experiments upon animals were to be excluded from an inquiry so urgent and so essential to the saving of human life as this. In view of the sterling and profitable advance which had taken place in all departments of medicine it seemed strange that a society should be needed to defend the methods of research upon which that advance had so conspicuously depended. If there ever was an occasion when it could be claimed that the end had justified the means, it was surely such an occasion as was now under notice. The society had been able to enlighten the public mind on the subject of modern medicine, to make intelligible the difficulties that had been encountered, the elaborate means by which these difficulties had been overcome, and the priceless benefits to humanity which had resulted from the research involved. In conclusion Sir Frederick Treves quoted a parable from Edmund Burke: "Because half-a-dozen grasshoppers under a fern make the field ring with their importunate chink, whilst thousands of great cattle, reposing beneath the shadow of the British Oak, chew the cud and are silent, pray do not imagine that those who make the most noise are the only inhabitants of the field, or that they are other than the loud and troublesome insects of the hour."

Mrs. GARRETT ANDERSON seconded the adoption of the report. She referred to the amount of the society's work, as shown by 150,000 papers distributed during the year, and 90 addresses and lantern lectures given. She said that it was extraordinary that research should need to be defended; but this need was due to "uninstructed conscientiousness," that bane of the world's progress. Evil-disposed people were comparatively few, while the ignorant were the great majority. In this case, more than in most, the ignorant thought they knew. Mrs. Garrett Anderson referred in feeling terms to the death of Sir Rubert Boyce, who had done such great work for the advancement of the University of Liverpool, and for the advancement of the knowledge of tropical diseases.

Lord CROMER then delivered the Presidential address. He said: In considering the position which our society occupies to-day it should, I think, be borne in mind that in the process of what I may call educating the public mind, the scientists, confident in the benevolence of their intentions, and secure in the uprightness of their cause, allowed the antivivisectionists to get a long start of them—an advantage of which, naturally enough, they were not slow to avail themselves. It was only three years ago that we all fully perceived that a humanitarianism, laudable, indeed, in its primary object, but, as we think, misdirected in its methods of action, and ill-informed as regards the true facts of the case, was really threatening the advance of a science which is itself eminently humanitarian in a different, and, I firmly believe, a higher and more rational sense. The reports which we have heard read afford, however, abundant proof that no effort has been spared during the last three years to make up for lost time. The number of our subscribers has been steadily increasing. Progress has, in fact, been satisfactory, a result we owe in a great measure to the untiring perseverance of our indefatigable secretary, Mr. Stephen Paget, to our treasurer, Dr. Sandwith, of whose unselfish labours I cannot speak too highly, and to our able assistant secretary, Miss White. Upon the somewhat numerous occasions when I have publicly pleaded the cause of our society I have heretofore generally dwelt more especially upon the magnificent results which have so far been achieved by the experimental method in the direction of saving the lives and preserving the health both of human beings and of animals. I do not propose to dwell on that branch of the subject now. In this respect our case has, I venture to think, been proved up to the hilt. On the one hand, all this mass of evidence goes to confirm the conclusion which I give on the high authority of Lord Rayleigh, the President of the Royal Society, that "the main cause of the remarkable development of science in modern times has been the adoption of the experimental

method of investigating nature." On the other hand, abundant proof has been adduced, by Dr. Dudley Buxton and other high experts in anæsthesia, to show that the experiments on living animals are generally painless, and are always conducted in this country with a due regard to the paramount necessity of inflicting a minimum amount of suffering. I do not, therefore, propose to say anything more on this branch of the subject. I will, however, ask you to bear in mind that the objects which our society seeks to attain are twofold. We wish not only to point to the results which have been obtained by the experimental method, but also to make known the facts as to experiments on animals in this country, and the regulations under which they are conducted. That I consider a most important object. It is important because we have to recognise that there are a considerable number of distinguished men and women in this country who, it may readily be admitted, are animated by very high moral sentiments, and who, in more or less decisive tones, condemn our proceedings. They represent an aspect of the case which not only demands fair consideration, but which, in so far as the general principle involved is concerned, will, I feel assured, excite the active sympathy of all civilised human beings, whether scientists or those less versed in scientific mysteries. I have said that the general principle advocated by our opponents is of a nature to command our respect and sympathy. I cannot always say as much for the methods which are at times adopted to enforce the validity of that principle. Our opponents may, I think, be divided into several different categories. Let me first deal with that which, as I venture to think, cannot legitimately claim either respect or sympathy. I allude to those who distort facts, and who wilfully calumniate the whole of a noble profession with a view to holding its members up to the unmerited odium of an ill-informed public. What can one say of those who resort to such ignoble methods as these to prove their case? Only this, I think, that it would be beneath the dignity of the profession which they attack to defend itself from such infamous charges, and that the arguments of those who can stoop to the adoption of such methods are wholly undeserving of consideration. Now I pass to another category of opponents, who, although I think they adopt an ethical standard which is both irrational and practically unattainable, are, at the same time, much more deserving of respect than those to whom I have previously alluded. I take as an example of this category the evidence given before the Royal Commission by a very worthy clergyman, the Rev. Lionel Lewis. I say I respect Mr. Lewis because he has the courage of his opinions, and because those opinions are manifestly the outcome of honest and thoroughly sincere conviction. Mr. Lewis was asked the crucial question of whether, supposing a child of his to be suffering from diphtheria, he would allow antitoxin to be used, to which he replied in the negative. "Would you," he was then asked, "let the child die?" to which he replied, "I would." Between those who hold his views and the generality of mankind there is an ethical abyss which it is impossible to bridge over. I fear that little or nothing can be done to influence this category of opinion. And now I come to the third category of critics—for I will not call them opponents—whose views are much more deserving of attention than either of those which I have so far mentioned. I allude to those who admit the necessity of experiments on living animals, but who urge the necessity of obviating by all possible means the infliction of pain. We are happily able to meet these critics on common ground. But, in dealing with this branch of the subject, the question at once arises of the extent to which pain is now inflicted. I do not say it is altogether absent, but I honestly believe it is reduced to a minimum. I quite admit that all reasonable safeguards against even occasional abuses should be instituted; and if the Commissioners, whose report we have for so long been anxiously expecting, can suggest any unobjectionable safeguards in addition to those which already exist, the public may feel assured that the scientific world will give to their proposals fair and even sympathetic consideration. But it is essential—I quote the words of the Royal Society, uttered through the mouth of their spokesman, Lord Rayleigh—that these safeguards "should be so framed as not unnecessarily to interfere with the advancement of knowledge." Unnecessary restrictions would, Lord Rayleigh added, "not only cripple or arrest the growth in this country of an important branch of biological science, but in so doing would reduce the efficiency of both physician and surgeon to mitigate or cure disease." Considering the eminence of the gentlemen who compose the Commission, I cannot doubt that full weight will be given to this essential condition. In any case, our duty as a society is clear. It is to welcome any well-considered and innocuous change in the existing law, but to offer a strenuous opposition to any measures which would retard the advance of knowledge, and which would result in displacing this country from the position it ought to occupy in the van of scientific and beneficent progress.

After delivering his address Lord CROMER put the question to the meeting that the report be adopted, and this was done unanimously by a show of hands.

Sir FRANK LASCELLES proposed a vote of thanks to Lord Cromer for presiding. After alluding to the debt which the society owed to Lord Cromer for all the help and guidance given by him to its affairs, Sir Frank Lascelles went on to speak of the recent meeting of the Royal Society for the Prevention of Cruelty to Animals when a resolution was passed adverse to Lord Cromer's vice-presidency of that society. Sir Frank Lascelles said that he was very glad that Lord Cromer had taken a line directed towards the maintenance of that society's interests, and had upheld the principle that there was no opposition between the objects of the Research Defence Society and the objects of the Society for the Prevention of Cruelty to Animals.

The vote of thanks was seconded by Dr. SANDWITH, who referred to his personal knowledge of Lord Cromer's administration in Egypt.

The vote of thanks was carried by acclamation.

Lord CROMER acknowledging the vote of thanks, referred to some of the early experiences of the Egyptian Society for the Prevention of Cruelty to Animals. With regard to the recent action at the meeting of the Royal Society for the Prevention of Cruelty to Animals, Lord Cromer said that he thought it would be a mistake to attach much importance to the "little skirmish" between himself and Mr. Coleridge. It was what his friend sitting near him, Sir Reginald Talbot, would describe as an affair of outposts. His only wish had been to save that society from the clutches of its more extreme supporters, and he hoped that his action had produced that effect. Lord Cromer went on to speak of the proposal that there should be more inspection under the Act. He said that the Research Defence Society would give thorough and careful consideration to such a proposal; but it was necessary to ask, What kind of inspection? The society could not support any proposal for any such inspection as might hinder or harass our men of science in their work. He went on to speak of the proposal that dogs should be exempted from experiments altogether. We are all of us, he said, fond of dogs. At the same time he believed that this proposal was founded on sentiment, not on reason. He did not see that it was in any way worse for a dog to die under an anæsthetic in a physiological laboratory than to die in the lethal chamber at Battersea. He hated cruelty in any shape or form; but he held that cruelty to a fox, or a cock pheasant, or a partridge, or a hare, was just as objectionable as cruelty to a dog. There were certain experiments, very limited in number, for which it was necessary that a dog should be used; and these experiments were of very great value to mankind.

The meeting then terminated.

THE CORONATION MEDICAL HONOURS.

WE printed last week the names of those members of the medical profession who were announced at the moment of our going to press as the recipients of titular distinction among the Coronation honours. The medical profession has received adequate treatment, and we feel certain that the list of medical honours meets with the warm approval of our readers. We now publish the complete list. Many of those who are thus honoured are so distinguished, and their claims to recognition in this way are so obvious, that it is scarcely necessary to mention their achievements or to detail the prominent positions which they hold and have held. Five baronetcies are conferred upon members of our profession.

Mr. Henry T. Butlin, the distinguished President of the Royal College of Surgeons of England, is also President of

the British Medical Association and consulting surgeon to St. Bartholomew's Hospital. His public services to medicine have been great and varied. He has been dean of the Faculty of Medicine in the University of London and President of the Pathological and Laryngological Societies, while he has held many other offices in the Royal College of Surgeons and at his old hospital.

Dr. William Osler, Regius professor of medicine in the University of Oxford, is famous throughout two continents. He has been professor of medicine at the Johns Hopkins University, and at McGill University, Montreal, and he has enriched the literature of medicine with many works of high scientific and literary value.

Dr. J. F. Goodhart, consulting physician to Guy's Hospital and the Evelina Hospital for Children, is an eminent clinician whose name is a household word in general medicine as well as pædiatrics.

Sir Charles B. Ball, the President of the Royal Academy of Medicine in Ireland, is a distinguished member of a distinguished family. He is the representative on the General Medical Council of the University of Dublin, in which body he is Regius professor of surgery. He is surgeon to Sir Patrick Dun's Hospital and honorary surgeon to the King in Ireland.

Sir W. Thornley Stoker, consulting surgeon to the Richmond, Whitworth, and Hardwicke Hospitals, Dublin, is another eminent member of the Irish medical profession. He is a past-President of the Royal College of Surgeons and of the Royal Academy of Medicine in Ireland, and he is His Majesty's Inspector of Anatomy and Government Inspector under the Vivisection Act in that country.

Knighthoods have been bestowed upon Mr. A. A. Bowlby, C.M.G., surgeon to St. Bartholomew's Hospital and surgeon-in-ordinary to the King, who is a member of the Council of the Royal College of Surgeons of England, and served as senior surgeon in charge of the "Portland Hospital" in the South African war; upon Mr. R. Brayn, Home Office adviser in lunacy and late medical superintendent of Broadmoor Asylum; upon Dr. Alexander Dempsey, a well-known Belfast obstetric physician, who is physician and gynæcologist to the Mater Infirmorum Hospital; upon Dr. F. W. Hewitt, anæsthetist to the King and physician-anæsthetist to St. George's Hospital; upon the Hon. John McCall, Agent-General for Tasmania in London, and Member of the House of Assembly and of the Executive Council, who has done much useful public work and was President of the Central Board of Health; and upon Mr. F. C. Wallis, surgeon to Charing Cross Hospital.

The honour of K.C.B. has been conferred upon Inspector-General D. M. Shaw, who saw active service during the Crimea and the bombardment of Alexandria, and was in charge of several naval hospitals before his retirement; upon Inspector-General T. D. Gimlette, the head of the Royal Naval Hospital, Haslar; upon Surgeon-General W. L. Gubbins, C.B., Director-General of the Army Medical Service; upon Surgeon-General A. S. Reid, C.B., of the Indian Medical Service, lately principal medical officer of the Punjab Command; upon Major Ronald Ross, professor of tropical medicine in the University of Liverpool and the Liverpool School of Tropical Medicine, who was awarded the Nobel Prize for Medicine in 1902, and whose services in the campaign against malaria are world-famous; and upon Dr. B. A. Whitelegge, C.B., H.M. Chief Inspector of Factories and Workshops.

The distinction of K.C.M.G. has been conferred upon Dr. J. Rose Bradford, one of the two secretaries to the Royal Society, physician to University College Hospital, and among our foremost scientific physicians; and upon Dr. John Pringle, C.M.G., member of the Privy and Legislative Councils of Jamaica.

Dr. Bertrand Dawson, physician-extraordinary to the King and physician to the London Hospital, is appointed K.C.V.O.

The C.M.G. is conferred upon Dr. James W. Barrett, member of the council and lecturer of the University of Melbourne; Mr. Dugald Christie, head of the Mukden Medical Mission; and Dr. T. Zammit, Government Analyst, Malta. The following are appointed C.B.'s.: Inspector-General C. C. Godding, Inspector-General A. W. May, Inspector-General H. J. McC. Todd, and Fleet-Surgeon P. W. Bassett-Smith of the Royal Navy; Surgeon-General G. W. Robinson, principal medical officer of the Aldershot Command; Surgeon-General James G. MacNeece; Colonel C. F. Willis and Colonel T. Grainger, of the Indian Medical Service; Lieutenant-Colonel H. E. R. James, R.A.M.C. (retired), attached to the general staff at the War Office; Colonel G. S. Elliston, Administrative Medical Officer of the East Anglian Division; and Colonel P. B. Giles. Colonel J. R. Thomas, M.D., is appointed Honorary Physician, and Colonel Damer Harrisson, F.R.C.S. Edin., is appointed Honorary Surgeon to His Majesty for His Majesty's Territorial Force.

The C.V.O. has been conferred upon Fleet-Surgeon A. R. Bankart, Mr. Milsom Rees, and Mr. Mayo Robson, and the M.V.O. upon Mr. William Fairbank.

Dr. Michael Cox has been made an Irish Privy Councillor. The Hon. Sir Frederick Borden, Canadian Minister for Militia and Defence, has been made an Honorary Surgeon-General; and Sir James Reid, Bart., G.C.V.O., K.C.B., has been granted by His Majesty an augmentation of arms in consideration of services rendered to His late Majesty King Edward.

RECENT DEVELOPMENTS AT STRATHPEFFER SPA.

THERE are signs of a growing recognition that this country possesses health resorts offering natural facilities for the relief of disease which rival those presented at the well-known watering places abroad. A glance through our own columns for the past few years will disclose more than one example of a determined effort to make our home health resorts and their advantages better known to the public, and to bring them to a high level, not only in regard to treatment, but also to social attractions and domestic comforts. This is as it should be, and we are glad to recognise that the feeling is spreading that there is no reason why this country should be outstripped in this matter by foreign countries.

The British Isles possess every kind of natural mineral water which can be found elsewhere in the world. There are thermal waters, carbonated alkaline waters, saline purgative waters, brine baths, sulphur waters, iodo-waters, chalybeate waters, and so forth, the medicinal value of all of which in various ailments has been demonstrated in practice. The materials are plainly here, and if only a system of régime in regard to their medical application were adopted with the rigour and discipline commonly practised at continental health resorts a great stimulus would be given to the development of our home spas. It is a good omen that our railway authorities are beginning to see that the health resorts and spas upon the various lines can be made a source of revenue to their systems, and there is hope for the future of home balneological practice when our great railway organisations turn their attention seriously to the development of health stations along their routes. Fortunately, many of our lines bring within reach spots which are beautiful besides health-giving.

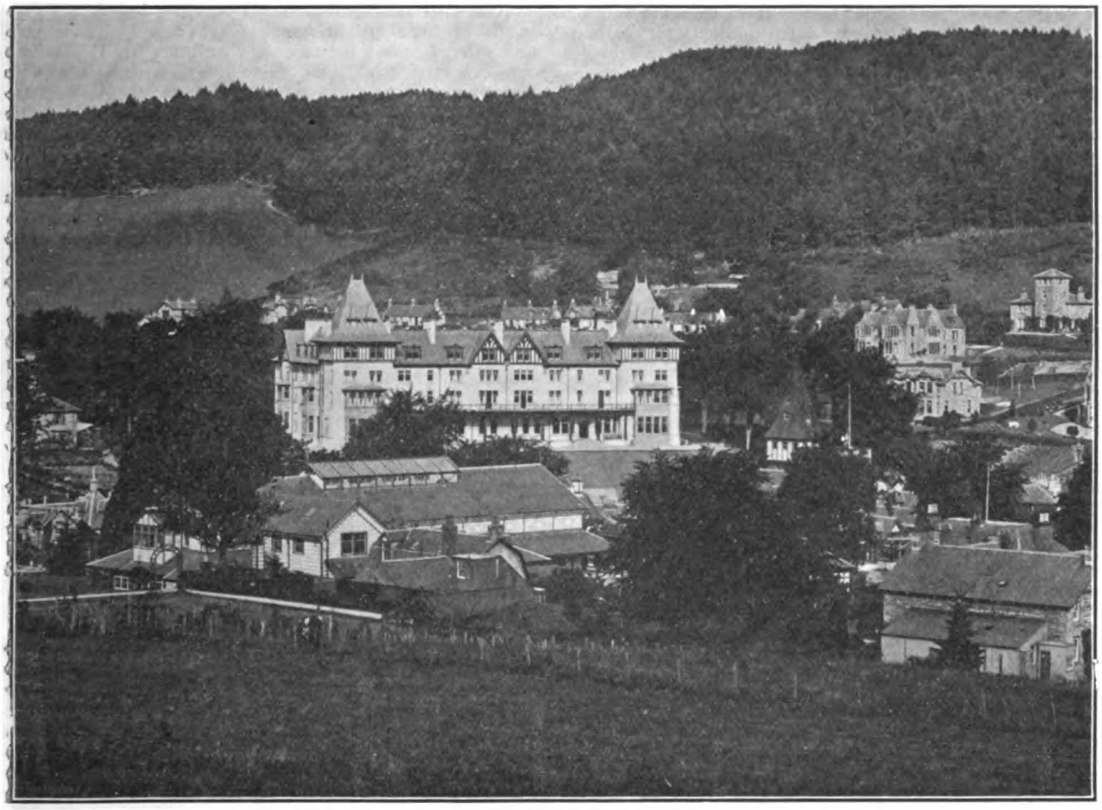
Nothing can exceed the beauty, for example, of the Highlands of Scotland, and these have long boasted a "spa" at Strathpeffer, which is situated in the very midst of some of the most romantic and picturesque scenery in North Britain. To the south-east approached from Perth is Aviemore, close by the Cairn Gorm mountains, then the gorgeous Killiecrankie pass, Kingussie, the heights of Dalwhinnie and Dalnaspidal. Mountain streams, lochs and glens form a continual panorama of great interest and beauty. To the west the Highland railway takes the traveller from Strathpeffer through country unsurpassed for the romance and magnificence of its scenery, until at length the sea is reached at the Kyle of Lochalsh, where the mountains of Skye and the islands of the Hebrides come in view to charm the eye and to impress the imagination with their wild grandeur. The enterprise of the railway in this part of the country has recently been manifested in its determination to provide Strathpeffer with a splendidly appointed hotel, a view of which is given in the accompanying illustration. The hotel is majestic in its proportions, and recalls the "hofs" of German health resorts. The justification for its existence is a sulphur spring, a health-giving environment, and a site endowed with great natural beauties.

The most important water at Strathpeffer is that drawn from the sulphur wells, of which there are three, but there

is also a chalybeate water of the type of the "Stahlbrunnen" on the continent. The strong sulphur water is quite redolent of sulphuretted hydrogen and contains in addition alkaline sulphides. Although strongly sulphuretted the water has a curiously cleansing effect upon the mouth owing to its antacid constituents. The reputation of Strathpeffer rests mainly upon successful results achieved in the treatment of chronic and subacute gout and rheumatism—especially the articular type—rheumatoid arthritis (in certain stages), and chronic rheumatism of muscles and nerves, such as lumbago and sciatica, but the waters have been used with benefit also in chronic skin diseases, disorders of digestion, urinary disorders, uterine troubles, and in functional nervous disorders.

The drinking of the waters, however, is only one form of administration; there is an admirable series of immersion baths, and peat baths and douche baths form a feature of the installation. Provision is made also for treatment by electric methods, by spray inhalations, and as auxiliaries may be mentioned the Nauheim bath and the Russian bath.

Apart from the abundant enjoyment afforded by the ever-varying landscape round Strathpeffer, the authorities at the spa have not been unmindful of the importance of providing recreation in other directions. There is an attractive golf course of 18 holes, situated at a level of 200 feet above the pump-room, which commands some delightful views of the valleys and hills of the surrounding country. Then there are bowling-greens, croquet-lawns, and a cricket-field, and a concert-hall in which during the season the orchestra discourses good music, while adjoining the hall are rooms for billiards, bagatelle, or card-playing, and a restaurant. The gardens are picturesquely laid out and well-stocked with flowers. There is a restful, peaceful air about the place which appeals especially to those who seek recuperation, and a respite from the wearing influences of worry and hustle.



Strathpeffer Spa, showing the new Highland Railway Hotel, Concert Room and Pump House.

The new hotel was opened on Tuesday, June 13th, a date which marks the opening of the Scottish Highlands season, and there were present at the joint invitation of the London and Northern-Western Railway Company, the Highland Railway Company, the North British Railway Company, and the Caledonian Railway Company, a large concourse of guests, including several medical men and representatives of the Scottish, provincial, and London press. The railway companies further extended a courteous invitation to a number of the latter gentlemen to a journey through the Western Highlands. The weather was ideal, and the trip through the magnificent scenery of mountain and loch was a source of veritable delight to all.

ASSOCIATION OF SCHOOL MEDICAL OFFICERS FOR SCOTLAND.—A general meeting of this association was held in Dunfermline on June 17th. At a business meeting Dr. Ernest T. Roberts, the President, was in the chair, 34 members were present, and 25 ladies and gentlemen were duly elected members of the association. A demonstration by students of the Physical Training College was given in the gymnasium. In the afternoon, through the courtesy of Dr. L. Cruikshank, chief medical officer Carnegie Dunfermline Trust, the members were enabled to visit the school clinic, the dental clinic, the baths, and the gymnasium, the various items of interest in these institutions being exhibited, and explained by the members of the staff. Dr. Cruikshank read a valuable paper on the Function and Management of the School Clinic. After discussion on the paper Dr. Roberts proposed a vote of thanks to Dr. Cruikshank for his paper and the trouble he had taken in arranging such an interesting and instructive programme, also thanking Dr. Ross, the chairman of the Carnegie Dunfermline Trust, for the hospitality extended to the members of the association. By the kindness of the Carnegie Dunfermline Trust the members of the association were entertained to lunch, and later to tea in the Pittencrieff Park.

MEDICINE IN SCANDINAVIA.

No. I.—NORWAY.

HUNDREDS of English medical men are acquainted with Norway as a land of holiday making, fishing, and shooting; but few have the time or opportunity to study the conditions under which their fellow practitioners in Norway live, and a short sketch of these conditions by one who has lived for many years in the country may not be without interest.

Medical Education in Norway.

The University of Christiania is the only educational centre which gives a medical training and degree. Here the would-be medical student must first pass the examination "Artium" before he can be registered as a student. This examination, which includes such general subjects as languages and mathematics, is usually taken at the age of 18 or 19. Having satisfied the examiners, the student commences the study of medicine, the average time taken to qualify being seven years. Three examinations are held. The first, which is commonly taken after three years' study, includes human anatomy and physiology, chemistry, botany, and zoology. This examination passed, the student begins hospital practice, and subsequently enters for the second examination, which includes pharmacology and toxicology, pathology and therapeutics, surgery, and the special diseases of the eye and the skin. The third examination, which is usually taken six months or a year later, includes clinical pathology and therapeutics, as well as surgical anatomy, gynæcology, obstetrics, hygiene, and medical jurisprudence. A curious regulation condemns the candidate who fails in the second part to enter for the first part *de novo*. Still worse is the fate of the unsuccessful candidate for the third part, who must take both the previous parts again. In practice, however, the unfit are weeded out by the first part, while less than 1 per cent. of the candidates for the other two parts fail. A powerful check is further put on the candidate entering for his final examinations too early by the division of the successful candidates into two classes. The occupants of Class I. form about one-half of the successful candidates. The general public seldom knows to which of the above classes any medical man belongs, but this division affects the seniority of a candidate for Government and other appointments.

Most of the text-books used are German or Scandinavian, but Cushny's "Pharmacology" and Withington's "History of Medicine" are recommended to the student by the Board of Medical Study, and several other English works are well known in Norway. As all, or nearly all, Norwegian medical men read German fluently, and most read either English or French, the demand for Norwegian text-books is strictly limited. There are three excellent medical periodicals, of which the monthly journal, *Norsk Magazin for Laegevidenskaben*, under the able editorship of Dr. E. Wang and his predecessors, has undoubtedly become the most interesting of all the Scandinavian medical journals.

Cost of Medical Training.—Number of Medical Men.

The cost of medical training, as of other forms of education, falls rather on the tax- and rate-payer than on the student, who, if his home is in Christiania, has little to provide beyond books and instruments. The low cost of education has naturally increased competition, and many of the most successful medical men are the sons of peasants. In the "eighties" the number of medical students was out of all proportion to the demand, the limitation of which has much reduced the supply of late years. To Norwegians who cannot find elbow-room at home there are, fortunately, excellent opportunities in the United States, where their fellow countrymen are numerous and prosperous, and where their reputation for professional skill is deservedly high. The number of Norwegians practising in the United States is now 64. At home there are 1161 medical men, whose ratio to the general population is as 1 to 2007. Of these, 437 are settled in the seven chief towns. There are 38 ladies practising, who form 3 per cent. of the total number of medical practitioners. Few of these have risen to any great distinction in the profession.

Organisation of the Medical Profession.

The Norwegian Medical Association (Den Norske Laegeforening) was founded in 1886, when the need for organisation had become urgent owing to overcrowding in the profession and the subsequent tendency on the part of the public to cut down prices. To-day the membership has risen to 1076. The discipline exercised by the executive is autocratic, but just, and largely owing to the vigorous personality of its secretary, Dr. Hansson, the association has become a most powerful organisation.

The Association has a wide and varied range of activity. In the capacity of a medical agency it is a reliable medium for the transfer of practices and the provision of assistants. It has long been an efficient check on quackery and the sale of secret remedies, the laws directed against which are most stringent. Thus an unqualified practitioner who ventures to treat tuberculosis or other infectious diseases is liable to a fine or imprisonment; and the importation and sale of secret remedies are prohibited. Unfortunately, the law still has flaws through which the adroit quack may successfully drive a coach and four. An instance of this occurred recently, when the vendor of an electric belt was tried for infringing the above laws. His acquittal (on a technical point of law) has been boldly exploited in subsequent advertisements.

A minor revolution has lately occurred in the South of Norway, where a district council decided to appoint two medical officers, whose services (with certain reservations) were to be at the disposal of every ratepayer free of charge. The question was thoroughly discussed by the Association at its general meeting in 1909, and the principle involved was provisionally accepted, though the terms demanded by the Association were far more advantageous to its members than those offered by the district council. However, the Association's terms were ultimately accepted, and the two medical men already practising in the district were appointed as its communal medical officers. The system has hitherto worked satisfactorily, but it is doubtful whether the ratepayers will countenance this expensive change in the long run.

Insurance against sickness and accidents is already compulsory upon certain classes, and the Government proposes to introduce a general scheme of compulsory insurance for all the poorer classes. The medical profession is, therefore, confronted with numerous problems, the solution of which is anxiously awaited by all concerned.

Government Appointments.

At present the majority of Government appointments consist of "distriktslaege embeder," corresponding to a certain degree to the appointments of the medical officers of health in England. These, of which there are 155, are much sought after, as the salary ranges, according to the district and the age of the officer, from £83 to £161. Private practice is permitted and a pension of about £111 awaits, as a rule, the medical officer, whose widow also, under certain conditions, receives a small allowance. The principal duties of these medical officers are the treatment and notification of infectious diseases, public vaccination, the treatment of paupers, and the supervision of the insane.

Post-graduate Study.—Scientific Contributions.

Post-graduate study is encouraged by the Government, which provides instruction and facilities for country practitioners to attend special classes in the larger centres. The desire to keep abreast of the times in medical knowledge is most noticeable, even in the older generation of practitioners, and I have witnessed an operation for appendicitis successfully performed, and the appendix removed, by a medical man whose knowledge of operative abdominal surgery was acquired after the age of 60!

Norwegian contributions to the science of medicine include Armaur Hansen's discovery of the bacillus leprae. His brother, Claus Hansen, has distinguished himself by his work on tuberculosis, and the rapid fall in the tuberculosis death-rate is largely due to the present tuberculosis laws, for which he is mainly responsible. Axel Holst's work on scurvy and beri-beri and Haaland's work on cancer are already well known in this country.

GOLF: BRISTOL MEDICALS *v.* BATH MEDICALS.—A match between the Bristol Medical Golfing Society and the Bath medicals was played at Failand, Bristol, on June 14th, and an enjoyable contest ended in favour of the home team by 5¾ points to 3¼.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 9159 births and 3781 deaths were registered during the week ending June 17th. Based on the results of the recent Census, the estimated population of these 77 towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this estimate, which had declined in the nine preceding weeks from 15·9 to 12 2 per 1000, was again equal to 12·2 in the week under notice. During the first 11 weeks of the current quarter the annual rate in these towns averaged 14·3 per 1000; in London during the same period the mean annual death-rate did not exceed 13·6 per 1000. The annual recorded death-rates during the week in the 77 towns ranged from 3·0 in Handsworth, 4·3 in Hornsey, 5·4 in Burton-on-Trent, and 5·7 in Barrow-in-Furness, to 17·2 in Sunderland, 18·0 in Stoke-on-Trent, 19·0 in Stockton-on-Tees, and 19·1 in West Bromwich. The 3781 deaths from all causes in the 77 towns during the week only exceeded by 7 the low number returned in the previous week, and included 364 which were referred to the principal epidemic diseases, showing a further slight increase upon the numbers in the two preceding weeks. Of these 364 deaths, 124 resulted from measles, 88 from infantile diarrhœa, 69 from whooping-cough, 47 from diphtheria, 28 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual rate from these epidemic diseases in the 77 towns, which had been equal to 1·0 and 1·1 per 1000 in the two previous weeks, further rose to 1·2. The fatal cases of measles in the 77 towns, which had been 153, 119, and 125 in the three preceding weeks, were 124 in the week under notice; the highest annual death-rates from this disease recorded during the week in these towns were 1·9 per 1000 in Stockport, South Shields, and Newport (Mon.), and 2·2 in Smethwick. The deaths of infants under two years of age attributed to diarrhœa in these towns further rose to 88. The fatal cases of whooping-cough, which had been 76 and 81 in the two previous weeks, declined to 69, and were fewer than in any week since January last; they were proportionally most numerous in Newcastle-on-Tyne and Warrington. The deaths referred to diphtheria, which had been 26 and 37 in the two preceding weeks, further rose to 47; they included 17 in London and its suburban districts, 6 in Stoke-on-Trent, and 3 in Cardiff. The 28 fatal cases of scarlet fever also showed a considerable increase upon recent weekly numbers; 4 were recorded in Stoke-on-Trent, 3 each in London and Manchester, and 2 each in Liverpool, Southampton, and Hull. Of the 8 deaths referred to enteric fever, 2 occurred in Portsmouth and 2 in Devonport. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the nine preceding weeks from 982 to 1141, had further risen to 1207 at the end of the week under notice; 190 new cases of this disease were admitted to these hospitals during this week, against 185 and 152 in the two previous weeks. These hospitals also contained 825 cases of diphtheria, 480 of measles, 273 of whooping-cough, 30 of enteric fever, and 4 of small-pox on June 17th. The 975 deaths from all causes in London showed a further decline from the low numbers in recent weeks, and included 139 which were referred to diseases of the respiratory system, against 134 and 141 in the two preceding weeks; only 3 deaths were directly referred to influenza. The deaths attributed to different forms of violence in the 77 towns, which had been 177, 175, and 172 in the three preceding weeks, further declined to 162 in the week under notice, and 346 inquest cases were registered. The causes of 37, or 1·0 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death recorded during the week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 51 other smaller towns; the 37 uncertified causes of death in the 77 towns during the week included 6 in Liverpool, 5 in Birmingham, and 4 both in Sunderland and in Gateshead.

In the 77 largest English towns 6830 births and 3487 deaths were registered during the week ending June 24th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had declined in the ten preceding weeks from 16 8 to 12·2 per 1000, further fell to 11·3 in the week under notice. During the first 12 weeks of the second quarter of this year the annual death-rate in these towns averaged 14·0 per 1000; in London during the same period the mean annual death-rate did not exceed 13·4 per 1000. The recorded annual death-rates during last week in the 77 towns ranged from 5·1 in King's Norton, 5·5 in Hornsey, 5·7 in Tottenham, and 6·8 in Walsall; to 15·7 in Liverpool, 15·8 in Wigan, and 17·0 in Stockton-on-Tees. The 3487 deaths from all causes in the 77 towns last week showed a decline of 293 from the number in the previous week, probably caused in some measure to delay in registration owing to the Coronation celebration, and included 273 which were referred to the principal epidemic diseases, against 341 and 364 in the two preceding weeks. Of these 273 deaths, 86 resulted from infantile diarrhœa, 81 from measles, 63 from whooping-cough, 21 from diphtheria, 14 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases, which had been equal to 1·1 and 1·2 per 1000 in the two previous weeks, declined last week to 0·9. The fatal cases of measles in the 77 towns, which had been 119, 125, and 124 in the three preceding weeks, fell to 81 last week, and were fewer than in any previous week of this year; the highest annual death-rates from this disease recorded in these towns last week were 1·4 in South Shields and 1·9 in Great Yarmouth. The 86 deaths attributed to infantile diarrhœa, which had increased in the five preceding weeks from 52 to 88, were 86 last week, including 21 in London and its suburban districts, 12 in Liverpool, and 6 both in Manchester and in Birmingham. The fatal cases of whooping-cough, which had been 81 and 69 in the two previous weeks, were 63 last week, including 15 in London and its suburban districts, and 5 both in Liverpool and in Leeds. The 21 deaths referred to diphtheria were fewer by 26 than the number in the previous week; 7 occurred in London and its suburban districts, and 2 each in Liverpool and in Bradford. Six of the 14 fatal cases of scarlet fever (against 28 in the previous week) were of London residents. The 8 deaths referred to enteric fever corresponded with the number in the previous week, and included 3 in London and 2 in Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the ten preceding weeks from 982 to 1207, had further risen to 1223 at the end of last week; 159 new cases of this disease were admitted to these hospitals during the week under notice, against 152 and 190 in the two previous weeks. These hospitals also contained 808 cases of diphtheria, 467 of measles, 284 of whooping-cough, 32 of enteric fever, and 4 of small-pox. The 921 deaths from all causes in London showed a further decline from the low numbers in recent weeks, and included 111 which were referred to diseases of the respiratory system, against 141 and 139 in the two preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had declined from 177 to 162 in the four preceding weeks, further fell to 136 last week; 279 inquest cases were registered. The causes of 27, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in London and its suburban districts, in Sheffield, Leeds, Bristol, Bradford, Nottingham, Stoke-on-Trent, and in 45 other smaller towns; the 27 uncertified causes of death in the 77 towns last week included 6 in Liverpool, 3 in Birmingham, and 2 each in Bootle, Rochdale, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons (based on the recent Census enumeration), 908 births and 466 deaths were registered during the week ending June 17th. The annual rate of mortality in these towns, which had been equal to 17·7, 16·9, and 14·9 per 1000 in the three preceding weeks, further declined to 14·2 in the week under notice. During the first 11 weeks of the current quarter the annual rate in these towns averaged 17 3 per 1000

of the revised estimate of their population, and exceeded by 3·0 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 11·5 and 13·5 in Aberdeen and Edinburgh, to 15·2 in Greenock, and 17·9 in Paisley. The 466 deaths during the week from all causes in the eight towns showed a further decrease of 23 from the numbers in recent weeks, and included 64 which were referred to the principal epidemic diseases, against 67 and 56 in the two previous weeks; of these 64 deaths, 27 resulted from whooping-cough, 15 from diarrhœa, 14 from measles, 5 from diphtheria, and 3 from scarlet fever, but not one either from small-pox or enteric fever. The mean annual death-rate from these epidemic diseases in the eight towns during the week was equal to 2·0 per 1000, exceeding by 0·8 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had been 43 and 32 in the two previous weeks, further declined to 27, of which 12 occurred in Glasgow, 5 in Edinburgh, 3 in Greenock, and 2 each in Dundee, Paisley, and Perth. The 15 deaths attributed to diarrhœa showed a marked increase upon recent weekly numbers, 12 being of infants under two years of age; they included 8 in Glasgow and 5 in Edinburgh. The 14 fatal cases of measles also exceeded the numbers in recent weeks; 10 occurred in Glasgow and 2 both in Edinburgh and in Leith. The 5 deaths from diphtheria included 2 in Glasgow and 2 in Perth; and a fatal case of scarlet fever was recorded in Glasgow, in Edinburgh, and in Paisley. The deaths referred to diseases of the respiratory system in the eight towns, which had been 78, 76, and 52 in the three preceding weeks, further declined to 49 in the week under notice, and were 7 below the number in the corresponding week of last year. Of the 466 deaths from all causes in the eight towns 161, or 35 per cent., were recorded in public institutions, and 13 were attributed to different forms of violence. The causes of 10, or 2·1 per cent., of the deaths in the eight towns during the week were not certified or not stated; in the 77 English towns during the week the proportion of uncertified causes of death did not exceed 1·0 per cent.

In the eight principal Scotch towns, with an estimated population of 1,710,291 persons, 825 births and 435 deaths were registered during the week ending June 24th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 17·7 to 14·2 per 1000, further fell to 13·3 in the week under notice. During the first 12 weeks of the past quarter the annual death-rate in these towns averaged 17·0 per 1000 of the revised estimate of their population, and exceeded by 3·0 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 8·3 and 11·5 in Aberdeen and Edinburgh to 15·5 in Dundee and 22·2 in Greenock. The 435 deaths from all causes in the eight towns last week showed a further decrease of 31 from the decreasing numbers in recent weeks, and included 58 which were referred to the principal epidemic diseases, against 56 and 64 in the two previous weeks; of these 58 deaths, 25 resulted from whooping-cough, 16 from measles, 13 from infantile diarrhœa, 2 from scarlet fever, and 1 each from diphtheria and enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·8 per 1000, and exceeded by 0·9 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had been 43, 32, and 27 in the three preceding weeks, further declined to 25 last week, of which 14 occurred in Glasgow, 3 in Edinburgh, 3 in Paisley, and 2 in Greenock. The 16 deaths from measles showed a further increase upon recent weekly numbers, and included 12 in Glasgow and 3 in Edinburgh. The 13 deaths of infants under two years of age attributed to diarrhœa were fewer by 2 than the number in the previous week; 5 occurred in Glasgow, 3 in Dundee, and 2 both in Edinburgh and Paisley. One of the 2 fatal cases of scarlet fever and the death referred to enteric fever were recorded in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had declined in the four preceding weeks from 78 to 49, were 51 last week, and were 10 below the number in the corresponding week of last year. Of the 435 deaths from all causes in the eight towns, 137, or 31 per cent., were recorded in public institutions, and 18 were attributed to different forms of violence. The causes of 14, or 3·2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns during the week the proportion of uncertified causes of death did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the numbers enumerated at the recent Census), 692 births and 350 deaths were registered during the week ending June 17th. The annual rate of mortality in these towns, which had been equal to 17·1 and 16·1 per 1000 in the two preceding weeks, further declined to 15·9 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these towns averaged 18·5 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·3, and in the eight principal Scotch towns 17·3 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 19·2 in Dublin (against 11·2 in London), 14·4 in Belfast, 15·0 in Cork, 10·2 in Londonderry, 12·2 in Limerick, and 17·1 in Waterford; and in the 16 smallest of these Irish towns the mean annual death-rate during the week did not exceed 13·6 per 1000. The 350 deaths from all causes in the 22 towns during the week showed a further decline of 4 from the numbers in recent weeks, and included 23 which were referred to the principal epidemic diseases, against 29 and 21 in the two previous weeks; these 23 deaths were equal to an annual rate of 1·0 per 1000, which was slightly lower than the mean rate from the same diseases in the 77 English towns. These 23 deaths from the principal epidemic diseases in the Irish towns during the week included 9 from diarrhœa, 8 from whooping-cough, 3 from diphtheria, 2 from measles, and 1 from scarlet fever, but not one from enteric fever or small-pox. The 9 deaths attributed to diarrhœa showed an increase of 2 upon the number in the previous week, all being of infants under two years of age; 4 were recorded in Dublin. The 8 fatal cases of whooping-cough showed an increase of 7 on the number in the previous week, and included 4 in Belfast and 3 in Dublin. A death from diphtheria was recorded in Dublin, in Dundalk, and in Ballymena. Both the fatal cases of measles occurred in Dublin, and that of scarlet fever in Belfast. The 64 deaths referred to diseases of the respiratory system in the 22 towns corresponded with the number in the previous week. Of the 350 deaths from all causes during the week, 114, or 33 per cent., were recorded in public institutions, and 11 were referred to different forms of violence. The causes of 12, or 3·4 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 1·0 per cent. in the 77 largest English towns, and was equal to 2·1 per cent. in the eight principal Scotch towns.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the recent Census numbers) 577 births and 297 deaths were registered during the week ending June 24th. The annual rate of mortality in these towns, which had been equal to 17·1, 16·1, and 15·9 per 1000 in the three preceding weeks, further declined to 13·5 in the week under notice. During the first 12 weeks of the past quarter the annual death-rate in these towns averaged 18·1 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·0 per 1000, and in the eight principal Scotch towns 17·0 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 15·1 in Dublin (against 10·6 in London), 11·1 in Belfast, 19·7 in Cork, 8·9 in Londonderry, 6·8 in Limerick, and 7·6 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 15·7 per 1000. The 297 deaths from all causes in the 22 towns last week showed a further decline of 53 from the numbers in recent weeks, and included 27 which were referred to the principal epidemic diseases, against 21 and 23 in the two previous weeks; the 27 deaths were equal to an annual rate of 1·2 per 1000, which exceeded by 0·3 the mean rate from the same diseases

VITAL STATISTICS IN LONDON DURING MAY, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡										
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.†
LONDON	4,522,628	2	818	572	—	43	—	29	387	8	1859	4·3	—	206	18	42	136	6	78	486	1·1	5483	13·2
West Districts.																							
Paddington	142,541	—	23	17	—	—	—	—	6	—	46	3·4	—	1	—	—	9	—	2	12	0·9	148	11·5
Kensington	172 296	—	20	15	—	3	—	—	13	—	51	3·1	—	3	—	1	13	—	4	21	1·3	198	12·9
Hammersmith	121,837	—	22	26	—	1	—	—	9	—	58	5·0	—	7	1	3	8	—	3	22	1·9	175	15·6
Fulham	153,726	—	38	24	—	1	—	1	9	—	73	5·0	—	3	1	2	4	—	3	13	0·9	174	12·3
Chelsea	66,218	—	15	7	—	1	—	—	5	—	28	4·4	—	3	—	—	2	—	1	6	0·9	88	14·4
City of Westminster	159 709	—	11	5	—	1	—	—	7	—	24	1·6	—	2	—	1	9	—	1	13	0·8	182	13·3
North Districts.																							
St. Marylebone	117,844	—	7	13	—	—	—	—	7	—	27	2·4	—	4	—	2	4	—	2	12	1·1	156	14·7
Hampstead	85,599	—	8	5	—	—	—	—	5	—	18	2·2	—	3	—	1	—	—	1	5	0·6	84	11·5
St. Pancras	218,031	—	43	15	—	4	—	4	14	1	81	3·9	—	5	2	3	3	—	3	16	0·7	262	13·1
Islington	327,234	—	59	44	—	2	—	1	21	—	127	4·0	—	8	3	3	7	—	6	27	0·9	365	12·1
Stoke Newington	50,669	—	4	9	—	—	—	—	6	—	19	3·9	—	1	—	1	1	—	1	4	0·8	49	10·5
Hackney	222,674	—	38	24	—	8	—	—	26	1	97	4·5	—	19	—	1	9	1	2	32	1·5	282	13·8
Central Districts.																							
Holborn	49,084	—	9	11	—	4	—	1	3	—	28	5·9	—	—	1	—	1	—	—	2	0·4	67	15·3
Finsbury	87,639	—	16	20	—	1	—	—	27	—	64	7·6	—	4	—	1	4	—	2	11	1·3	122	15·0
City of London	19,475	—	3	—	—	—	—	—	—	—	3	1·6	—	—	—	—	—	—	—	—	—	32	18·8
East Districts.																							
Shoreditch	111,284	—	16	12	—	—	—	1	8	—	37	3·5	—	8	—	1	6	—	7	22	2·1	187	18·4
Bethnal Green	128,247	—	17	9	—	—	—	4	16	—	46	3·7	—	14	—	2	2	—	3	21	1·7	185	15·2
Stepney	279,560	—	23	49	—	—	—	3	41	3	119	4·4	—	46	—	3	4	1	6	60	2·2	396	15·5
Poplar	162,290	2	41	23	—	—	—	2	19	1	88	5·7	—	27	1	—	1	1	2	32	2·1	250	16·6
South Districts.																							
Southwark	191,595	—	54	35	—	1	—	—	25	1	116	6·3	—	2	—	2	8	—	5	17	0·9	260	14·8
Bermondsey	125,840	—	35	21	—	—	—	2	11	—	69	5·7	—	6	1	2	8	—	1	18	1·5	181	15·4
Lambeth	298,032	—	58	23	—	4	—	2	18	1	106	3·7	—	6	3	2	9	1	5	26	0·9	354	12·8
Battersea	167,765	—	27	14	—	3	—	1	13	—	58	3·6	—	7	—	—	1	—	2	10	0·6	175	11·7
Wandsworth	313,389	—	72	49	—	7	—	5	21	—	154	5·1	—	7	1	5	9	1	5	28	0·9	295	10·3
Camberwell	261,407	—	26	24	—	—	—	—	20	—	70	2·8	—	12	—	2	7	—	3	24	1·0	298	12·3
Deptford	109,475	—	23	10	—	—	—	—	15	—	48	4·6	—	2	2	1	3	1	3	12	1·1	137	13·8
Greenwich	95,982	—	22	25	—	1	—	1	13	—	62	6·7	—	1	—	1	1	—	2	5	0·5	101	11·2
Lewisham	161,677	—	35	20	—	1	—	1	6	—	63	4·1	—	2	1	1	2	—	1	7	0·5	160	10·7
Woolwich	121,509	—	53	23	—	—	—	—	3	—	79	6·8	—	3	1	1	1	—	2	8	0·7	120	11·0
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar General's weekly returns; these two columns are therefore omitted from the Table.

in the 77 English towns. These 27 deaths from the principal epidemic diseases in the Irish towns last week included 10 from infantile diarrhœa, 8 from measles, 5 from diphtheria, 2 from whooping-cough, and one each from enteric fever and scarlet fever, but not one from small-pox. The 10 deaths of infants under two years of age attributed to diarrhœa showed a slight further increase upon recent weekly numbers, and included 5 in Belfast and 4 in Dublin. The 8 fatal cases of measles exceeded the number in the previous week by 6, and were all recorded in Dublin. Of the 5 deaths from diphtheria, 3 occurred in Dublin and 1 each in Limerick and Queenstown. Both the fatal cases of whooping-cough and the death from enteric fever were recorded in Dublin. The 48 deaths referred to diseases of the respiratory system in the 22 towns last week showed a decline of 16 from the number in each of the two preceding weeks. Of the 297 deaths from all causes in the 22 towns last week, 106, or 36 per cent., were recorded in public institutions, and 7 were referred to different forms of violence. The causes of 12, or 4·0 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent. in the 77 largest English towns, and was equal to 3·2 per cent. in the eight principal Scotch towns.

VITAL STATISTICS OF LONDON DURING MAY, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·3 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·4, 4·3, and 4·1 per 1000 respectively. The lowest rates last month were recorded in the Cities of London and Westminster, and in St. Marylebone, Hampstead, and Camberwell; and the highest rates in Holborn, Finsbury, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. Two cases of small-pox, both belonging to Poplar, were notified in each of the last two months. The prevalence of scarlet fever showed a slight increase compared with that in other recent months; this disease was proportionally most prevalent in Fulham, Chelsea, Poplar, Southwark, Bermondsey, Wandsworth, Greenwich, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1224, 1012, and 1018 at the end of the three preceding months, had risen again to 1128 at the end of last month; the weekly admissions averaged 160, against 142, 124, and 127 in the three preceding months. Diphtheria was slightly more prevalent than in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Hammersmith, Holborn, Finsbury, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 801 diphtheria patients at the end of last month, against 902, 881, and 827 at the end of the three preceding months; the weekly admissions averaged 100, against 120, 107, and 97 in the three preceding months. The prevalence of enteric fever showed a decline from that recorded in any previous month this year; this disease was proportionally most prevalent last month in Kensington, St. Pancras, Holborn, Battersea, and Wandsworth. There were 35 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 41, 32, and 22 at the end of the three preceding months; the weekly admissions averaged 5 in each of the last two months. Erysipelas was proportionally most prevalent in Stoke Newington, Finsbury, Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Greenwich. The 29 cases of puerperal fever notified during the month included 5 in Wandsworth, 4 in St. Pancras, 4 in Bethnal Green, 3 in Stepney, and 2 each in Poplar, Bermondsey, and Lambeth. The 8 cases notified as cerebro-spinal meningitis included 3 in Stepney.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending June 3rd the deaths of 5483 London residents were registered, equal to a corrected annual rate of 13·2 per 1000, against 19·0, 17·3, and 16·7 in the three preceding months. The death-rates last month ranged from 10·3 in Wandsworth, 10·5 in Stoke Newington, 10·7 in Lewisham, 11·0 in Woolwich, 11·2 in Greenwich, and 11·5 in Paddington and in Hampstead, to 15·2 in Bethnal Green, 15·3 in Holborn, 15·4 in Bermondsey, 15·5 in Stepney, 15·6 in Hammersmith, 16·6 in Poplar, 18·4 in Shoreditch, and 18·8 in the City of London. The 5483 deaths from all causes included 206 from measles, 18 from scarlet fever, 42 from diphtheria, 136 from whooping-cough, 6 from enteric fever, and 78 (among children under two years of age) from diarrhœa and enteritis. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Hampstead, Holborn, Battersea, Greenwich, and Woolwich, and the highest rates in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 206 deaths from measles were 41 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. The 18 fatal cases of scarlet fever showed a decline of 29 from the corrected average number, and included 3 in Islington, 3 in Lambeth, 2 in St. Pancras, and 2 in Deptford. The 42 deaths from diphtheria were 8 below the corrected average number; this disease was proportionally most fatal in Hammersmith, St. Pancras, Bermondsey, and Wandsworth. The 136 deaths from whooping-cough were 49 fewer than the corrected average number; among the metropolitan boroughs the greatest proportional mortality from this disease was recorded in Paddington, Kensington, Hammersmith, the City of Westminster, Shoreditch, and Bermondsey. The 6 fatal cases of enteric fever were 3 below the average, and belonged respectively to Hackney, Stepney, Poplar, Lambeth, Wandsworth, and Deptford. The 78 deaths from diarrhœa and enteritis among children under two years of age included 7 in Shoreditch, 6 in Islington, 6 in Stepney, 5 in Southwark, 5 in Lambeth, and 5 in Wandsworth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 24·2 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet Surgeons: J. W. W. Stanton to the *Vivid*, additional for the *Colossus*, and to the *Colossus*, on commissioning; and L. Kilroy to Plymouth Hospital.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Francis H. Treherne, from the Royal Army Medical Corps, to be Colonel, vice F. B. Maclear retired (dated June 13th, 1911).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel John Battersby, Half-pay List, is placed on retired pay (dated May 19th, 1911).

Lieutenant-Colonel James R. Forrest retires on retired pay (dated June 21st, 1911).

The undermentioned officers, from the Seconded List, are restored to the establishment:—Captain Geoffrey W. C. Hughes (dated June 16th, 1911). Lieutenant John S. Levan (dated May 26th, 1911).

The under-mentioned Majors to be Lieutenant-Colonels:—Frederick J. Morgan, vice F. J. Jencken, promoted (dated May 12th, 1911); William H. Horrocks, vice R. P. Bond retired (dated May 19th, 1911); Charles H. Hale, D.S.O., vice W. B. Thomson, retired (dated June 7th, 1911); Hugh C. Thurston, C.M.G., vice F. H. Treherne, C.M.G., promoted (dated June 13th, 1911).

Colonel R. I. D. Hackett has taken up duty as Principal Medical Officer of the Karachi Brigade, Southern Army, India. Brevet-Colonel R. S. F. Henderson, K.H.S., secretary to the Principal Medical Officer, His Majesty

Forces in India, has arrived home on three months' leave of absence. Lieutenant-Colonel C. E. Faunce, from the Military Hospital at Gibraltar, has joined for duty at Chatham. Lieutenant-Colonel W. E. Berryman, on completion of a tour of service in India, has been appointed for duty at Woking. Lieutenant-Colonel J. F. M. Shine, at present serving in India, has been granted leave of absence home until Oct. 31st next. Lieutenant-Colonel G. E Hale, D.S.O., medical inspector of recruits in the Eastern Command, has taken over charge of the Station Hospital at Mhow. Lieutenant-Colonel R. G. Hanley, from the Dublin District, has arrived for a tour of service in South Africa. Major G. J. Stoney Archer has taken up duty as Specialist in Advanced Operative Surgery to the Burma Division. Major J. Girvin has been transferred from the Station Hospital at Deolali to Ahmednagar. Major T. H. J. C. Goodwin, D S O., from Quetta, has joined at Aden. Major H. G F. Stallard has been appointed to officiate as Secretary to the Principal Medical Officer, His Majesty's Forces in India, during the absence on leave of Brevet-Colonel R. S. F. Henderson, K.H.P. Major F. R. Buswell, who is serving in India, has been appointed to officiate as Principal Medical Officer of the Jubbulpore and Jhansi Brigades during the absence on leave of Colonel S. C. B. Robinson. Major M. P. C. Holt, D.S.O., surgical specialist Third (Lahore) Division, has been transferred from Ambala to Kasauli. Major G. S. Crawford, on return from duty at Malta, has been appointed to the Irish Command. M jor W. H S. Nickerson, V.C., from York, has been posted for duty to the Second (Rawalpindi) Division. Major C. W. R. Healey, at present serving in India, has been granted three months' leave of absence. Major F. Smith, D.S.O., sanitary officer of the Third (Lahore) Division, has been granted an extension of his Indian tour of service for one year by H.E. the Commander-in-Chief. Major E. C. Anderson has been transferred to the Fourth (Quetta) Division and appointed to command the Station Hospital at Karachi. Captain A. E. F. Hastings, from Allahabad cantonment, has joined for duty at Darjeeling. Captain R. A. Cunningham, from Agra, has been appointed Specialist in the Prevention of Disease to the Eighth (Lucknow) Division and placed in charge of the Brigade Research Laboratory at Allahabad. Captain A. Dawson has been selected to take charge of the Enteric Fever Convalescent Depôt at Wellington, Madras Presidency. Captain F. W. W. Dawson, from Dundalk, has joined at Dublin. Captain T. H. Gibbon, on return from a tour of service at Malta, has been appointed to Canterbury. Captain R. L. Argles has been granted one year's extension of his tour of service in India by H.E the Commander-in-Chief. Captain A. C. Duffey, from the Dublin District, has joined at Rawalpindi.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotion:—Captain to be Major: William Henry Dickinson (dated Jan. 28th, 1911).

The King has also approved of the retirement of Lieutenant-Colonel Lionel John Pisani (dated June 10th, 1911).

Colonel F. C. Reeves has arrived home on leave of absence from India. The services of Lieutenant-Colonel R. B. Roe, civil surgeon of Nagpur, have been placed at the disposal of H.E. the Commander-in-Chief of India by the Home Department. Lieutenant-Colonel J. M. Crawford, civil surgeon of Benares, has been appointed to hold medical charge of the Mirzapur District during the absence of Major W. S. Wilmore on deputation at the Central Research Institute, Kasauli. Lieutenant-Colonel J. T. Daly has been granted leave of absence home from India until Oct. 18th next. Lieutenant-Colonel H. Hendley has been temporarily reverted to military duty from civil employment. Lieutenant-Colonel A. W. Dawson has been granted leave of absence home for seven months. Major F. D. S. Fayrer has taken up duty as Agency Surgeon at Baghalkhand. Major A. Gwyther, civil surgeon at Saran, has been appointed to officiate as Civil Surgeon at Howrah. Captain J. Taylor has been appointed to officiate in charge of the King Institute, Madras, in succession to Captain J. Patton. Captain M. F. Reaney has been appointed for permanent duty under the Government of the Central Provinces. Captain G. McG. Miller has been granted six months' leave of absence home from India on the recommendation of a medical board. Captain W. W. Jeudwine, officiating civil surgeon attached to the Mayo Hospital at Lahore, has been appointed to officiate as Civil Surgeon at Mooltan in succession to Lieutenant-Colonel A. Coleman, transferred to Rawalpindi. Captain E. J. C. McDonald, district plague medical officer at Jhelum, has been transferred in the same capacity to the Gurgaon District. Captain W. M. Anderson has been appointed Civil Surgeon to Dehra Ismail Khan. Captain W. E. R. Williams and Captain H. P. Cook have arrived home on leave of absence from India. Captain A. E. Grisswood, district plague medical officer at Hoshiarpur, has been transferred in the same capacity to the Delhi District. Captain C. Holroyd has been selected for appointment to the Jail Department in the Bengal Presidency.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Philip S. Vickerman is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Albert R Henchley reverts at his own request to the rank of Major (dated June 16th, 1911). Major Albert R. Henchley resigns his commission (dated June 17th, 1911).

Attached to Units other than Medical Units.—**Major David R. Oswald resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated June 17th, 1911). Captain Thomas H. Thomson resigns his commission (dated June 17th, 1911).**

For Attachment to Units other than Medical Units.—**Robert Hill Shaw to be Lieutenant (dated May 20th, 1911). Robert Proudfoot to be Lieutenant (dated May 20th, 1911). Captain James Walker, from the 1st Lowland Field Ambulance, to be Captain (dated May 26th, 1911). Joseph Bernard Dawson to be Lieutenant (dated June 17th, 1911).**

THE TERRITORIAL DECORATION.

Royal Army Medical Corps.

The King has conferred the Territorial Decoration upon Major David Robert Oswald, Retired List.

DEATHS IN THE SERVICES.

Deputy-Surgeon-General Arthur Guy Elkington, late of the Brigade of Guards, on May 31st, at Appin, Farnborough Park, Hants, in his 79th year. He received his first commission in the Army Medical Service in 1853, and retired in 1887. He served in the Crimean campaign, 1854-5, and took part in the battles of Inkerman, where he was wounded, of Balaclava, and throughout the siege of Sevastopol (mentioned in despatches, British and Turkish medals, and the Medjidie of the Fifth Class).

Surgeon William Forrest Archibald, of the Royal Naval Hospital, Chatham, was drowned near Maidstone on June 23rd whilst boating with two brother officers. The deceased officer was appointed surgeon in 1906.

THE CORONATION HONOURS.

A list of the honours bestowed upon members of the medical profession will be found in another column, page 33. We congratulate in the name of the profession the large proportion of members of the services who find a place in that list.

THE ORDER OF ST. JOHN OF JERUSALEM.

The Duke of Connaught, Grand Prior of the Order of St. John of Jerusalem, will inspect the Corps and Divisions of No. 1 District ("the Prince of Wales's Corps"), St. John Ambulance Brigade, in Hyde Park on July 22nd. The General Assembly of the Order of St. John of Jerusalem will be held at St. John's Gate, Clerkenwell, on July 6th. The annual commemoration service will take place at 2.15 P.M. on the same day.

The King has given His Majesty's Royal licence and authority to Major Frederick Fitzgerald Carroll, R A.M.C., to accept and wear the Fourth Class of the Imperial Ottoman Order of the Osmanieh, which has been conferred on him by His Highness the Khedive of Egypt.

PURE CIDER.—At a meeting of the Devonshire Farmers' Union, held recently, the adulteration of cider came under discussion, and it was unanimously resolved to petition the Government to include cider in the new Food and Drugs Bill, and to prohibit the sale of any drink under the name of cider which did not contain 90 per cent. of apple juice.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—In his letter on the National Insurance Bill Sir Alfred Pearce Gould rightly insists on attention to "the underlying principles involved." But in expressing the opinion (tentatively endorsed in your leading article in the last issue of THE LANCET) that the profession ought to say, "We will have nothing whatever to do with contract practice or *per capita* payments," he seems to me not only to make the unwarranted assumption that the evils of contract practice are inherent to the system, but also to ignore the main object of Part I. of the Bill, which is "to provide for *insurance* against loss of health and for the prevention and cure of sickness" for a large section of the "working population."

The principle of insurance implies the devolving of individual risks upon some body which, in accepting them in large numbers at a fixed rate, guards itself against loss by the operation of the laws of average. It is no doubt possible that with regard to "medical benefit" the State might be that body, charging insured persons a periodical premium, paying medical practitioners by fixed fees according to the amount of work done by them in each case, and taking the risk of loss. But such a scheme would be unsound. Payment per visit, by a third party, would inevitably tend to extravagance, as there would be no inducement either to patient or to attendant to prevent doctoring from becoming excessive—a luxury as well as a necessity. No system of artificial control could be trusted to prevent the loss which would then fall on the State. This difficulty is removed by the medical practitioner's contracting for his attendance. He then accepts the insurance risks, but is safeguarded from inadequate remuneration by receiving from the State, which collects the weekly contributions of employer and employed, an equitable sum *per capita*. The amount of that capitation fee (or insurance premium) is, as Dr. Carruthers points out, a matter for actuarial calculation, based on ascertainable statistics. The total remuneration should be on the average equal to or (to compensate him for bearing the risk) somewhat in excess of the fees which the medical practitioner would have received for the same work in private practice.

The advantages of such an arrangement, if made on fair and liberal lines, should be great to all concerned. The sick poor would obtain an efficient medical service, not at the expense of the medical profession, but by the help of the contributions of those whose good health exempts them from the need of medical benefit. Medical practitioners who chose to take this class of practice would receive, through the State, payment at least equal to their present experience with the same class of patients, and without the annoyance of collecting it. It would be to the immediate interest of the medical attendant to get his patients well as safely, quickly, and agreeably as possible. It would further be to his interest to prevent his insured clients from falling ill, and thus he would become an active power in preventive medicine. In private practice the prevention of disease tends to reduce the pay as well as the work of the medical practitioner. Under such a contract system its tendency would be to reduce his work only. In all this not only his patients but the public also would participate. Moreover, it would be as easy to adapt such a scheme to the limit of £160 a year as to that of £2 a week, but with the higher limit the capitation fee would, of course, work out higher.

"Payment for service rendered" is no doubt a just system, but, on the one hand, we must not forget that medical fees are only acknowledgments for what is often of quite inestimable value to the patient, and, on the other hand, we must recognise that under the contract system, just as in private practice, it is in reality the service rendered which is paid for. The Government Bill is at present so entirely unsatisfactory as regards its provisions for medical benefit that the only course open to the profession is to decline to serve under such conditions. Its amendment, so as to render it a satisfactory and valuable measure, should not, however, be beyond the powers of enlightened statesmanship, provided sufficient time is allowed for its full consideration. The well-being of the community is the prime consideration. If we loyally put that before any class interests the public will soon realise that its health and true interest depend very largely on an efficient medical service, and that efficiency and good workmanship cannot be secured on a national scale without just and even generous treatment of the medical profession by the State.

I am, Sir, yours faithfully,

Sheffield, June 26th, 1911. R. J. PYE-SMITH.

To the Editor of THE LANCET.

SIR,—Would you be good enough to publish the enclosed communication and abstract from a memorandum prepared some months ago after long consideration of the problem by a committee of general practitioners, it being considered opportune?

In the leading article in your issue for June 24th you urge the medical profession to consider at this crisis whether by the means of payment for services rendered a way to an honourable settlement of the difficulty between itself and the Government might be found. This committee is convinced that this proposal does give the means desired, and is pleased to note that the influence of your journal can be counted on for that purpose.

A detailed scheme embracing the principles contained in the accompanying memorandum will no doubt be placed before the profession shortly for its consideration. For the moment the medical profession is only concerned to see that nothing is left in the Bill when it becomes an Act to make the adoption of the principle of payment for services rendered impossible. I am, Sir, yours faithfully,

E. ROWLAND FOTHERGILL, Honorary Secretary.

Brighton, June 26th, 1911.

[ENCLOSURE.]

NATIONAL INSURANCE BILL.

We, the undersigned, desire to submit the following memorandum which contains our views with regard to the mode of remuneration of those members of the medical profession engaged in the domiciliary treatment of the beneficiaries under the scheme, and at the same time to add that the views therein expressed are those held in all parts of the United Kingdom by a very large and important portion of the medical profession, probably by a great deal more than half of the total number.

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MILNER MOORE, M.D.
JOHN BROWN, M.D.
W. H. BRAZIL, M.D., B.Sc.
JOSEPH H. KEAY, M.D., M.A., Chairman of the committee.
E. ROWLAND FOTHERGILL, M.B., B.S., Honorary secretary to committee.

(1) THE RISKS OF THE INSURANCE.

The State, being the "Insurance Company," should be responsible for these; no endeavour being made to shift them on to the medical profession. Amongst the risks, the following can be enumerated:—

(*a*) The extra medical attendance required in the event of a long strike with the accompanying deterioration of the health of those on strike as well as of their families.

(*b*) The extra medical attendance required on the unemployed and those dependent on them, in consequence of the vicissitudes of fashion or trade over which the working classes have no control.

(*c*) The extra medical attendance required in consequence of an epidemic of infectious or contagious disease.

(*d*) The advancement of social legislation with its bearing on the health of the nation, necessitating increased duties being required of the medical profession.

(*e*) The increase in the cost of the necessary appliances and in modes of treatment available in general practice, in consequence of the advances made in medical and surgical knowledge.

(*f*) The present ignorance, through want of reliable information, as to what the actual cost of an efficient medical service under a complete Invalidity Scheme would be. This ignorance can only be met by means of years of practical experience.

(*g*) The ignorance, which of necessity must exist for some time, as to how legislation for invalidity insurance will affect previous legislation—e.g., Workmen's Compensation; Employer's Liability; Examination and Treatment of School Children; Medical Assistance under the Poor-law.

(2) PAYMENT FOR ATTENDANCE, WITH A MAXIMUM LIMIT OF LIABILITY TO THE STATE AND THE EMPLOYER.

The beneficiary being the person, who in the first instance required the attendance, it should be made to his interest while not depriving himself of necessary attendance to keep such attendance within reasonable limits. The doctor should also be prepared, by taking a limited amount of risk, to help the State to inaugurate a scheme which would have so many advantages while at the same time eliminating the many disadvantages attached to other proposals.

The proposal is that:—

(1) Every beneficiary should be entitled to claim attendance for isolated occasions on a fixed tariff.

(2) That arrangements should be made with the doctor of the beneficiary's own choice by which a periodical medical examination should be obtainable. This would be the means used for the prevention of disease.

(3) That the beneficiary should have an interest in keeping the attendance within reasonable limits; but such incentive not to become a deterrent from necessary attendance being requisitioned.

(3) MACHINERY FOR OBTAINING ATTENDANCE.

(*a*) Vouchers supplied to the beneficiaries on application to some authorised person.

(*b*) Vouchers to be issued for varying periods not exceeding four weeks, and to be valid for a single illness only.

(*c*) Items of attendance and charges to be entered on the back of the voucher, which is to be returned at the expiration of its validity.

(*d*) In cases of emergency the attendance to be given at once, and a voucher obtained at the earliest possible opportunity after the first attendance.

If it is thought necessary, apart from the foregoing system of vouchers, to provide safeguards against over-attendance on the part of the doctor, the following methods, which depend on different principles, are submitted for consideration:—

(*a*) Medical supervisors as in France, as also in England for vaccination (Government inspectors), and for Friendly Societies (sick visitors).

(*b*) For every attendance of the doctor a small deduction to be made from sick pay, and in the case of patients not drawing sick pay, a small increased contribution might be levied for a sufficient number of weeks.

(*c*) That if a beneficiary is receiving what seems to be excessive medical attendance, he be required to submit to a special medical examination and report.

(4) THE FOLLOWING ARE THE ADVANTAGES.

To the State:—

(1) The principle of payment for work done is the most equitable and satisfactory.

(2) It conduces to smoothness of working between doctor and patient.

(3) The cost to the State could be no more than under an *adequate* capitation grant.

(4) As all classes of doctors would be willing to participate, the more efficient attendance guaranteed by this system will lessen the amount of sickness. It follows, therefore, that the cost of this method would be less in future years than under the capitation system.

(5) It will tend to increase the efficiency of the medical profession.

(6) The inclusion of women and children could be arranged without any further adjustment.

(7) Inclusion of chronic invalids, those engaged in hazardous employment, those ill through personal misconduct and the aged can be arranged for on this, the only satisfactory, basis.

To the medical practitioner:—

(1) He will be relieved of the onus of giving unlimited service for a limited premium.

(2) The trivial consultation and the unnecessary call will not be a continual source of annoyance.

(3) The remuneration will be in proportion to work done.

(4) There will be fewer unremunerative patients.

(5) The relation of patient and practitioner will be more cordial and personal.

(6) The freedom of the private practitioner will be retained.

(7) If additional duties should be required under the advance of social legislation or because of an epidemic, trade strike, unemployment, or any advance in medical or surgical knowledge, the necessary agreement between the State and the profession would need no further adjustment.

(8) The doctor in attendance on clubs would gain by increased fees more than he would lose by any transference of patients.

To the Patient:—

(1) He can command the advice of any practitioner at any time and at any place whether resident there permanently or temporarily.

(2) He can change his doctor, as in private practice.

(3) He is assured of receiving adequate attention.

(4) He has all the advantages of a private patient.

(5) His self-respect is maintained, as services rendered are paid for.

(6) He is made personally interested in the good health of those dependent upon him.

Alternative proposals have been placed before the medical profession. The committee would very briefly name some of the practical objections to each one. Most of the advantages of payment for attendance are impossible under either of the other proposals.

(5) WHOLE-TIME MEDICAL OFFICERS.

The practical objections to the success of this proposal are:—

(*a*) Those beneficiaries who up to the present have paid for a doctor of their own choice would resent being bound to engage certain doctors and would contract out; if public opinion even allowed such a scheme to become law.

(*b*) The institution of a bureaucratic doctor in the place of the family doctor would tend to officialism; and he, having duties placed on his shoulders of a gradually increasing amount, would lose sight of the primary object of his existence—the efficient treatment of those committed to his charge.

(*c*) It would be immaterial to the doctor how long the beneficiary remained on the sick list; and if he were urged to return the patient as soon as possible, there would often follow great injustice to the deserving and honest sick.

(*d*) The doctor would claim the right to a participation in the superannuation scheme, with a resulting great increase of liability on behalf of the State.

(*e*) The more experienced, independent doctor would decline to enter the service or would leave it as soon as possible, and thus the State would become dependent on a doctor of limited experience.

(*f*) Being forced to accept the services of a doctor not of their own choice, the beneficiaries would criticise him more severely, and be constantly complaining to the State Department.

(6) CAPITATION PAYMENT ON BEHALF OF A BENEFICIARY TO A DOCTOR SELECTED.

The practical objections to the success of this proposal are:—

(*a*) The more experienced independent doctor would decline to enter into any agreement with or on behalf of a beneficiary to take over the insurance risks rightly belonging to the State (see Section (1) above) or would cancel such agreement as soon as he was established, or farm the attendance out to a newly-qualified assistant and thus the State would become dependent on a doctor of limited experience.

(*b*) The doctor being paid a fixed sum would reduce the amount of his attendance to the least possible. As it is impossible for anyone except a doctor to define in a specific case what would be inefficient attendance, neither the beneficiary, the employer, nor the State would become aware of such beyond the information obtainable over a period of years as to the improvement or otherwise of the health of the nation as a whole. Under-attendance is a direct injury to the national health.

(*c*) The doctor would not be competent to give all the medical and surgical services required, and therefore the State would have to contract for these services on a higher scale. The original doctor, having a fixed payment, would transfer chronics, aged, those ill through misconduct, as well as exacting beneficiaries, as soon as possible to these specialists or to Hospitals, Infirmaries, Sanatoria, or other institutions, with a greatly increased cost to the State in consequence.

(*d*) Special arrangements would have to be made for attending those ill through misconduct, or who moved into another neighbourhood, whether at the time ill or in good health, or temporarily away on holiday. This could not be done on a capitation basis which would be equitable to the State, the doctor, and the beneficiary.

(*e*) There is no means to prevent vexatious calls being made on the services of a doctor; and if extra charges were allowed, there is no security for their payment.

(*f*) If a beneficiary became a chronic invalid or "aged" or ill through misconduct, the doctor would decline to renew the agreement on the old terms, and the State would thus be compelled to make other special arrangements.

(*g*) There is no incentive to a beneficiary to look after his own health or the health of those dependent on him, as he is secured against the cost of any consequent medical attendance.

(*h*) Those doctors who at present have some 6,000,000 of the proposed beneficiaries in sick clubs would have no incentive to transfer them into a State scheme, and would actively assist those persons and the Permanent Friendly Societies in making the scheme unworkable.

(*i*) The relative certainty of a steady income held out as an inducement to a doctor is only in fact a deferred payment of his earnings.

It is taken for granted that the State would be desirous to elaborate a medical service which in order to prove efficient would insure:—

(*a*) That prevention of disease and prompt and efficient attendance on the sick were always kept prominently in view.

(*b*) That there should be no coercion in dealing with several million persons who will become beneficiaries under the scheme, and who up to the present time have engaged privately a doctor of their own choice on terms mutually arranged. Any coercion would only lead to contracting out of the scheme and its consequent failure from a public health point of view.

(*c*) That the sick beneficiary would be returned to work with the least possible delay, the scheme therefore being approved of by employers of labour and the permanent benefit societies and other bodies giving sick pay whose active coöperation it would under such circumstances be likely to receive.

(*d*) That the beneficiary, whether at home or on a holiday, or on changing his address would be in benefit at all times and in all places (no matter what form of illness he had) and could at once requisition the services of a medical man if required.

In order to insure these four points it becomes necessary to secure the hearty coöperation of the whole of the medical profession.

The committee is of opinion that this coöperation can be secured only by adopting the principle of payment for services rendered.

To the Editor of THE LANCET.

SIR,—On the eve of the recent meeting of the delegates of the British Medical Association, not being a member I sent the following suggested resolution to the Secretary:—

That inasmuch as contract practice as at present carried on is degrading to the medical profession and injurious to the best interests of the public, the British Medical Association calls upon all practitioners holding friendly society or other club appointments to at once resign them; that a special levy, either compulsory or voluntary, be made on all members for the purpose of sustaining such practitioners in their action and indemnifying them against pecuniary losses; and that the coöperation of all other professional organisations be invited in carrying out the above recommendations.

This was a fighting resolution, and if it had been adopted the end of contract practice under Friendly Society control might have been within sight. Further, it would have strengthened Mr. Lloyd George's hands, for he would then have been able to say to the Friendly Societies, "You see, you have so badly treated the medical profession in the past that you are now without doctors, so that your only hope is to leave the matter in my hands and I will try to arrange an efficient medical service for you." Thus the battle would have been won, after one decisive action, and we would have been able to arrange our own terms.

But the army—horse, foot, and artillery—assembled on the banks of the Thames broke up camp, and now we are sniping. Being a political fighter all my life I could understand a fighting attitude on broad principles such as these, and Sir A. Pearce Gould in your columns justly lays stress on principles; but has not that chance gone never to return? (And parenthetically we may well ask if the British Medical Association feared that the holders of club practices would not toe the line?) Nevertheless, it behoves us now to take stock of our position. During 23 years' experience in cash practices in working-class districts in London, and never having there held any Friendly Society or club appointments, I have often observed how the medical men holding such appointments have gradually absorbed many of the private patients of their brother practitioners; and I can quite conceive if this went on long enough hundreds and thousands of such patients would have been added to the club lists of such practitioners without any protest on their part. And if the National Insurance Bill falls through no doubt these holders of Friendly Society appointments will continue to gain even a greater accession of club members in the future to the loss of private practitioners.

Next, let us suppose the Chancellor had given his colleague, Mr. John Burns, the first start in the series of social reform schemes anticipated, and that Mr. Burns had initiated legislation on the lines recommended in the Minority Report of the Royal Commission on Poor-law. How would men such as myself have fared? So far as I can see—and I called attention to the matter last year—a very large proportion of my patients would under the proposed sanitary service have been virtually pauperised, and many would have been taken out of my hands without the prospect of my receiving one penny compensation for them. I should instead have had to pay additional rates and taxes for their treatment. Under the National Insurance scheme, however, I am to receive a capitation fee for the greater number of these cases. We apparently all have short memories, but let us go back to last year only, when we shall find on the public platforms, associated with the authors of the Minority Report, many well-known members of the medical profession warm advocates of such legislation. In the columns of THE LANCET of July 23rd, 1910, p. 229, there was published from the pen of Mr. H. Beckett-Overy and another a strong appeal to the medical profession, urging the acceptance of those recommendations, so that legislative effects could at once be given to the Minority Report. At the time I wrote a letter, published in THE LANCET of Sept. 3rd, p. 760, protesting against what I held to be the exploitation of the profession advocated by the medical supporters of the Minority Report, but my recollection of the matter is that many of us would have been thrown to the wolves then without awakening any very great protest. And to-day what is our position? Nowhere in the United Kingdom can we shut our eyes to the precarious condition of the bulk

of general practitioners brought about by so many and diverse causes. Here, in the East End, as in other parts of London where I have practised, almost every person can go to hospitals and receive gratuitous treatment, and it is practically impossible to have any continuity in the treatment of cases amongst the working-class. In all fairness, then, I ask, What does the Bill offer us who are placed in this position?

So far as I can see it gives us payment for thousands of cases which at the present moment are receiving gratuitous treatment from one source or another, and for which we do not receive a penny. Personally, I think this is something to cause us reflection. Both political parties are pledged to an Insurance Bill and to Poor-law reform. Both schemes must come whoever is in power. On the main and vital points, almost unanimously put forward by the medical profession, we want simple justice and fair play. But I think as we are placed now it will be deplorable if instead of mending the National Insurance Bill we destroy it. The Chancellor has virtually given way on the point of free choice of doctors for the insured, and I have no doubt this point as well as others will be cleared up during the Committee Stage. I am sure then he would get over most of his other difficulties with us now, if he adopted, even as an alternative plan, the system of payment for work done as under the National Deposit Friendly Society with modifications for different localities and work. This would not make his scheme more costly and would go far to satisfy the profession. I have every hope that he will eventually be got to take this view and so assure the smoother passage of his measure. And having thus met us in a broad and statesmanlike spirit, if he would then turn his great financial genius to devise a contributory plan, based somewhat on Poor-law or Civil Service lines, to give the State insurance doctors a pension or superannuation allowance, thus laying the foundation of a future State medical service, he would, when heat has been dispelled, be considered by the bulk of general medical practitioners not "as a villain but as a hero."

I am, Sir, yours faithfully,

Mile End, E., June 19th, 1911. M. S. HARFORD.

To the Editor of THE LANCET.

SIR,—It may seem superfluous for anyone to write further letters on the vexed subject of the National Insurance Bill, but I do not think too many can be written on a subject which strikes so deeply at the financial side of medical life. We, as a profession, are so limited by etiquette in our lines of communication with the lay public that it is difficult for any of us to let the aforesaid lay public know our thoughts and feelings on this or any other important subject. We can do as I am doing, write to your valued columns; but how far do we reach by doing so?

I, personally, have no club patients, with one exception, the National Deposit Friendly Society. This club pays for work done, not at an exorbitant rate, but one at which one does not feel one is prostituting one's profession. You are, as I see in this week's issue, as a result of a letter from "A. K." of York, aware of the tariff used by this club. And I would ask the profession why, if any one club can pay on this basis, the State cannot do the same? In my opinion this club is the only one which gets honest work done for its members, because it is the only club which treats the labourer as worthy of his hire.

Anything more absurd and totally iniquitous than the Chancellor's suggestion it is difficult to imagine with a normal brain. As at present drawn it means that a man may earn £3 per week or slightly more, and in consideration of a payment of 1/40th of this weekly wage can get medical attendance for a year. One hates to think it, but what one is afraid of is that the men who have been willing to prostitute our profession for a capitation fee of 4*s.* per annum may be equally willing to degrade it by undertaking work on the at present totally inadequate suggested basis. I, personally, can see no other way of dealing with this question than that suggested by "F.R.C.S. Eng. in General Practice." Why cannot the General Medical Council pass a resolution to make it "infamous conduct in a professional respect." Were they to do so, no medical man who respects himself or his profession would resent it, and it were better if those outside this limit were dealt with by the Council, and drastically.

This Bill, which is calculated to ruin many a medical man, is so flagrantly unfair and predatory that it is not easy to speak or write calmly about it, but the one thing to be prayed for is that any existing professional jealousies shall be buried and an absolutely unanimous resistance offered to it, either voluntarily or, if that is too much to hope for, compulsorily. Why in the name of all that is fair and just should medical men be exploited for the benefit of the unfit and unthrifty? What other trade or profession would submit to such oppressive legislation? I know of none. Medical attendance is no more necessary than bread or meat or any other marketable commodity. If the labouring classes spent less in beer and tobacco no need would have arisen for any legislation of this kind. I have many patients whose wages do not exceed 30*s.* per week, and yet they are willing and able to pay a decent fee for work done. The cases who are not are in the majority of instances alcoholic or gamble, and therefore are either out of employment or absolutely unthrifty. Are we to put a premium on this class of being? It would appear to be so.

Apart from its medical aspect, the Bill is obviously ill considered. It suggests paying 7*s.* per week to any employee for a given period as compensation for unemployment, but it does not provide for the first week! Any man may be out of work for a week, and that is the time he most urgently needs help; but the longer he is out of work the more probable is it that he is to blame in some way, probably C_2H_5OH. It must be obvious that in its present form it puts a premium on loafing. Whereas if they paid him 10*s.* the first week and reduced it one or two shillings per week to zero, unless some special cause existed, it would tend to make the man look for work.

I am, Sir, yours faithfully,

June 19th, 1911. ERNEST STRATFORD, M.R.C.S. Eng., &c.

To the Editor of THE LANCET.

SIR,—The General Medical Council demands a certain standard of education, with a minimum number of years' (i.e., five years) study in preparation for the same. The cost of this is well known to our profession. We do not start medical practice with the object of being pure philanthropists, but of obtaining in return for our work just and reasonable remuneration. Will any sane person suggest that 1*d.* per week for highly skilled work is any remuneration at all? I think not. I believe there is no profession which in the past has done so much gratuitous work as the medical. Surely there is hardly a man who, if he has been any length of time in practice, has not repeatedly attended patients for all sorts of illnesses without payment, and has not asked for any, but when the State comes in and *orders* him to work for no remuneration at all it is surely time to say, *No*, and that very decidedly. This Bill practically abolishes all fees below 5*s.*, and one of its effects would be greatly to increase the competition for this fee, with the result that in order to obtain work some would be tempted to accept 3*s.* 6*d.* or less, so the damage would not only fall on those who lose the lower fees. No *per capita* payment that could be suggested would be any suitable payment at all.

Is it a fact that any man lives on club practice alone? Has not the club or similar work in the past brought with it private work, and has not this been the paying part? Have not the Universities and the licensing bodies power to refuse to allow their graduates and diplomates to accept absurd payment? Has not the General Medical Council power to make it "infamous conduct"? Under this Bill hundreds of medical men would be ruined—the sale of practices made impossible, the life of a doctor would be one of endless toil for no reward, bad work would multiply by leaps and bounds, for it would be impossible to give adequate time to the cases. There are many thousands of people who can well afford to pay 2*s.* 6*d.* or 3*s* 6*d.* fees who would have their treatment for nothing. The status of the profession would be lowered infinitely. We have but to be united, to resist in every way, and we *must* prevail. Our work is the highest and the noblest a man can do, and "the labourer is worthy of his hire." If there are any so poor (and we know there are some) that they cannot afford to pay small fees, let the State pay for them, but let us stand as one man—united, strong, resolute to have a just remuneration from those who *can* afford to pay. The suggestion of a limit of £2 or £3 a week is absurd; moreover, a distinction should be made between the married and the unmarried.

But let us not forget for a moment that the profession is passing through the gravest crisis in its history, and if once

any terms such as those suggested are accepted it may be impossible to alter matters, and the profession will be irretrievably ruined.

I am, Sir, yours faithfully,

REGINALD THORPE, M.R.C.S. Eng., L.R.C.P. Lond.

Elmbourne-road, S.W., June 21st, 1911.

To the Editor of THE LANCET.

SIR,—It does not seem to have been generally noticed that one of the "additional benefits" under the Insurance Bill is to be "medical treatment and attendance for any persons dependant upon the labour of a member." Schedule IV., Part II. (1). This as being one of the cheapest and most profitable benefits allowed will probably be largely claimed and will further diminish the remnant of private practice.

I am, Sir, yours faithfully,

F. MILTON, M.R.C.S.Eng., L.R.C.P. Lond.

Llanberis, June 18th, 1911.

To the Editor of THE LANCET.

SIR,—What the attitude of the medical profession should be towards the National Insurance Bill could not, I think, be put more clearly or with greater force than has been done by Sir Alfred Pearce Gould in his altogether admirable and well-reasoned letter to THE LANCET. It will appeal strongly, I think, to the large majority of medical men, who will feel much encouraged by his powerful influence and support. I have held Friendly Society appointments now for about a quarter of a century, and one great reason of our mistrust in them is, I think, that although they are well aware of the vastly improved conditions of the labouring and artizan classes, and of the higher rate of wages obtained in a large measure by the Trades Unions, they have not revised the rate of remuneration to their medical officers where it could possibly be avoided, or, if at all, only in a most grudging and inadequate manner. My "clubs" do not pay me on an average 5*s.* per head per annum, which is at the same rate my father before me held similar appointments. If a suggestion is made that the fees should be raised the reply has in effect always been, "Take it or leave it."

We well know that many of the members of the societies could as readily pay £1 per annum, or even more, as the ridiculous sum that we now have to accept for what is regarded as payment for our services. When we see these same members attending football matches, &c., in their thousands, often expending as much on a single outing as they offer their medical man for a year's services, we feel, indeed, that our present position with regard to them must be ended.

I am, Sir, yours faithfully,

June 19th, 1911. DUNELM.

To the Editor of THE LANCET.

SIR,—The National Insurance Bill has an aim with which we are all in sympathy, to help the workers while they are well, to provide savings to bear the cost of sickness, in order that, relieved in their illnesses from privation and anxiety, they may the more quickly return to work and become again useful to the State.

Mr. Lloyd George thinks the Bill will improve the public health and reduce sickness, and that the contributors will find so much more work done, and so much more return for their work, that they will never miss their contributions. Sanguine, but not impossible. What he has so far arranged is that every employed contributor—that is, roughly, every labourer or artisan (seamen, too, are included)—shall pay 4*d.* a week, his employer 3*d.*, and the State 2*d.*, or 39*s.* a year, to meet charges for doctors' fees (medical benefit), sanatorium benefit, sickness benefit (10*s.* or 5*s.* weekly for not more than six months), disablement benefit (5*s.* weekly), maternity benefit (30*s.*), and other benefits if the scheme is a success. The *Times*, I may say, fears the disablement benefit most, pointing out that in Germany it is only payable to a man who has been four years insured, but in our Bill it is to be payable after the second year; while, further, in Germany it is not given to a man if he is still able to earn one-third of his former wages, but here if he is "rendered unfit," and no precise statement of the degree of disablement is given. *Punch* has called this the "Sickness Ensuring Bill."

It is of special importance to the medical profession to know what is to be expended out of that 39*s.* in payment of medical benefit. That is nowhere stated. The approved societies and the Local Health Committees are to make arrangements with us "for insured persons to receive attendance and treatment to the satisfaction of the Insurance Commissioners." Mr. Lloyd George has talked of 6*s.* for us, but there is nothing but his speeches to guide the new Local Health Committees. Several people lately have said we should press to have nothing to do with the Friendly Societies, but to have everything arranged with the Local Health Committees. It is important, then, to understand who these committees are. They will cover the same area as a county or city council and will be in number from 11 to 22, of whom 6 will be appointed by the county council, probably from members of the local sanitary authorities, 6 will be insured members of the Friendly Societies, 6 will be insured deposit contributors (who will be explained later), 4 more will be appointed by the county council, of whom two will be doctors; statutory representation of women has been promised. No group here seems likely to be markedly friendly to the medical profession. Over one-half are the insured who are to get all their own benefits out of the 39*s.* after the medical benefit has been deducted. They can make what arrangements they like with the doctors, if the Insurance Commissioners approve, but they are more likely to give a capitation rate than to pay by fee, as payment by fee is uncertain in amount and cannot be so accurately forecast, and if they have become liable for a bill larger than their estimate it must go through the Insurance Commissioners to the Treasury and to the county council who, if they think the expenditure reasonable and proper, sanction it, and proceed forthwith, each of them, to raise half the quantity by taxation. It is quite easy to see how little anxious anyone will be to regard extra expenditure as reasonable, and what a wigging the Local Health Committee will get if its expenditure is in excess of its estimate; so there seems little doubt but that payment will be made on the capitation principle, which is easy to plan out and estimate exactly beforehand. As to the deposit contributors, they will not be members of Friendly Societies, probably because they are bad lives, and Mr. Lloyd George has said that 6*s.* would not cover their medical attendance, so he will see they pay more.

Mr. Lloyd George is anxious to make the sick comfortable, to put them in the way of getting well quickly; he says he cannot ask any more from the workmen, that the employer cannot give more, and that he has himself precipitated something in the nature of a constitutional revolution in his desire to raise the six millions already wanted for this Bill. The only thing left to squeeze is the medical profession. He has never discussed what we consider the vital points. At the meeting of representatives of the British Medical Association, when the wage-limit was suggested for discussion, he raised a prejudice against anyone who should venture to bring that matter up. We took clubs at 4*s.* in the hope that as we grew older, people of larger income than our present employers, men with £3 and £4 a week, seeing our assiduity and our success, might engage us to attend them and their families at higher fees. But now these men are compelled to insure, and we must attend them at the club rate, which few of them have heretofore demanded.

The Chancellor has now made a categorical answer to the communication addressed to him by the General Medical Council, and has declared his willingness to make one of the Insurance Commissioners a medical man. This, of course, is a move in the right direction, for without a medical Commissioner we may be certain that the recommendations of any Advisory Committee upon medical matters would run considerable risk of inattention. Otherwise there was nothing in the Chancellor's reply to the General Medical Council that was likely to reassure the medical profession, or to arrest that shortage of medical men, the probability of which has been conspicuously alluded to by the Council.

I am, Sir, yours faithfully,

June 19th, 1911. NAVITA.

To the Editor of THE LANCET.

SIR,—The second reading debate on this Bill has demanded serious consideration, and many persons regret that the procedure in the House precluded the opportunity for an immediate and a direct refutation of the many unsatisfactory statements by the Chancellor of the Exchequer. Most of us are in favour of the principle of the Bill. I myself am a Liberal in politics, and as a Liberal I contested a Parliamentary county division and a borough. I was in general practice for seven years and subsequently in consulting practice, and

for over 20 years was physician (and finally senior physician) to a large hospital for tuberculosis and diseases of the chest. Most carefully have I read the whole Bill, the memorandum, and nearly all the speeches on the second reading, and the statement by the Chancellor that "there is one part of the Bill that has escaped the attention of every doctor in the land" is incorrect.

Mr. Lloyd George stated that "the doctors proceed in their criticisms on five assumptions, all which are erroneous." I cannot say that none have done this, but all those with whom I have discussed the measure in private and at public meetings have most assuredly not done so. They and I have proceeded on the assumption that while some of the profession were opposed to the system of capitation payment, a capitation arrangement is the only workable method; but we suggested that, in the event of a capitation grant being ultimately decided upon, it should be laid down that, seeing that neither capitation nor amount is mentioned in the Bill, the *minimum* capitation fee for ordinary professional attendance (excluding surgical operations and bacteriological and kindred and allied work) be fixed and stated in black and white in the Bill itself at not less than 10*s.* 6*d.* per annum, thus leaving it open to increase the amount according to the necessities of particular localities. We have never assumed any attendance on families, but only on individuals. We have advocated some kind of selection by patients of their medical attendants (subject to the latter being willing to attend them) being arranged for, a point absent from the Bill. Mr. Lloyd George, when he was told that free choice of doctor was not mentioned in the Bill, quoted Sec. 14: "Every approved society and Local Health Committee shall for the purpose of administering medical benefit make arrangements with duly qualified medical practitioners for insured persons to receive attendance and treatment to the satisfaction of the Insurance Commissioners from such practitioners." This clause might protect medical men against Friendly Societies if the words "every approved society and" were omitted and the majority of each Local Health Committee and of the Insurance Commission consisted of medical practitioners, but not otherwise. Mr. Lloyd George said that "not a doctor in the country has seen that." Why, Sec. 14 (1) is one of the many points round which the doctors' objections have clustered! He added, "They (the doctors) are free to make any arrangements which they like, which the *societies* like, of which the Insurance Commissioners approve." Did Mr. Lloyd George think he was speaking to children? How can "they" *make* the "arrangements" which they *like* when the Bill, so far, *provides* for their forming only one-ninth, or at most two-ninths, of the Local Health Committee, one-third of which is to be appointed by the "approved societies"?

Mr. Lloyd George is seeking to confer advantages on certain classes at the expense of the medical profession, and the members of the profession are not going to submit to this. Mr. Lloyd George said, "There is absolutely nothing *prescribed* in the Bill which would preclude the doctors from making any of the arrangements which they themselves have been recommending during the past few days." True, nor is there anything "prescribed" in the Bill that will protect their interests in any way, and this is what we complain of, particularly as the members of clubs and benefit societies are, to a certain extent, picked lives, for they are medically examined prior to admission and admitted only if medically fit, while the "Post Office" crowd that this Bill would let in might be all diseased at the moment of admission—the Bill says nothing to the contrary.

Later on Mr. Lloyd George clearly showed what his idea of the profession is. He admitted that he had to take some basis for medical attendance. He said, "I took the basis of 6*s.* because I understood from the report (British Medical Association, 1903) that this was the sum which was better than most doctors ever expected—better than most of them asked for—and I thought at any rate I would be on the right side if I put the amount at 6*s.*" What satisfied a group of club doctors whose private practices were left untouched does not necessarily now satisfy a whole profession whose complete private practices are threatened with ruin by compulsory insurance. If Mr. Lloyd George's speech, from which I have quoted, is to be taken as representing his scheme, the medical profession should simply reply, "It is a hollow and ridiculous sham," and without the coöperation of the medical profession the sham is doomed. The voice of the medical profession as a body calls for a basis not lower than 10*s.* 6*d.* per head—if there is a capitation payment—and this, too, for only ordinary medical treatment; for a free choice of doctors by patients if the doctors are willing to attend them; perfect independence of all so-called friendly societies; a strong medical proportion on all committees, boards, and on the commission; and all these points to be stated clearly in the Bill itself (and not to be left over "for consideration between next August and April," as Mr. Lloyd George asks—i.e., after the Bill has passed), otherwise Mr. Lloyd George will have difficulty in finding his "*best* medical attendance." I enclose my card.

I am, Sir, yours faithfully,

M.D., D.P.H., M.R.C.P. LOND. (BARRISTER-AT-LAW).

June 17th, 1911.

THE POSITION OF THE PRESENT REFORM MOVEMENT IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—I am very glad to read Mr. H. Nelson Hardy's letter on the above subject in THE LANCET of June 17th, partly because the criticisms it contains are obviously the outcome of a thoughtful study of the subject, and partly because I can, I think, put such considerations before him as will help him to see the points he raises in a somewhat different light. His first point would seem to be that as there are far more anæsthetic fatalities under registered than under unregistered administrators—a fact that is, of course, incontestable—there would be very little gained by the passage of an Act which would only protect the public against the risks of anæsthesia conducted by the latter class of practitioners. The second point, I take it, is that the use of methylated in contradistinction to ethylated or ethyl-alcohol chloroform, introduces a grave risk into chloroform anæsthesia. May I be permitted to deal with these two points separately?

One of the chief contentions of those who have interested themselves in the present reform movement is that, considering the knowledge we now possess as to the physiological and clinical effects produced by anæsthetics, the public is not sufficiently safeguarded against the risks of these agents. It is maintained, in fact, that a large number of the deaths which annually take place during general anæsthesia are preventable. As one fatality after another is chronicled Science seems to say to all whose ears are attuned to her utterances: "Provided anæsthetics are administered by persons whose general and professional education has been such as to entitle them to employ these powerful drugs, and provided also that such agents are administered according to those principles which recent experiment and clinical study have elaborated, the risks of artificially induced unconsciousness will be so slight that no one requiring surgical treatment need hesitate to incur them. But if ignorant and unqualified persons be permitted to take upon themselves these responsibilities, or if properly educated and qualified persons be permitted to use these drugs in such a way as to transgress the laws which are now known to be essential for safe anæsthetisation, painless surgery cannot possibly be practised without incurring grave risks from the necessary anæsthesia." Science bids us indeed put our house in order, and the sooner we begin to do so the better for the safety of the public and for the credit of our profession. The question is, Where shall we begin? Surely we must, in the first place, inspect the whole fabric from basement to attic, and decide whether any alterations of a structural nature are needed in order that the house, when completed, may conform to modern requirements. Should it be found that such structural changes are needed, surely we must start at the very foundations and work upwards. Let us not become the laughing-stock of posterity by repairing and improving the upper floors of our house before looking to these foundations. In other words, let us first see that all anæsthetics are placed in the hands of those who have been sufficiently educated to be entrusted with the responsibilities of anæsthesia; and when this has been accomplished by legal enactment let us direct our whole attention to improving the conditions under which anæsthetics are administered by registered practitioners. I freely admit that the most radical

alterations are necessary in the conditions under which anæsthesia is now conducted by those whose right to administer anæsthetics cannot be questioned. But let us deal with irregular practice first, and thus lay the foundation of a new and better order of things for the future.

The second point raised by Mr. Nelson Hardy is whether or not the use of *methylated* chloroform introduces a risk into chloroform anæsthesia which is absent when ethylated or ethylic alcohol chloroform is used. Mr. Nelson Hardy implies that this is the case, and in support of his thesis he mentions the fact brought to light some years ago that at a certain London hospital where methylated chloroform was used more anæsthetic fatalities had occurred in a certain number of years than at another hospital of about the same size where it was customary to use ethyl-alcohol chloroform. But if Mr. Nelson Hardy will go more carefully into the matter he will find that there was a far more important difference than this in the conditions under which anæsthetics were administered in these two institutions. In the one in which the larger number of accidents arose no special attention was paid to what may be termed the personal factor in anæsthetising—that is to say, anæsthetics were often entrusted to young and inexperienced administrators. In the other institution, however, in which accidents were far less frequent, anæsthesia was almost invariably conducted either by visiting or by resident anæsthetists. In order, however, that I may more completely dispose of the methylated chloroform bogey, let me add that this particular brand of chloroform is that which I have for some years past recommended for employment in hospitals with which I have been connected, and that at those hospitals at which it has been employed at my recommendation no cases have arisen in which this particular brand seemed in any way responsible for difficulties or accidents. Furthermore, with the object of being consistent and of making myself perfectly certain as to the safety and efficiency of Duncan and Flockhart red label methylated chloroform, I may say that I have myself used this chloroform for the last four years and without any of those results which Mr. Nelson Hardy and the believers in the danger of this brand regard as likely to arise.

I am, Sir, yours faithfully,

June 20th, 1911. FREDERIC HEWITT.

INQUEST FOLLOWING A CASE OF "HEALING" BY CHRISTIAN SCIENCE.

To the Editor of THE LANCET.

SIR,—Will you permit me to point out a mistake which has crept into your report of the inquest on Miss Nora Bohm, who died under Christian Science treatment? It is stated that the lady was living in a Christian Science "nursing home." As a matter of fact, there is no such thing as a Christian Science nursing home, and the house in which the patient was living was simply an ordinary house to which anyone could have gone. May I also say that the practitioner called in a doctor after the patient's death, as that is usual in the circumstances? No Christian Science practitioner imagines that a doctor could, or should, give a certificate when he is called in in this way.

I am, Sir, yours faithfully,

FREDERICK DIXON.

Surrey-street, Strand, W.C., June 24th, 1911.

THE ELECTION OF DR. J. A. MACDONALD AS A DIRECT REPRESENTATIVE.

To the Editor of THE LANCET.

SIR,—I wish to thank the medical practitioners of England and Wales for choosing me to be their Direct Representative on the General Medical Council at the recent election rendered necessary by the regretted death of Dr. McManus. Immediately after the result of the election was declared I was called upon to attend the session of the Council at which the National Insurance Bill was discussed, and the report upon certain of its medical aspects prepared, which drew from the Chancellor of the Exchequer the reply published in THE LANCET last week. The consideration of the Bill by the British Medical Association in the Representative meeting and the Special Committee has made such great inroads on time and energy that my friends will, I am sure, forgive the delay in returning my thanks; though tardily expressed, my gratitude is none the less sincere.

It shall always be my endeavour to justify the confidence my brother practitioners have shown by electing me to so responsible a position at this critical time.

I am, Sir, yours faithfully,

Taunton, June 26th, 1911. J. A. MACDONALD.

THE ADVERTISING OF PATENT MEDICINES.

To the Editor of THE LANCET.

SIR,—It may seem ungracious if, in thanking you for your kind notice of the motion I made in the recent General Assembly of the Church of Scotland regarding secret remedy advertisements in the monthly magazine of the Church, I venture to encroach upon your space. Will you allow me to correct a wrong impression which your paragraph in last week's issue is likely to leave upon your readers regarding the decision of the Supreme Court of our Church on the matter in question? The Assembly was practically unanimous in adopting a modification of my motion. The committee in charge of the magazine had referred in their report to objections urged against certain forms of advertisement, and had reported a marked loss of income due to their refusal to insert questionable notices. Desirous of making an end of a particular class of these advertisements, which still appear in the pages of the magazine, I moved as follows:—

> The General Assembly thank the Committee ..... for their care in regard to the selection of advertisements to be circulated in the magazine, and instruct them to carry their endeavours to that end yet further by excluding all advertisements of secret or patent remedies of a medical or quasi-medical description, in order that the disinterestedness and Christian character of the accredited organ of the Church may be above suspicion in that respect.

Although I am sorry to say that some voices were raised in defence of the *status quo* on financial grounds, by an overwhelming majority my motion, down to the words "*yet further*" was carried, the Assembly preferring to make its instruction more general than my proposal seemed to suggest, so as to include within its scope *other objectionable advertisements also*—e.g., of all sorts of *bogus bargains*.

Permit me to add that I value very highly your words of encouragement. I know you would not willingly do injustice either to the Church I represent or to the committee in charge of its magazine.

I am, Sir, yours faithfully,

June 23rd, 1911. WILLIAM A. CURTIS.

CHILDREN'S CONVALESCENT HOME, WESTON-SUPER-MARE.—The annual meeting of the subscribers of this institution, which is in connexion with the Royal Hospital for Children, Bristol, was recently held. The medical report stated that during 1910 the children admitted numbered 386. 359 patients had been discharged during the year, and of these 254 had "recovered," 79 had "much improved," 23 had "improved," and 3 showed no signs of improvement. The financial statement showed that subscriptions and donations had slightly diminished.

THE "CONGRESSO NAZIONALE D'IGIENE" AT TURIN.—This, the first of a series of Congresses to be held in future years at one or other of the great academic or industrial cities of Italy, will be inaugurated on Oct. 5th and will sit till the 8th of that month. The agenda paper is both interesting and opportune, prominent among the subjects to be dealt with being "Malaria," by Professor Negri of Pavia; "Industrial Hygiene," by Professor Bianchini of Bologna; "Disinfectants," by Professor Frassi of Parma; "The Hygiene of Schools," by Professor Bordoni-Uffreduzzi of Milan; "Mediterranean Fever," by Professor Neri; and articles of diet, such as "Sugar," by Professor Giacosa of Turin; "Milk," by Professor Volpino and Professor De Matteis of the same school; and "Drinking Water," by Professor Abba, Professor Volpino, and Professor Cler, also of Turin. Further information as to the Congress may be had on application to the President, Dr. Luigi Pagliani, professor of hygiene in the local university.

THE NATIONAL INSURANCE BILL:
POSITION IN IRELAND.

(FROM OUR OWN CORRESPONDENTS)

IRELAND has been well called the country of contradictory problems, where effect does not always obviously follow cause; in other words, the conditions that go to make what may be called the social organism are so complex that unless there is a thorough knowledge of the whole national and local circumstances it is absurd to attempt to connect cause and effect. This is being well illustrated at present by what is taking place in connexion with the Insurance Bill.

Meeting of Dublin Graduates.

A meeting of medical graduates of the University of Dublin was held at Trinity College on June 26th, when the Provost was in the chair, to consider the Insurance Bill as it would affect the medical profession in general and medical practice in Ireland in particular. Sir Charles Ball referred to the differences which exist between medical practice in Great Britain and that in Ireland; the Poor-law system, for instance, is quite distinct in the two countries. The seven points approved by the British Medical Association were considered in detail by the meeting. A resolution was passed condemning the medical clauses of the Insurance Bill as unnecessary and inapplicable to Ireland, and requesting the Chancellor of the Exchequer to cancel those clauses as far as Ireland is concerned, and to remodel the present system of Poor-law and hospital medical relief, so that it may apply to present conditions of labour and employment in Ireland. It was further resolved to appoint a committee to draft a statement for submission to Members of Parliament on the proposed resolutions. Among those who spoke were Dr. Henry Jellet, Dr. F. A. Winder, Mr. J. H. Campbell, M.P., and Dr. J. Esmond, M.P.

Action of the Roman Catholic Hierarchy.

At an important meeting of the Roman Catholic hierarchy held at Maynooth on June 20th a resolution was passed requesting the Chancellor of the Exchequer not to extend the Insurance Bill to Ireland, but to set aside the State contribution necessary for financing the scheme to the credit of Ireland, either for an insurance scheme to be specially devised for the needs of Ireland, or for some other purpose that may be deemed more beneficial to the general welfare of the population; and they call upon the Irish party to urge this policy in Parliament. They base their argument on the fact that while the Bill may do for England and Wales, of which 78 per cent. of the inhabitants are urban and only 22 per cent. rural, it does not suit a country like Ireland, of whose population only 28 per cent. are urban and 72 per cent. rural, and of whom only a mere fraction—either urban or rural—are wage earners, the immense majority being workers on their own account, such as farmers, shopkeepers, and others, who neither receive nor pay wages. Further, in their opinion the measure would increase unemployment. There can be little doubt, however, that among other things influencing the prelates is the well-known fact that the small farmers and their children who work on the land can always at present obtain gratuitous medical attendance and medicine through the widespread dispensary system, which has no parallel in either England or Scotland.

Views of the British Medical Association in Ireland.

The members of the South-Eastern Branch of the British Medical Association in Ireland, who met recently in Clonmel, have passed resolutions expressing satisfaction that the views expressed by the branch on the State Insurance scheme have been endorsed by the Roman Catholic bishops and by the General Council of the Irish County Councils. The resolutions also state that if the Bill "is forced on the country, seeing that it does not propose to fix the amount or condition of remuneration for medical attendance, but allows it to be settled afterwards between health committees, advisory committees, insurance companies, and medical men, similar powers of arrangement as to the admission or exclusion of voluntary classes and as to the terms on which they may obtain medical benefits under the Act in Ireland should be insisted on when the gross annual emoluments of such persons exceed £75 per annum; and that voluntary and all other contributors whose gross weekly earnings exceed £2 per week be excluded from the operation of the Act." They urge also that the part of Section 6, Clause 59, beginning with the words "and these officers," be deleted from the Bill, and call on the Parliamentary representatives of the south-eastern area to give effect to the views of the branch.

Proposed Amendments by the Irish Nationalist Party.

Some of the Irish Members of Parliament—especially those representing industrial towns—rather favour the Bill, having a natural reluctance to oppose a measure which is meant especially to assist the toilers. All Members of Parliament, however, in Ireland are probably agreed that the State contribution under the Bill must be obtained for Ireland. In these difficult circumstances, a committee of the Irish Nationalist Members, consisting of 14 of the ablest of their number, is sitting in Dublin working out a scheme specially devised to suit the country. This proposed addendum or amendment to Mr. Lloyd George's measure is still necessarily in a fluid state, but the details are common property in Dublin, where they are being criticised by the medical profession. It is understood that the Irish party will recommend for Ireland a much less extensive policy, with smaller contributions from both employer and employed, and that most of the work under such scheme, if it becomes law, will be given to the Poor-law medical officers. It is hoped that by some such offer as this the Poor-law officers may be detached from opposition, and may be willing to give their help to the working of the measure. In an interesting article in the *Scotsman* of June 24th it is pointed out that if Mr. Lloyd George accedes to what probably will be the Irish Nationalist demand, he will destroy the financial basis of his Bill, and he will at the same time make it more than ever objectionable to the Scottish agriculturist and farm-servant. It is also pointed out that even now Germany does not provide sickness insurance for the agricultural community.

The Irish College of Physicians Takes Action.

The Royal College of Physicians of Ireland has issued the following circular to its Members and Licentiates:—

Royal College of Physicians of Ireland,
6, Kildare-street, Dublin, June, 1911.

DEAR SIR,—The Royal College of Physicians of Ireland has had under careful consideration the terms of the National Insurance Bill now before Parliament. The College agrees with the following policy which has been extensively adopted by the profession:—

1. That the profession should be adequately represented on all boards and committees controlling or administering medical benefits.
2. That the Friendly Societies should not make the arrangements with medical practitioners for the attendance and treatment of insured persons, nor otherwise administer medical benefits.
3. That provision should be made for exclusion from medical and maternity benefits of persons whose average income from all sources exceeds £2 a week.
4. That adequate remuneration should be assured to medical men for their services.
5. That the patient should be allowed to select his own doctor from those available, but subject to the consent of the doctor selected.

The College does not ask for expressions of opinion on these points, but before taking such further active steps as may be deemed advisable in reference to the Bill, is desirous of obtaining information as to the effect which the scheme embodied in the Bill would have upon the income and standing of the Members and Licentiates of the College.

Replies are therefore invited to the following questions:—

1. What proportion of your patients would come under the compulsory insurance scheme of the Bill?
2. What percentage of your takings during the past two years has come from attendance on workers who would become insured?
3. Are any of your patients members of clubs, and if so, what proportion, if any, of your income do you suppose you would lose under this Bill?
4. What proportion of your gross receipts is spent upon drugs and dressings?

The College appeals to those Licentiates or Members whose practice will be especially affected by the Bill to answer the foregoing questions, addressing replies to the Registrar, Royal College of Physicians of Ireland, 6, Kildare-street, Dublin. All information will be regarded as absolutely confidential.

We are, dear Sir, yours faithfully,
(Signed) J. HAWTREY BENSON, M.D., President.
T. P. C. KIRKPATRICK, M.D., Registrar.

Summary.

On the whole, then, it must be said that the mass of opinion against the application of the Insurance Bill to Ireland is steadily increasing. Several county councils have declared the Bill in its present form unsuitable to Irish conditions, and have asked for a postponement for full consideration; the Roman Catholic hierarchy,—a body with great influence in the formation of public opinion in Ireland—has passed resolutions in similar strain; a meeting of graduates of Dublin University last

Monday passed a resolution condemning the clauses concerning medical and midwifery benefits in so far as they applied to Ireland; and the Irish Medical Association has circularised all medical men in Ireland, seeking their opinion on various suggested amendments, and asking whether members of the profession are prepared to refuse employment under the Bill if satisfactory changes are not made before it becomes law.

THE DISPOSAL OF REFUSE ON THE RIVIERA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

AS most of the readers of THE LANCET know, the greater part of the Riviera consists of a narrow ledge of land with the sea in front and high mountains behind. Here are situated numerous winter stations, because the mountains shelter this narrow ledge from the cold winds and reflect the heat of the sun that faces them. For these reasons the Riviera has often been compared to a Dutch oven. It faces south. The sun plays the part of the fire, and people sit under the shelter of the mountains to bake themselves in its genial warmth.

Rapid Growth of New Towns.

This topographical situation confers on a comparatively northern latitude climatic advantages that, as a rule, can be found only much farther south. As usual in all human affairs there are, however, accompanying disadvantages. The most obvious is the want of room. When, with the exception of Nice and a few minor places, there were but fishing villages along the Riviera this did not matter. To-day the most pretty places are developing into large towns, such as Beaulieu, Turbie, Eze, and Cap d'Aile. A few years ago each of these villages consisted of a mere cluster of small cottages, now they have huge hotels, containing several hundred beds, and many exquisite villas surrounded by gardens where semi-tropical vegetation flourishes. The picturesque carriage road from Nice to Monaco, though 10 miles in length, has houses on either side nearly the whole way. Instead of little villages dotted along the road there will soon be a town stretching from Nice to Mentone some 16 miles long, and varying in width from 100 yards or so to half a mile. The little villages, which have now become quite important communes, with a town hall, a mayor and municipal council, will have to amalgamate and constitute the district councils or boroughs of a huge winter metropolis. Already these communes cannot exist without interfering with each other. Formerly the manure, dirt, and refuse of every household were consumed advantageously as manure, and placed at the roots of the neighbouring vines and olive trees. Now sewage schemes are being discussed, and it is discovered that if the main sewer of one commune should pass through the land of another commune the spot which would serve as a convenient sewer outfall for one sanitary authority must result in spoiling the beach and bathing of a neighbouring and rival district.

Mentone Refuse Thrown into Ravines.

Taking one of the many problems which the rapid growth of population renders more and more acute, there is the question of dealing with household refuse. At Mentone this difficulty has not yet been settled. Though Mentone is one of the older Riviera resorts and has now more than 10,000 inhabitants, the authorities have not yet decided what to do with the domestic refuse. At present it is taken away in carts along the beautiful and interesting road to Sospel and there thrown down into ravines. Nothing is done to prevent the horrible smell that arises when this rubbish begins to ferment; and, of course, it becomes a breeding ground for flies and mosquitoes. Everyone acknowledges that this is an absolutely reprehensible procedure, but as yet remedies have only been discussed. The upshot, however, of these debates is that the authorities have decided, I believe, on the erection of a destructor. But there are rival projects, and delay has arisen due to the difficulty of deciding which of them is the best. The first project consists of the Horsfall system as applied at Leeds and also, close at hand, at Monaco. It is proposed to build the destructor on the side of a hill so that a road passing behind might easily reach the higher level whence the rubbish is thrown on to the top of the furnace. The second project employs two furnaces at different temperatures. The air is to be carried through hot clinkers to help in the combustion of the material that is damp and has newly arrived. This is the Humboldt system, a firm that has its headquarters at Cologne. The third project is that of the British firm, Messrs. Heenhan and Froude, who are building a destructor at Havre and have their system at work at Burslem and many other places. Though it is doubtless embarrassing to decide which of these methods is best suited to the local necessities of Mentone, still the matter brooks no further delay.

The Monaco Refuse Destructor.

In this, as in many other respects, the Principality of Monaco was the first to set a good example. As far back as the year 1898, and at a cost of £3400, a destructor was built by the seashore in the Fontvieille district. The Horsfall system, which is very popular in England, was adopted. All the products of combustion that arise from the fire and the drying of the rubbish as it glides down towards the furnace, pass round and under, and then into the fire. These products of combustion are thus exposed to the highest temperature and rendered innocuous. To attain a very high temperature no cold air is allowed to reach the fire; it must first pass round the outside of the furnace and acquire some warmth. An occasional jet of steam discharged on the fire stimulates the air currents and adds to the temperature, which often exceeds 900° C. Outside, but close to, the furnace there is a chamber through which the hot air passes before it reaches the chimney stack. Here are placed carcasses, bad meat, &c., that have to be destroyed. The heat in this chamber is sufficient completely to destroy a horse's carcass during the course of the night. The clinkers that are the outcome of the destruction of the rubbish are very useful at the present moment. To increase the too small area of the Principality a sea wall is in course of construction just by the side of the destructor. The clinkers are thrown into the water between the sea wall and the shore, and thus land will be redeemed from the sea and the Principality enlarged. As some 70 cubic metres of rubbish can be destroyed in a day there is a pretty good yield of clinkers to constitute the foundations of the new territory. During all these years the destructor has worked well, and no complaints have been made.

Nice Refuse and the Fertilisation of the River Banks.

Nice is not so completely hedged in by mountains as some of the Riviera cities. Behind the town there is the broad valley of the Paillon, which is convenient for the disposal of rubbish, but the proceeding becomes very inconvenient when the wind comes from that quarter. The Paillon, and also the Var, which is not far off, are rivers with very arid pebble-strewn land on both sides. Indeed, the banks are of stone rather than land. So difficult is it to grow anything here that farmers come to Nice from great distances and gladly carry away the town rubbish at their own cost so as to bury it in their poor and unproductive soil. Though the population of Nice may continue increasing for many years to come, there is enough land on the banks of the Var and the Paillon to utilise for yet another 100 years all the household refuse and rubbish Nice can produce. Some of the worthless land on the banks of the Var belongs to the town. If the farmers do not fetch all the refuse away, the town can increase the value of its own property by rendering it fertile with its own rubbish. Higher up the Var and the Paillon there is much land available that could thus be rendered valuable. Here, then, is an admirable source of municipal revenue and a means of providing work for the unemployed if the public rights are jealously guarded. But there is the danger that as soon as the land has been rendered valuable at the public cost it will be jobbed away for the private profit of individual speculators. Unfortunately it does not seem as if the authorities at Nice recognise the necessity of holding remunerative property so as to meet the ever-increasing cost of local government. Yet it would be easier to collect rents from fertile lands, created by the municipality on the banks of the Paillon and the Var, than to incur the unpopularity of increasing the taxation which already weighs too heavily on the inhabitants of Nice.

Cannes Refuse Purified by Burial.

The municipality of Cannes possesses a good deal of land in the as yet uninhabited portion of an outlying dis-

called La Bocca. This is a good two miles away from the centre of the town, though there are many villas much nearer. Here, in a vast and flat field, the iron pipes to be used as water conduits were brought to be lined both outside and inside with cement. Now that this cementing of the pipes is concluded the big field is utilised for the disposal of the household refuse. The process consists of digging a trench, 5 feet wide and 2 feet deep, in summer. In winter, and for fear of the water, due to rain, the trenches dug are 3 feet deep. These trenches are filled with the refuse and the earth is placed back on the refuse. This is left to stand for five years. By that time a natural process of purification has taken place, the earth can be dug up and the ground used again. When I visited this place a trench had been dug at one end in virgin soil. This was a very heavy clay soil, and at the other end the soil was quite light and consisted of earth that had covered refuse for five years. There was no unpleasant smell whatsoever.

The important point to be observed is that the rubbish is buried just as it arrives. There is no sifting. This could not be done without exposing the refuse to the sun for at least 24 hours, and by that time it would begin to ferment and to smell. About 45 cubic metres of refuse are collected every day in four large four-wheeled carts and 17 two-wheeled tip-carts. Fifteen cubic metres of this refuse are sold for agricultural purposes, and in winter especially this is unloaded into railway trucks to be conveyed for the most part to Antibes. Here it is used to force plants, and more especially in hot-houses for early strawberries. It forms a sort of foundation or basis, which is covered over with choice earth in which the strawberries are planted. There then remain 30 cartloads which the town buries in the manner already described. The field at La Bocca is hardly big enough, it measures 1200 metres square. It is close to the celebrated umbrella pines which can be seen near the sea-shore as the train approaches Cannes. This land is worth 2*s.* the square metre, and belongs to a private owner, who allows it to be used for this purpose, and for such purposes it should continue to be used, for though five years' burial destroys bad odours, it does not follow that the land is fit to be built upon. But the municipality has at its disposal another field on higher land, which is preferable, especially when it rains. After the rubbish has been buried for five years it is sold at 60 centimes (or 6*d.*) the cubic metre. From the sanitary point of view this is excellent, but the agriculturist who digs this earth up five years later views the matter from a different standpoint. The golf club bought a quantity of this rubbish when it had been converted into what was supposed to be fertile earth; but sufficient account was not taken of the fact that the rubbish had not been sorted before it was buried. The remnants of an iron bedstead, a varied collection of shattered gallipots, a perforated saucepan, some old lamps, and much broken glass are not good substitutes for manure. The golf club found the soil at 6*d.* the cubic metre cheap, but the cost of the labour for sifting it was very dear. The municipality sometimes does the sifting, but then it sells the soil resulting at 8 francs the cubic metre. Even at this high price it only reckons to make a profit of 1 franc 50 centimes, or 1*s.* 3*d.*, per cubic metre. In these circumstances it prefers to sell the earth unsifted and get 6*d.* for it without any trouble at all. When sold at 8 francs the municipality has to dig it up, sift, and deliver it to the purchaser. If it is sold at 6*d.* the purchaser does all the digging and sifting himself and carts the earth away. However, these are minor considerations; the great fact remains that the sifting process is postponed until such time as it can no longer occasion a nuisance.

Mechanical Sorting and Crushing.

There can be no doubt that it may become a matter of necessity to employ household refuse, but the destructor renders very great service where space is restricted and there is a large accumulation of dwellings. This is notably the case at Monaco, as there is no room remaining in the Principality for agriculture. Liebig once urged that no country was sufficiently rich to be able, after the lapse of a certain time, to purchase back the fertilising principles of its existence which it had wasted. These words are significant to-day, as the tendency is to drain when possible into the sea, large rivers, or lakes, without making any attempt to utilise the sewage. It is becoming more necessary not to lose the fertile principles contained in house refuse. At the same time this must not become, as it used to be, a pretext for accumulating great heaps of putrescible matter. Fortunately there have been of late various inventions by which household refuse may be mechanically sorted and the utilisable portions ground into an inodorous powder. The difficulty will be to obtain from the sale of the fertiliser thus produced a sufficient revenue to pay the cost of elaborate machinery. It is said, however, that this can be done, as shown by important experiments made in the outskirts of Paris. But Paris is far away from the Riviera, though perhaps in time the Parisian example will travel southwards. Thus, in the end mechanical sorting and crushing will perhaps replace the methods described for dealing with domestic refuse.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

National Insurance Bill.

ON June 14th representatives of 26 Midland hospitals met to discuss the effect of the Bill upon hospital finance. Mr. Neville Chamberlain, senior representative of the General Hospital, which convened the meeting, presided, and representatives were present from the other Birmingham hospitals, West Bromwich, Wolverhampton, Walsall, Dudley, Stafford, the Potteries, Coventry, Warwick, Leamington, Stratford-on-Avon, Rugby, Kidderminster, Redditch, Cheltenham, Derby, Buxton, and Nottingham. Mr. Chamberlain remarked that a large part of their income was derived from the Hospital Saturday Fund and from the direct subscriptions of employers and workpeople. If they had to pay a compulsory sum weekly for insurance it seemed obvious they would not subscribe to the hospitals as in the past. Provision was made in the Bill for assistance towards the establishment of sanatoriums, but medical men did not seem to be at all unanimous nowadays in believing that these sanatoriums were going to be great curative institutions, and he submitted that it was a rash experiment to spend so large a sum on what was a doubtful matter and at the same time to withhold subscriptions from voluntary hospitals, about the value of whose work there was no doubt. Mr. Howard Collins (house governor to the General Hospital) gave the results of inquiries which he had made with reference to the finances of 40 hospitals within 50 miles of Birmingham. Thirty-two had supplied information. From the income of the hospitals he had taken out the total amount subscribed by employers from their places of business and the workpeople's contributions to the Hospital Saturday Fund as being affected directly, and the Hospital Sunday Fund and general donations as being only half affected. For the Birmingham hospitals the total income directly affected was £29,443. The estimated amount from employers and employees was £14,231; from the Hospital Saturday Fund, £7790; the Hospital Sunday Fund, £3278; general donations, £2236; and various other contributions, £4300. The total estimated amount affected was £34,478 out of a total income of £72,729, a percentage of 47·4. Taking the whole of the 32 hospitals it was estimated that £100,702 would be affected out of a total of £194,169. This was a percentage of 51·86. In the Birmingham hospitals the following figures applied: General, 32·6; Queen's, 79 7; Homœopathic, 43; and General Dispensary, 52·8 In the district the amounts varied as follows: Nottingham General, 65 3; North Staffordshire Infirmary, 67; Wolverhampton General, 68; West Bromwich, 95·8; Walsall, 76; and Nuneaton, 77 7. The variation was largely due to the proportion received from the Hospital Saturday Fund. The following resolution was carried unanimously:—

That this meeting, while welcoming any legislation which by reasonable arrangement will benefit the sick poor, is of opinion that the National Insurance Bill, if passed in its present form, will so gravely affect their income as to necessitate the curtailing of the amount and efficiency of their work, including a serious reduction in the number of beds they can support, and therefore urges that the Bill be so amended as to provide against such loss of income, whilst preserving their independence and maintaining an alternative to the Poor-law infirmaries.

—On June 15th a large meeting of the members of the

Birmingham branch of the British Medical Association was held in the Midland Institute and presided over by Professor J. T. J. Morrison. The meeting was undoubtedly the largest ever held by the profession in Birmingham, the branch drawing its members from a large area extending over portions of Worcestershire, Warwickshire, and Staffordshire. The Bill was discussed by Professor Jordan Lloyd, Professor H. Gilbert Barling, Dr. Langley Brown, Dr. Thomas Wilson, Dr. Harold Mason (Leamington), Dr. Radcliffe, Dr. Orton (Coventry), and several others. The resolutions formulated by the British Medical Association were unanimously passed, and the meeting pledged itself "to support this programme and to decline to serve on any terms that have not been accepted by the British Medical Association."

Hospital Saturday Fund.

The thirty-ninth annual collection was made on Saturday, June 17th, 1366 contributors paying into the Fund on the first day no less than £15,862, as compared with 1212 contributors and £14,265 last year. The total was £1002 better than the record year of 1908. It is hoped that before the Fund is closed at least £21,000 will be obtained. Sir Hallewell Rogers, the President, in addressing the workers, said that his view was that the National Insurance Bill would not affect the Hospital Saturday Fund to anything like the extent that might be feared on first thoughts. The objects of the Fund were, firstly, to support the Birmingham Hospitals and nursing societies with substantial annual grants, and to this end they divided among them £10,000 a year. There was nothing in the Bill to affect that situation. The hospitals would be as vitally necessary as ever. The Children's Hospital and Women's Hospital especially met the needs of patients who were not provided for by the Bill. Secondly, the objects of the Fund were to provide and support convalescent homes. There was nothing in the Bill that touched those homes. Up to date 40,000 patients had been treated free at their convalescent homes, and in their own right, without any rate aid, or State aid, or capitation grant from employers. Was it likely that the workpeople would stop such beneficent work? A large proportion of the Hospital Saturday Fund subscribers were already members of friendly societies and were already paying even more than 4*d.* a week. These would not have anything more to pay, and those who had been in societies for a large number of years would have less to pay than they do now for the particular benefits received. They therefore would not withdraw their Hospital Saturday penny. Then the Bill made no provision for the wives and children, both of whom formed a large proportion of the patients at the hospitals and also at the convalescent homes. Again, in the case of subscribers who were not at present members of friendly societies and would now have to start paying 4*d.* per week, they were no worse off than some thousands who in the past had annually joined the ranks of friendly societies without a thought of stopping their Hospital Saturday subscriptions.

June 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The University of Manchester.

IT is of interest to learn that the site and buildings of the University of Manchester represent £600,000. It must be remembered what Manchester has done for its University, for it has never had one halfpenny of public money as building grant. To keep pace with the ever-growing demands of the times, within the last ten years—1900 to 1910—the University has spent £212,461 on buildings. The total number of students attending the University is 1691, and of these 378 (including 21 women students) belong to the Faculty of Medicine. Certain minor changes have been made in the ordinances for the L.D.S., and the following new ordinances, *inter alia*, have been approved for the degree of Master of Dental Surgery:—

1. No candidate will be admitted to the degree of Master in Dental Surgery unless he has previously received the degree of Bachelor in Dental Surgery in the University.

2 Candidates, before proceeding to the degree of M.D.S., shall produce evidence of having, subsequently to the conferment on them of the degree of B.D.S., been engaged for at least one year in attendance on the practice of a dental hospital or in scientific work such as is conducted in the medical departments of the University, or alternately of their having been engaged for at least two years in practice as a dental surgeon.

3. Candidates may elect either (i.) to present an original dissertation or (ii.) to undergo an examination.

Singular Case under the Workmen's Compensation Act.

A somewhat unusual case under the Workmen's Compensation Act was tried in the Salford county court on May 19th, when a miner claimed compensation from a colliery firm for injuries sustained in an explosion due to shot-firing in one of their pits. A shot-firer named Pollitt was present as a third party at the instance of the employers. The claimant's case was that he was requested by Pollitt on Dec. 27th last to couple up a cable in connexion with the shot-firing in the mine. As he was in the act of responding there was an explosion which resulted in injuries incapacitating him from work. The defence was that the claimant, in obeying Pollitt's request, was contravening a statutory regulation made for the protection of the lives of miners. It was the duty of the shot-firer—a specially authorised person—alone to do the coupling, and if any other person did it a consequent accident could not be said to arise out of and in the course of his employment. The judge said that in his opinion the act of the claimant was one that might have resulted in danger to the lives of everybody in the mine, and under the circumstances was very serious indeed. As he was doing the work specially restricted to another person it could not be held that the accident arose out of and in the course of his own employment, and therefore there must be an award in favour of the employers. Owing to the gravity of the act, too, the employers would be allowed costs.

The British Psychological Society.

This society held its annual meeting in the Medical School, Manchester, on June 24th. There was a good attendance of members and visitors. Professor Sherrington was in the chair, and amongst the communications was one by the President on a method of demonstrating Listing's Law. The apparatus is ingenious and brings the facts clearly to the view of the onlooker. It requires the use of a dark room. Mr. Henry J. Watt read a rather abstruse paper on a New Classification of Experiences and the need for a theory which must be completely psychical. Mr. Cyril Burt discoursed on the Experimental Investigations of Emotional Dispositions and the need for investigation by the application of experimental methods, and by tests, both qualitative and quantitative, based on such processes as (1) apperception of ambiguous figures—e.g., a figure representing a skull and it maybe the figure of a woman, and determining which of the two appears first to the observer, which is prepotent; (2) memory for pictures; (3) preference for pictures; and (4) associative reactions. The sex question is obviously one of profound interest in this connexion. Dr. T. Graham Brown gave an account of the Perception of Movement of the Environment, such as the seeming movement of a cabin of a rolling vessel even when the head and eyes are fixed in relation to its walls. Dr. Brown expressed the opinion that the seeming movement of the wall of the cabin is not due to slight involuntary movements of the head and eyes, but seems rather to lie in the fact that sensations from the muscles of the eyes and from the labyrinths and proprioceptive organs of the muscles and joints of the neck all take part in the integration of the perception of movement of an object seen by the eyes. The seeming movements of a ship's cabin under the condition specified may be explained as due to the determination of the perception of movement by the compounding of the sensation of the fixed retinal image and the sensations from the labyrinths which move in space with each roll of the ship.

The Meals of Necessitous School Children.

The Salford town council, at its last meeting in May again discussed the question whether necessitous school children should have two meals a day supplied or only one. All the eloquence of the advocates of the two meals a day system, supported by quotations from Ruskin, Rowntree, Charles Booth, and other writers on social problems, failed to convince the council, and the proposal was once more defeated. It was successfully contended that already the council's education committee was doing as much as is necessary in this regard.

Infant Mortality in Salford.

The infant mortality in the borough of Salford for the

quarter ending April 1st was 118 per 1000 and the general death-rate 14·7 per 1000. Of the total deaths in the past quarter no fewer than 23·7 per cent., or nearly one-quarter of the whole, occurred in public institutions.

June 27th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Guild of Undergraduates.

AT a recent meeting of the Court of the University certain ordinances for the regulation of a Guild of Undergraduates were introduced and sanctioned by unanimous vote. The guild has as its objects "The promotion of corporate feeling and mutual fellowship among undergraduates and students, as well as of recreation in common and the cultivation of common intellectual interests." The Vice-Chancellor, in moving the adoption of the ordinances, said that they went no further than to constitute their guild a constituent body of the University, with a right to representation at the Court. They provide that every undergraduate shall, *ipso facto*, be a member of the guild, subscribing a sum not exceeding half a guinea annually. Provision is also made for the admission of associate members, the election of a representative to the University Court, financial administration, and the making of by-laws.

Chemists and the National Insurance Bill.

The chemists of Bristol and the surrounding towns met recently at the Grand Hotel to discuss the proposed insurance legislation. There was a very large attendance, and resolutions were passed approving of the separation of prescribing from dispensing, and asking that the dispensing should be entrusted only to persons registered under the Pharmacy Act, that patients should have freedom of choice of chemist, that payment should be fixed by scale and not on a capitation basis, and that pharmacists should have representation on the Central Advisory Board and on the Local Health Committee. It was further resolved that every dispensary employed under the Act should be subject to the Pharmacy Acts, the Food and Drugs Act, the Weights and Measures Acts, and all other Acts affecting traders; and that no further facilities be granted to carry on public dispensaries. All these resolutions were carried unanimously.

A Memorial Window at the Bristol Royal Infirmary.

A window, representing St. Elizabeth in robes of purple and grey, symbolical of royalty and humility, ministering to the sick and poor, has been placed in the chapel of the Bristol Royal Infirmary. Mr. Arnold Robinson of Bristol is the designer and the cost was defrayed by gifts from past and present nurses, members of the honorary staff and the committee. It is dedicated to the memory of eight nurses who have within recent years died while in the service of the infirmary. The ceremony of dedication was performed on Saturday, June 3rd, by Archdeacon Robeson.

Red Cross Society.

The Bristol branch of the Red Cross Society is now in possession of headquarters of its own in a central position. The various uses to which it is proposed to put all the rooms were explained to the officers of the various detachments by the county director, Mr. J. S. Griffiths, at a meeting held at the new headquarters. The work of the branch is progressing steadily, and it is hoped that eight or a dozen thoroughly served detachments may be formed with a few in reserve.

Compulsory Notification of Tuberculosis in Bristol.

At the last meeting of the Bristol health committee it was decided to report to the city council upon the importance of the compulsory notification of tuberculosis. It was also stated at the meeting that a lady would be prepared to give about £1000 towards the initiation of a dispensary for cases of tuberculosis. After some discussion the subject was left for further investigation.

Herbert Lorraine Earle Wilks, L.R.C.P. Lond., M.R.C.S. Eng.

Mr. H. L. E. Wilks, honorary surgeon to the Salisbury General Infirmary, died at his residence, The Retreat, De Vaux Place, Salisbury, on June 4th, in his forty-fourth year. The deceased received his medical education at Guy's Hospital, and qualified as M.R.C.S. and L.R.C.P. in 1891. Shortly afterwards he was appointed house surgeon to the Salisbury Infirmary. Mr. Wilks held this appointment for several years, and on his resigning the post was elected honorary surgeon to the institution. He was also surgeon to the Salisbury and South Wilts Provident Dispensary. Mr. Wilks had an extensive practice in Salisbury and the district, where he was very popular, and great regret is felt there at his early death.

The Health of Gloucestershire School Children.

At the last meeting of the Gloucestershire education committee it was reported that during 1910 over 13,000 school children had been medically examined, and only 43 per cent. of them were classified as being in a normal condition of health, although a large proportion of the ailments were of a minor character.

New Water-supply for Instow (Devon).

On June 12th the new water-supply for Instow was formally inaugurated in the presence of a large gathering. For some 20 years there have been various discussions at different meetings of the Barnstaple rural district council in reference to the water-supply of Instow, and eventually an arrangement was made with the Barnstaple Water Company to supply the little town. The water is carried from Barnstaple by 8½ miles of mains. Instow, which is one of the pleasantest of North Devon watering places, is to be congratulated upon at last obtaining an efficient and excellent water-supply.

The Treatment of School Children's Teeth at Torquay.

The Torquay education committee has obtained the sanction of the Board of Education to a scheme for providing temporary dental treatment for school children of the ages of 6, 7, and 8 years. Mr. J. Glanville Turle and Mr. Ludlow Strangways have been appointed to perform these duties until August 4th. These gentlemen will attend the children on two mornings every week for three hours on each occasion. The estimated cost of the undertaking is £40.

The Penzance Board of Guardians.

At a meeting of the Penzance board of guardians held on June 8th, Mr. C. Branwell, who was the only candidate for the post, was appointed medical officer for the fifth district. As already stated in THE LANCET, Mr. Branwell, owing to the insufficiency of the salary, resigned this appointment some months ago. The guardians then increased the remuneration, and appointed another medical man, but the Local Government Board refused to sanction the appointment. Mr. Branwell is to be congratulated upon securing his old post at a more adequate remuneration, and in being well supported by the local members of the profession.

June 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

National Insurance Bill.

AT the annual meeting of the Edinburgh branch of the British Medical Association, held in Peebles on June 24th, Dr. William Russell presiding, an informal discussion took place on the National Insurance Bill. The questions mainly discussed referred to the £2 wage limit, which by many of the members was regarded as too high. One country parish was particularly quoted in which with a population of over 300 souls there were not more than five persons with an income of over £150 per annum. Another point discussed was the question of mileage. One speaker, who had worked this question out in his own practice, stated that travelling by his own motor-car cost him 6*d*. per mile, and quoted the case of a patient whom he had seen a few days before 15 miles away, or 30 miles including the return journey. He charged this patient 15*s*. per visit, which allowed nothing for either his time or his skill, his contention being that on the question of mileage alone the Bill was unworkable financially.

Royal Faculty of Physicians and Surgeons of Glasgow and the State Insurance Bill.

At a largely attended extraordinary meeting of the Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow resolutions on the subject of the National Insurance Bill have been adopted, and the President, Dr. D. N. Knox, was requested to forward them to the Chancellor of the Exchequer for his earnest consideration. The resolutions were:—

1. That (*a*) the Insurance Commission, (*b*) the Advisory Committee, and (*c*) every Local Health Committee should include an adequate representation of duly qualified medical practitioners.
2. That "medical benefit" and "maternity benefit" should be administered by the Local Health Committees and not by "approved societies."
3. That in respect of the administration of "medical benefit" and "maternity benefit" the arrangements with "duly qualified medical practitioners made by the Local Health Committees should be such as to admit of free choice on the part of the insured person of the medical practitioner to be employed, and that the medical practitioner should have the right of refusal, such refusal being a matter of appeal to the Local Health Committee."
4. That in respect of the grant of subscriptions and donations to hospitals and other charitable institutions contemplated in Clause 17 of the Bill, the governing conditions should be assimilated to those set forth in Clause 15 (1) with regard to the administration of "sanatorium benefit."
5. That in respect of the provision to be made for "the supply of proper and sufficient drugs and medicines" under Clause 14 (2), the supply of proper surgical dressings and appliances should be included; and further, that steps should be taken to insure that the drugs and medicines are of the standard required by the British Pharmacopœia, and that the dispensing of prescriptions is carried out by qualified persons.
6. That "medical benefit" should include provisions for consultations and for operations when these are necessary; further, that the Local Health Committees be empowered to determine the remuneration of duly registered medical practitioners for special services rendered.
7. That in the case of an insured woman it should be made clear that "sickness benefit" accrues in addition to "maternity benefit"; and further, that in cases attended by a midwife the local health committee be empowered to pay for the attendance of a medical practitioner should such attendance be called for by the midwife, in accordance with the rules governing her practice.
8. That in respect of the deposit contributor class, which will consist of members other than the picked lives of the Friendly Societies, increased remuneration should be paid to medical practitioners.
9. That provision should be made in the Bill for exclusion from medical and maternity benefits of persons whose average income from all sources exceeds £2 per week.

Aberdeen Medical Men and National Insurance.

Under the auspices of the Aberdeen branch of the British Medical Association a mass meeting of the members of the medical profession within the area of the branch—Aberdeen, Banff, Kincardine, Orkney, and Shetland was held in the Medico-Chirurgical Society's Hall on June 15th for the purpose of considering resolutions and amendments anent the National Insurance Bill. There was a large attendance. The President, Dr. John Gordon, spoke of the medical aspect of the Bill, and referred to its effect upon the profession. He noted the fact that children under the age of 16—in the present form of the Bill—would not participate in money benefit, but would participate in medical benefit. He also drew attention to the fact that the Bill contained no provision for the statutory representation of the medical profession on any of the three administrative bodies, appointed under the Bill—the Insurance Commission, the Advisory Committee, and the Local Health Committee. Dr. D. Lawson, Nordrach-on-Dee Sanatorium, who represented the branch at the meeting held in London last month, reported shortly of the interview which the meeting had with Mr. Lloyd George, and showed how unsatisfactory, from the point of view of the profession, the meeting was. A lengthy discussion ensued, the Bill being strongly criticised in many cases. Finally, the resolutions contained in the circular of the British Medical Association of June 3rd were put to the meeting and unanimously carried. At a meeting of the Aberdeen Medico-Chirurgical Society held on June 14th the same resolution was carried unanimously.

Montrose Asylum: Annual Meeting.

The annual meeting of Montrose Asylum was held on June 13th. The usual grant of £325 was made to the Royal Infirmary. Dr. W. Leggett, chief assistant at Sunnyside, was granted an increase in his salary from £200 to £250 per annum. Dr. M. A. Milne was appointed X ray operator and chloroformist at the infirmary, and Dr. M. Connon, Dr. J. A. S. Grant, and Dr. H. J. Hoile were appointed medical officers.

The late Dr. MacKenzie, Kingussie.

The funeral of the late Dr. MacKenzie, Kingussie, took place on June 14th at Kingussie churchyard, amidst manifestations of deep sorrow on the part of the townspeople and the general public. There was a large attendance of mourners, and shops and all places of business were closed during the funeral. The schools were closed from midday, and a number of the advanced pupils, in whose welfare the deceased had taken a warm interest, attended. At the monthly meeting of the town council it was unanimously agreed to that a minute of condolence be inserted in the burgh records, and an excerpt ordered to be sent to the late Dr. MacKenzie's family.

Morningfield Hospital, Aberdeen.

The annual general meeting of the managers and subscribers was held on June 13th. The balance sheet showed a total income of £1965 5*s.* 2*d.*, and an expenditure of £2321 16*s.* 9*d.*, and an extra expenditure of £44 18*s.* for repairs. A special grant of £150 was transferred to the reserve account. The average number of patients in the hospital throughout the year was 79. The committee regretted to report a deficiency of £356 11*s.* 7*d.* on the year's accounts, the more so as the deficiencies on the last seven years had amounted to £1532, and further, that except for legacies the deficiency would have been much greater. The average cost of each patient for last year was £25 6*s.* 7*d.* The ordinary income was sufficient to maintain only 50 patients. The report was approved.

Dundee Royal Infirmary: Annual Meeting.

The annual meeting of the Dundee Royal Infirmary was held on June 12th. Income amounted to £13,372 17*s.* 1*d.*, an increase of £82 over last year. The principal item of increase was in collections from mills, factories, and works, which exceeded last year by £267. The greater part of that amount arose from Mr. J. K. Caird having contributed sums equal in amount to the collections of his workers at Ashton works and Craigie works for the years 1909–10 and 1910–11, the former having been received too late for inclusion in last year's accounts. The ordinary expenditure amounted to £16,445 17*s.* 3*d.*, an increase of £385 17*s.* 6*d.* over last year. The extraordinary expenditure amounted to £1653 2*s.* 4*d.*, leaving a total deficit of £4726 2*s.* 6*d.* The chairman said the directors had agreed to the continuation for another year of their agreement with the directors of the Royal Asylum relating to the admission and treatment of certain nervous disorders. The Sidlaw Sanatorium had at present 13 adult patients and 28 children. The new out-patient department of the infirmary, to which Mr. Caird contributed a gift of £2400, was opened last month, and was found convenient for the work. The number of in-patients treated in the infirmary during the year was 4098, as against 4038 during the previous year. In the maternity department there had been 370 in-patients, an increase of 50 over the previous year. There were 20,230 out-patients as against last year's 19,516. Altogether there were 31,921 cases treated as against 32,340. The average cost per bed occupied was £55 2*s.* 1*d.*, which was a reduction of 13*s.* 8*d.* per bed over the previous year. Dealing with the Insurance Bill, the chairman said that apprehensions had been felt all over the country that the Bill, if passed into law in its present form, might strike a serious blow at the finances of their hospitals, which were largely maintained by voluntary subscriptions, inasmuch as employers and employed would alike be unwilling to continue their voluntary subscriptions when they were separately for the same purpose taxed by the law of the land. After reference to what has been done in the matter by the General Hospitals Association, he moved the adoption of the report, which was unanimously agreed to.

The Population of Aberdeen.

At a committee of the Aberdeen town council meeting on June 14th Professor Matthew Hay, medical officer of health, pointed out that the population of the city had increased 8 per cent., as compared with Glasgow 9 per cent., Edinburgh 4 per cent., and Dundee 2 per cent. If the population of Oldmill Poorhouse and Kingseat Asylum had been included in the population, the Census figures for the city would have been 165,184, as against Dundee 165,006.

Aberdeen University Anthropological Society.

A meeting of the Aberdeen University Anthropological

Society was held in the Anatomy Theatre, Marischal College, on June 16th, when a very interesting lecture was given by the Rev. F. G. Bowie on the inhabitants of the New Hebrides, where he has laboured for 15 years. Mr. Bowie described the various superstitious customs peculiar to the inhabitants, dealing particularly with their method of the treatment of disease, the problem of caste, and the relations existing between the inhabitants of various villages. The lecture was illustrated by a series of photographs and by numerous specimens.

June 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Visit of the King and Queen.

Two items in the programme of the forthcoming visit of Their Majesties to Ireland are of medical interest. Her Majesty the Queen has consented to visit the Coombe Lying-in Hospital and declare open the new dispensary buildings. The Collier Dispensary for the Prevention of Tuberculosis is to be opened by His Majesty the King with the Queen. Dr. J. T. Crowe, who has been medical superintendent of the Royal National Hospital for Consumption at Newcastle for some years, is to be medical officer of the dispensary, with Dr. Daniel as assistant, and Mr. W. Lombard Murphy as throat surgeon.

Meeting of the Irish Medical Association.

The annual meeting of the Irish Medical Association was held recently in Cork. The report showed that there were 425 paying members for 1910. During the year the Association, in conjunction with the Irish Committee of the British Medical Association, had taken steps to press forward the scheme for a National Medical Service. The main lines of the scheme approved are those of the Vice-Regal Commissioners' Report, with certain amendments. The main business at the meeting was, however, the discussion of the National Insurance Bill. The Association approved of the conference of delegates held on June 9th,[1] and appointed a committee, consisting of the President, Dr. Jeremiah Cotter, of Cork; the honorary secretary, Dr. A. G. Robb, of Belfast; Mr. G. U. Macnamara, of Corofin; and Dr. L. Kidd, to wait on Mr. Lloyd George and the Irish Members of Parliament. It is reported that the Chancellor of the Exchequer has left the whole matter of dealing with Irish medical men to the Irish Party, and that they are at present busily engaged in drafting a Bill, the main line being that the compulsory part is to be given over to the dispensary medical officers and the voluntary portion to be dropped. So far the party drafting this measure have not received any medical deputation. It will be interesting to see what sort of constructive Bill the hitherto most destructive critics in the House of Commons will produce. Subsequently a referendum of the whole profession in Ireland is to be procured and steps taken for the holding of a mass meeting in Dublin, at which, with the assistance of the increased information so obtained, all the medical practitioners of Ireland will have an opportunity of deciding what definite action should be adopted in what is regarded as a very grave crisis for the profession. The annual meeting was one of the largest held for many years, due, doubtless in great measure, to the interest taken in the Insurance Bill. The social functions organised by the local executive committee were a complete success. The President of the Association and Mrs. Cotter gave a luncheon to the members on the first day at St. Antony's Hall, and Professor B. C. A. Windle, President of University College, and Mrs. Windle provided afternoon tea. A large gathering attended the annual banquet at the Imperial Hotel the same night. Amongst the official guests present were the Lord Mayor of Cork, the Recorder of Cork, the City High Sheriff, and Mr. Maurice Healy, one of the Members of Parliament for the city. Whilst the medical men and their guests were dining, Mrs. Cotter provided a musical entertainment for the ladies in another part of the hotel. The following day the s.s. *America*, chartered by the local committee, conveyed a large number of the members and their ladies down the river to several of the beauty spots in the harbour, an excellent luncheon being provided. That night the Lord Mayor and Lady Mayoress held a conversazione in the City Hall. The following day the City High Sheriff, Mr. Richard Beamish, and Mrs. Beamish gave a garden party, which was largely attended. The beautiful grounds were admirably suited for this very enjoyable entertainment, which proved a fitting *finale* to what on all hands was regarded as a most successful meeting.

[1] See THE LANCET, June 17th, p. 1677.

The Royal Hospital for Incurables, Dublin.

There is warm discussion over the proposal of the Royal Hospital for Incurables to increase its accommodation for tuberculous patients. At present there are only 40 beds for such cases, and it is intended to increase the number to 100 by the erection of a new pavilion in the hospital grounds. The hospital is situated in the suburbs of Dublin in some 15 acres of ground. Outside the unions, and a few beds in the Hospital for the Dying and in the Rest for the Dying, the hospital affords the only shelter in Dublin to persons incurably ill of tuberculosis. Unfortunately, the property owners and householders in the neighbourhood of the hospital have become alarmed at the danger of infection, and threaten legal proceedings to prevent the governors of the hospital carrying out their plans. This opposition would hardly have been taken seriously had not the Royal College of Physicians introduced, and passed, a resolution condemning the proposal of the hospital, not merely on the ground of the danger to the health of the district, but also because it "would be against the best interests of the unfortunate subjects who would be admitted." This resolution has naturally come in for severe criticism, as the only alternative for unfortunate persons suffering from tuberculosis is to die in their homes, where they are an infinitely greater danger to the public health than they would be in a properly conducted institution.

Royal Institute of Public Health.

Lord and Lady Aberdeen will attend the opening of the Congress, when the Lord Lieutenant, as patron, will instal Lord Dunleath as President. In addition to the various papers which will be read the following important subjects have been arranged for discussion in the different sections and conferences at the congress to be held in Dublin in August:—

Section A.—Preventive Medicine:—Subjects to be discussed: (1) Vaccination; (2) Aerial Convection of Diseases; (3) Effects of the Insurance Bill on Public Health.

Section B.—Chemistry and Bacteriology:—Subject to be discussed: (1) Typhoid carriers.

Section C.—Child Study and Eugenics:—Subjects to be discussed: (1) Open-air Schools; (2) Sanitary Condition of Schools in Ireland; (3) Medical Inspection of Schools.

Section D.—Comparative Pathology and Veterinary Hygiene:—Subject to be discussed: (1) Diseases Transmissible from Animals to Man.

Section E.—Engineering and Architecture:—Subjects to be discussed: (1) Tar-bound Macadam; (2) Disposal of House and Trade Refuse; (3) Treatment of Sewage, Effluent and Sludge Deposit.

Section F.—Housing of the Working Classes, Town-Planning, &c.:—Subjects to be discussed: (1) Discussion on the Operation of the Housing of the Working Classes Act and the Labourers Dwelling Act in Ireland; (2) Discussion on the Problem of Providing Dwellings for Workers in Dublin; (3) Principles of Town-Planning.

Section G.—Municipal and Parliamentary:—Subjects to be discussed: (1) The Limitation of Non-notifiable Infectious Diseases: (2) The Day Industrial Schools.

Section H.—Vital Statistics:—Subject to be discussed: (1) The Vital Statistics in Dublin. (Paper by Sir C. A. Cameron, C.B.)

Conference of Medical Officers of Health and Port Sanitary Authorities:—Subject to be discussed: (1) The Administration of the Public Health Act in Ireland as it affects Medical Officers of Health in Ireland.

Conference of Sanitary Inspectors:—Subject to be discussed: (1) Necessary Amendment to the Public Health Acts.

The Death of Sir George P. O'Farrell.

General regret is expressed at the death of Sir George Plunkett O'Farrell who recently retired from the post of Inspector of Lunatics in Ireland.

Expenditure on the Belfast District Asylum.

At a conference held recently in Belfast in connexion with the Charity Organisation Society, in which the work of the Belfast Branch of the Women's National Health Association of Ireland was brought forward in reference to tuberculosis, hygiene of schools, and infantile mortality, Professor J. A. Lindsay referred to the state of the primary school buildings, and said that in Belfast they devoted more attention to the sanitary condition of dairies, cowsheds, and even piggeries than they did to the sanitary condition of their primary schools. He sometimes thought that if he received a

visit from an inhabitant of another planet he would first take him to their magnificent asylum at Purdysburn and then to some of their primary schools. He thought his visitor would ask with amazement how they came to lodge their lunatics in palaces and to teach their children very often in hovels. There can be no doubt but that Professor Lindsay only expressed what is in everybody's mind who has a knowledge of public health, that it is time to call a halt to the tremendous expenditure of money in the magnificent villas at Purdysburn Asylum, where the results are, after all, naturally so poor, and to spend more of the public money in improving the hygiene of the schools and in trying to lower the high infantile mortality of Belfast, which was actually 143 per 1000 in 1910, while in London it did not exceed 103.

Royal Victoria Hospital, Belfast.

Dr. Thomas Houston has been appointed assistant physician in charge of the hæmatology and vaccine-therapy department, and Dr. J. C. Rankin, assistant physician for the X ray department. Dr. V. G. L. Fielden has been appointed anæsthetist, his position ranking with that of assistant physician or surgeon.—Hospital Saturday has realised already £925, and when completed it is expected that the sum will amount to £1000.—After paying expenses, £403 4*s.* were realised by allowing people to view the great ship in Belfast —the *Olympic*, and the sum was divided as follows: Royal Victoria Hospital, £151 12*s.*; the Mater Infirmorum Hospital, £75 16*s.*; the Queen-street Children's Hospital, £75 16*s.*; and the Ulster Hospital for Women and Children, £100.

Ulster Medical Society.

Dr. H. L. McKisack has been elected President; Dr. J. C. Rankin, secretary; Dr. John Rusk, treasurer; and Dr. W. L. Storey, librarian, for the session 1911–12.

Prevalence of Diphtheria in Belfast.

Diphtheria has practically been epidemic in Belfast for fully a year. During the past fortnight a local outbreak has occurred in the neighbourhood of Fortwilliam Park, one of the best residential quarters of the city. Sixteen cases have been sent to hospital.

The Antrim Infirmary.

At the last monthly meeting of this institution a resolution was unanimously adopted:—

That this meeting having considered the National Insurance Bill, now before the House of Commons, is of opinion that provision should be made in the Bill for payment to be made to the hospitals in respect of all insured persons receiving treatment, whether as in- or out-patients.

June 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Assassination of the Head Surgeon at the Hôtel Dieu.

Dr. Guinard, surgeon of the Hôtel Dieu at Paris, has been assassinated in the court of his hospital by one of his former patients, a Spanish journeyman tailor named Herrero, who fired five times upon him with a revolver. Dr. Guinard was carried immediately to the operating theatre and underwent the operation of laparotomy at the hands of his colleagues. One bullet was found to have penetrated the right kidney and perforated the intestine in eight places. Another had wounded the urethra and the prostate. After a long agony of eight days, during which his mind remained clear and consciousness was complete, the end came. As Dr. Guinard's death happened not only in the exercise of his office, but by reason of his office, the funeral was given by the municipality of Paris. The ceremony took place in the cathedral of Notre Dame, which became the scene of an imposing medical demonstration. A monument to Dr. Guinard will eventually be erected in the Hôtel Dieu. Among the funeral orations that of Dr. Segond produced a great impression. He spoke as the representative of the Société de Chirurgie, and did not hesitate to lay the responsibility for the crime on the mental attitude assumed by the public, from whose point of view the surgeon is a man who makes enormous sums of money and has only one aim—that of performing the largest possible number of operations. On the day of the death a political journal made the statement that the hospital surgeon does not take sufficient precautions with the poor people whom chance brings under his notice in his service, adding that the patients, though theoretically free to refuse a proposed operation, find themselves practically obliged to accept it, since in the case of refusal the only alternative is immediate dismissal. Under these conditions it is comprehensible, thinks the lay journal, that if the operation renders the subject infirm and unable to earn his livelihood, rage and a desire for revenge should spring up in the minds of neurotic subjects prone to melancholia and ideas of persecution. The circumstances which impelled the assassin to the commission of the crime are the subject of much comment at present among both the public and the medical profession. Before the magistrate who interrogated him the assassin declares that he had revenged himself on Dr. Guinard, who had maimed him for the rest of his life. Two years previously he had consulted Dr. Guinard for a fistula which had followed a large ischio-rectal abscess. Dr. Guinard laid open the fistula with the thermo-cautery. The patient was forewarned that temporary incontinence of the sphincter ani would be the consequence. As a matter of fact the incontinence did ensue, but did not prove temporary. The patient returned from time to time to complain to Dr. Guinard and consulted surgeons in other Paris hospitals. He asserts that Dr. Guinard put him off with irony and accused him of unmentionable habits. He declares also that in one of the hospitals which he visited an assistant assured him that his condition was caused entirely by a badly executed operation. The medical journals comment freely on these statements, of which the first is highly inconsistent with the gentle and kindly nature of Dr. Guinard, and the second, if exact, gives an added proof of the danger of imprudent explanations offered to patients by young and presumptuous students too ready to fail in respect to their former chiefs. Another incitement to such criminal acts is to be found in the idea that exists not unnaturally in the mind of the public (as a consequence of the new social laws which give a right to indemnity for whatever accident may occur) that for every misadventure which may happen to them some person or persons are necessarily responsible. It will soon be the case that if a person fractures his leg through slipping on a piece of orange-peel in the street he will sue the head of the street cleaning department. The magistrates who have awarded damages to patients on the ground that their medical attendant had failed to cure them have prepared the way for the criminal outrage of which an excellent surgeon has been the victim, a man whose great kindness and high character seemed to place him, even more than most, above such shafts of fortune. Dr. Guinard was the author of notable works on surgery of the abdomen and of the thorax and on cancer.

Disease and Mortality in the Army.

In the course of the discussion before the Senate on the War Budget, M. Richard Waddington remarked that disease among the soldiers was on the increase, a disconcerting statement in view of the continually increasing sacrifices offered in propitiation of the goddess Hygeia. It is true that in the last ten years mortality in the French army has been regularly diminishing. But its sum (4·26 per 1000) is still higher than that of Prussia (1·31), Hungary (2·82), and Italy (3·28). With regard to the morbidity returns, calculating from the number of soldiers entering the military hospital, it was in 1902 600 per 1000. At the present time it has reached 740 per 1000. The discussion which took place before the Senate on this subject shed a light on the many differing causes of this increase in the hospital admissions. There is, first, the dictates of humanity, whereby the rule for French soldiers is becoming more and more gentle through the growing influence on Parliament of sentiments of compassion for the humbler classes. Military doctors, exposed to attacks in the newspapers and complaints made in Parliament by the deputies of the Opposition, now much oftener than formerly admit soldiers desirous of entering the hospital for rest. A more serious reason is one to which attention has been directed by several senators; the diminution in the birth-rate in France, by limiting the choice of possible recruits for the army while the same numerical strength is to be maintained, renders it necessary to accept men of inferior physique, who in former days would have been rejected and who eventually constitute a large percentage of the hospital admissions. For an almost

identical total of men "*les conseils de révision*" in France have only 350,000 men to examine, while in Germany there are 1,200,000 to choose from, so that France has to enlist 70 per cent. of its contingent, Germany only 30 per cent., which gives that Power the chance of accepting only the robust. Lastly must be added the law which fixes the period of military service at two years instead of three years; a soldier's instruction compressed into two years instead of three becomes much more fatiguing and is more likely to produce exhaustion and illness. The report ends with a declaration which confirms the views expressed a long time ago by M. Delorme, inspector-general, to the effect that the morbidity of soldiers in a garrison town is influenced by the morbidity of the civil population of the town, with whom the soldiers are in frequent contact in restaurants, cafés, theatres, and hotels, while attempts to improve the state of the barracks and to supply pure water are almost nugatory if the town is unhealthy and the soldiers drink contaminated water in the cafés. The conclusion is that permission to quarter troops in towns where hygienic precautions are not taken must be absolutely refused. But such a measure will be extremely difficult to enforce, for the destination of regiments, which are a source of prosperity to the town shopkeepers, is generally dictated by political reasons.

June 26th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Sea Air in the Treatment of Pertussis.

AT a recent meeting of the Budapest Royal Society of Medicine Dr. Szegö read a paper on Sea Air in the Treatment of Pertussis. He said that although there was still some diversity of opinion as to the specific cause of this disease, it was generally considered to be of an infectious nature, and accordingly in its treatment recourse should be had to the measures advised in virulent and contagious diseases as a class; the principal points to be observed being isolation of the patients, free ventilation and disinfection of their apartments, and sterilisation of clothing and other articles used by them. As to microbicide remedies, few of these were of any real service in pertussis, and those which have done such excellent service in surgical practice were not available in constitutional diseases. Inhalations of ozone have proved of much benefit in the hospital treatment of pertussis by Dr. Schiff, who attributed the favourable influence of this procedure to the antispasmodic properties of ozone. Dr. Szegö, however, believed ozone to be antiseptic as well and a true germicide in broncho-pulmonary affections. Sea air was known to be rich in ozone, an atmospheric condition which, in his opinion, accounted for the benefit derived from a sojourn at the seaside in the treatment of pertussis.

Chloride of Ethyl as a General Anæsthetic.

Dr. Manninger has published in the May number of the *Orvosok Lapja* an article recommending chloride of ethyl as a general anæsthetic in certain cases. He has found that this substance, which is also known as kelene, produces anæsthesia easily and rapidly, and is, moreover, free from the discomforts and dangers of chloroform and ether. It is procurable in tubes of known capacity containing from 25 to 50 cubic centimetres, a method permitting an exact knowledge of the amount used, which should not, as a rule, exceed 25 cubic centimetres (about six-sevenths of a fluid ounce). It may be given on a compress, usually in quantities of 5 cubic centimetres at a time (2 to 3 cubic centimetres for children and 6 to 10 cubic centimetres for alcoholic patients), and this dose may be repeated at intervals of five minutes during the operation, to the limit of 25 cubic centimetres. It will thus be seen that this anæsthetic is best adapted for short operations, though it may be advantageously employed in longer operations as a preliminary to chloroform or ether. By this means the discomforts and the dangers incidental to the inhalation of chloroform and ether are avoided, and a smaller quantity of the latter drugs may be used. Analgesia is produced by one or two inhalations of kelene, provided that these are sufficiently deep and that atmospheric air has not been directly inhaled; complete anæsthesia, which generally ensues in three minutes, is indicated by muscular relaxation and sometimes by dilatation of the pupils and by abolition of the corneal reflex. Anæsthesia continues for three minutes after inhalation of 5 cubic centimetres of kelene, when the dose must be repeated if the anæsthesia is to be prolonged, but complete analgesia persists for from 15 to 20 minutes after withdrawal of the drug, the patient regaining consciousness but suffering no pain during the completion of the operation, should it be deemed expedient to continue the work in this condition. Not the least of the advantages claimed for kelene anæsthesia is the absence of excitement in ordinary cases, though a slight excitement—not in the least comparable to that produced by other anæsthetics—is seen in hysterical and alcoholic subjects and when there has been direct inhalation of atmospheric air. Both the pulse and the respiration are normal in kelene anæsthesia. As a rule, there is no vomiting when the patient regains consciousness and no ill-effects are felt. An objection to kelene as a general anæsthetic is that it occasionally fails to produce the complete muscular relaxation essential to the performance of certain operations, such as reduction of dislocations, in which event the operator must hold himself in readiness to continue the work with another anæsthetic. The rapidity with which the patient recovers from the anæsthesia necessitates repeated doses during the operation, and as the amount given should not exceed 25 cubic centimetres kelene is unsuitable as the sole anæsthetic for use during long operations. Dr. Manninger, however, considers that at the commencement of long operations it is useful as a preliminary to the administration of chloroform or ether.

June 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"*Father Tiber Salutes Father Thames.*"

THE coronation of King George V. and Queen Mary, at which the whole world, far and near, has assisted, found no nationality more cordially interested than Italy, sincere as she has ever been in her admiration of British institutions, profiting as she has not failed to do by British precedent, and grateful as she will always remain for British participation in her "Risorgimento," promoted as that was by British sympathy as effective as it was unselfish, and by British support as unobtrusive as it was opportune. In all her great centres of population she was worthily represented at the symposia held on June 22nd by the English-speaking colony, joining enthusiastically in the "toast of the evening" and supplementing the official oratory by eloquent contributions of her own. At more than one of these the reciprocal indebtedness of the two peoples in the domain of science was pointedly referred to—British medicine, for instance, in its later development repaying what it owed to Italian in the post-Renaissance Universities of Padua, Bologna, and Pisa. The first-named of these schools has no prouder boast than that of having inspired the English William Harvey; and if her consummate anatomist and teacher, Giulio Casserio, earned the gratitude of relays of students from every European nationality, that gratitude found no finer expression than in the epigrams of the Scottish Arthur Johnston, body physician to King Charles I., to whom the famous "Anatomica Sectio à Julio Casserio Patavii Exhibita" owes an immortality only to cease with the Latin tongue.

Dr. Augusto Murri.

In this connexion it is opportune to mention that the illustrious head of the clinical staff of the Bologna school, Professor Augusto Murri, known to readers of THE LANCET more particularly for his contributions on the pathology of the brain, has not suffered seriously from the terrible railway accident which on June 20th caused three deaths out of the 33 passengers who were more or less injured. The scene of the disaster was San Benedetto del Tronto, a station on the Adriatic seaboard, some 30 miles south of Ancona, and Professor Murri was in the train *en route* to Teramo, to which he had been summoned in consultation. Providentially he was in a first-class compartment which

seems to have suffered but partially from the collision, and beyond a superficial lesion and the inevitable "shock" he was so little the worse as to be able to despatch a reassuring telegram to his wife and to give some assistance to his less fortunate fellow passengers. The latest accounts from Bologna represent his condition as "satisfactory," though his years (more than three score and ten), added to domestic trials fresh in the mind of the public, still warrant anxiety on the part of his many friends and pupils.

St. Andrews University and the Vatican.

Scotland's "Mater Studiorum," which is to celebrate her 500th birthday next September, is another British institution in which Italians are interested, if only for the fact that, like Glasgow and Aberdeen, it started under the ægis of the Holy See, which will be officially represented at the celebration in question. The current number of the *Vox Urbis*, a monthly periodical in the Latin language, published with the approval of the Vatican, contains an article, "De Urbe Sancti Andreae ejusque Studiorum Universitate," which will gratify the many graduates, medical and other, of that seat of learning, for its accurate historical details and its glowing eulogy of the town and its school. Four effective illustrations representing the ruined cathedral, the remains of the castle, and the United Colleges of SS. Salvator and Leonard and of S. Mary, supplement the letterpress, which, while highly creditable to the scholarly priest who contributes it, does little more than indicate the "Royal and ancient game" of which St. Andrews used to be called the Mecca. Even the flowing and flexible Latinity of S. Jerome may be excused for not venturing beyond an allusion to the "pera clavicularum" (golf-bag). The writer, however, might have found a more classical equivalent for "Dundaeum" in alluding to the College of Dundee. "Taodunense" (derived from the "dun" or hill on the Taus or Tay) would have had the sanction at least of George Buchanan and also of that distinguished physician and Latin poet, Dr. Archibald Pitcairne.

June 24th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Census in South Africa.

THE Census in South Africa was taken on May 7th. It is to be regretted that it was not taken on the same day as in the other overseas dominions and in the mother country. The explanation officially given is that owing to the inauguration of Union the Government was unable to make the necessary arrangements for it to be taken earlier, although it is understood that much of the preliminary work had been done prior to Union. The Census was taken under the directorship of Mr. J. B. Moffat, Commissioner of Taxes for the late Cape Colony. The post was originally offered to Dr. A. J. Gregory, the medical officer of health for the late Cape Colony, immediately after Union, but was declined by that officer in the absence of some assurance from the Government as to his official future in public health under Union. From a statistical standpoint it is unfortunate that Dr. Gregory was unable to see his way to accept the appointment, for his prolonged experience in such work and his special statistical attainments clearly marked him out as the one man in South Africa especially fitted for it. From a public health standpoint, however, the profession and the public are thankful that Dr. Gregory did not take up the directorship of the Census, for had he done so he would have been shelved from public health work, and it is generally recognised that at the present critical juncture in the history of public health administration in South Africa he could not well be spared. Dr. G. Pratt Yule, the medical officer of health for the late Orange River Colony, acted as supervisor of the Census for his province, but now that the actual Census is taken it is understood he will not be required to assist further. Indeed, as far as is known, Mr. Moffat is not to be assisted further by any medical expert, and if this is true his report is hardly likely to be of the value to public health workers in South Africa that might otherwise have been expected. At the time of writing a few of the returns for individual towns have been published, and indicate the enormous difficulties that health officers are faced with in South Africa in attempting to furnish vital statistics for their areas in inter-census years owing to the effects of emigration and immigration. Thus the returns for East London show that the total population of the municipality is 21,777, of which number 12,552 are Europeans and 8725 non-Europeans, a decrease on the previous Census taken in 1904 of 2122 Europeans and 1821 non-Europeans. The total population for the whole division, urban and rural, is 47,697, comprising 18,179 Europeans and 29,518 non-Europeans, a decrease on the previous Census of 1614 Europeans and 410 non-Europeans. Still more striking are the statistics for Cape Town and other municipalities in the Cape Peninsula. In Cape Town there are 29,933 Europeans and 37,237 non-Europeans, or a total of 67,170 persons, as compared with 44,203 Europeans and 33,465 non-Europeans, or a total of 77,668 persons in 1904. In the suburbs of Cape Town, also, there has been a great reduction in the number of Europeans and a slight increase in the number of coloured inhabitants. Indeed, judging from the figures already published, it would seem likely that there is a large reduction in the European populations of all the coastal towns, and also of most urban centres, not depending on the mining industry—doubtless due to the period of financial depression from which South Africa is only now slowly emerging.

Medical Council Muddle.

It will be remembered that some time ago the majority of the members of the Free State Medical Council resigned as a protest against aspersions cast on that body by General Hertzog. The sequel has been somewhat amusing. It appears that up to the middle of April the Government had taken no steps to fill the vacancies, but that the secretary had received instructions from the Minister to register, although quite illegally, any applicant for registration whose qualifications would otherwise entitle him to registration in accordance with the laws of the province. Four gentlemen were, however, eventually appointed as Government nominees, none of the former nominees being reappointed. These with two representatives of the old council who did not resign form a quorum. Another three months had to elapse before an election could be held to fill the vacancies caused by the resignation of certain elected members of the council. In compliance with a request from the permanent head of General Smuts's department that a meeting should be called as soon as possible to deal with pressing business, including the approving formally of the registrations effected by the secretary in the interim, members assembled on April 28th. But after debating the matter for about an hour it was discovered that the meeting had been illegally convened, and that consequently no business could be transacted thereat. Under the regulations of the council it appears that only the president can call together the members on any other day than that fixed by the regulations, which is the second Friday in the month, and so there was nothing for it but to dissolve the meeting until the following month, when the council confirmed the registrations unlawfully effected by its secretary.

June 3rd.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Professor Bernhard Fränkel, who has charge of the Clinic and Policlinic for Diseases of the Throat and Nose intends to retire at the close of the current summer session being in his seventy-fifth year.—*Florence:* Dr. Antoni Pellegrini has been recognised as *privat-docent* of Operativ Medicine.—*Leipsic:* Dr. Payr, professor in the University o Königsberg, has been appointed to the chair of Surgery vacated by the death of Professor Trendelenburg.—*Modena* Dr. G. Tarozzi, professor in Cagliari, has been appointe to the chair of Pathological Anatomy and Histology.—*Parma:* Dr. Giorgio Ballerini has been recognised as *priva docent* of Midwifery and Gynæcology.—*Turin:* Dr. Saver Verson of Pavia has been recognised as *privat-docent* of Hi tology.—*St. Petersburg (Women's Institute of Medicine):* D A. Rubel has been recognised as *privat-docent* of Medicine.—*Vienna:* Dr. Otto von Frisch has been recognised as *priva docent* of Surgery, Dr. Robert Cristoph Peroletti as *priva docent* of Midwifery and Gynæcology, Dr. Bertold Spitz as *privat-docent* of Odontology, and Dr. Robert Stigler *privat-docent* of Physiology.

Obituary.

SIR RUBERT WILLIAM BOYCE, M.B. LOND., F.R.S.,

HOLT PROFESSOR OF PATHOLOGY, UNIVERSITY OF LIVERPOOL; DEAN OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

IN our issue of last week we briefly announced the death of Sir Rubert Boyce on June 16th after a short illness. Rubert William Boyce came of Irish stock. His father, the late R. H. Boyce, C.B., was principal surveyor of buildings in the Consular Service, and both his grandfathers were country practitioners of medicine in Ireland. He studied at University College, London, Heidelberg, and Paris, and qualified in 1888 as L.R.C.P. Lond., M.R.C.S. Eng., obtaining the M.B. degree of the University of London in the following year. Whilst working at University College, London, he showed considerable powers of scientific investigation, and in the early "nineties" he published various papers on the pathology of the nervous system, which earned for him the Fellowship of the Royal Society. During this time he also wrote a "Text-book of Morbid Histology," and was part author of "A Handbook of Pathological Anatomy (Museum Pathology)." In 1894 he was appointed to the newly created George Holt chair of pathology in the University College of Liverpool, and thenceforward became intimately associated with that city.

"The new post gave him an opportunity to show that, besides possessing scientific attainments of a high order, he had a great talent for organisation. This was displayed at first in general work for University College, and for the separate University of Liverpool into which that College was shortly elevated. Later he became, with his colleague, Sir Ronald Ross, especially identified with the Liverpool School of Tropical Medicine, of which he was the twin founder with Sir Alfred Jones. He served personally on expeditions of the school on many occasions. He went to Egypt and inspected the result of Sir Ronald Ross's and Dr. Pressat's successful work in Ismailia, which is now comparatively free from malaria. With the consent of the American Government he investigated a serious outbreak of yellow fever at New Orleans. Again, at the special request of the Colonial Office, he visited British Honduras, and drew up an exhaustive report of sanitary conditions there and of prophylactic measures against the dangers of yellow fever. He also visited Central America, and in later years he made tours of the West Indies and West Africa. He was indeed absorbed in tropical research.

The following appreciation of Sir Rubert Boyce is written by one of his oldest and most intimate friends, Professor J. M. Mackay:—"The news of the premature death of Sir Rubert W. Boyce will come like a shock to many, not only in our own country, but also in the tropical and adjacent regions of the Empire, and indeed in scientific and medical circles everywhere. The foundation of the Liverpool School of Tropical Medicine is an event which reaches beyond the annals of medicine. It is the dawn of a new era and a new hope for the tropical world. The development of those countries, the security of life for the European planter, trader, missionary, and administrator, as well as for the native, appear to be staked upon the success of such researches as this Liverpool institution first organised and promoted. The vast issues were clear to the mind of the extraordinary man who devoted his genius and life to this enterprise. Entirely Irish by origin, the son of a well-known public servant, an architect in China, educated himself for a short time at Rugby, afterwards in France, he acquired an education very little on the beaten lines. It was when at work with Sir Victor Horsley in the laboratories in University College, London, that he began to show promise of his real powers. His early scientific work was noted by those who had eyes to discern. His appointment to the new chair of pathology at Liverpool gave him his opportunity and sphere. Everything there on the high educational ground was in the origins and in the making. Boyce had youth, exhaustless, boundless energy, indomitable persistence, and a clear and daring vision. Besides, upon no experience whatever, he found he had the practical gifts as well. He learned to handle men, and in particular what is almost impossible for the ordinary academic spirit, he grew into intimate, easy, and friendly relations with men of business of every sort. Seizing upon the form of certain schools already established in Liverpool, whereby the city and University coöperate through representatives of the corporation, the academic staff, and governing body, or of others interested by professional sympathy, he created first the School of Hygiene for the training in public health on all points, human and animal. It was the natural expansion of his chair of pathology into the actual world. He soon had municipal pathological work inside the university pathological department also. The chief danger in a provincial city is the multiplication in a hurry, and with a waste of money, of feeble organs here and there, instead of installing concentrated and powerful spiritual batteries. Of course, this was in due time accomplished in the University. It was the creation, however, of the Tropical School which swept open for Boyce a boundless prospect. Here he had associated with him Sir Alfred Jones, a shipowner trading with West Africa, who was himself only emerging at the time, but as Boyce used to say, 'Alfred Jones is a poet.' Boyce's tributes to Sir Alfred Jones living and dead were constant and unstinted, and the union of science and practice on great imaginative lines had remarkable results. The annual income of the Liverpool School of Tropical Medicine now amounts to some £8000, besides the fully endowed chair of tropical medicine, the gift of Sir Alfred Jones.

"The appointment of Professor Ronald Ross to the chair was yet another stroke of genius, for Ross was not yet fully recognised. To carry forward their work the money had to be obtained. In a country where there are little or no public subventions the only course open is the familiar way of all the public charities. Boyce's success as a beggar was marvellous, and he conducted his campaign with shrewd and infinite humour. It became a game where none was more amused than the wealthy and generous man who meant to be close and found he had subscribed handsomely. The two promoters of the school believed in a wide subscription-list as indicative of sound general health and public interest. Scientific expeditions were constant, and a programme which had started with the one item of malarial fever soon included all tropical medicine. Boyce visited in due time New Orleans, upon an outbreak of yellow fever there, British Honduras, West Indian Isles, British Guiana, and West Africa. These were successful missions, for besides his scientific and special interests nothing human or natural was unwelcome to him. He met on these tours minds of every shade, and his own judgments, which he revised upon the pressure of new material, became vivid and instructive. His success, scientific and financial, at the Colonial Office and with Governors and officials was remarkable. The story of these distant visits and missions, and the conclusions which he thought ought to be drawn, have been published in three recent works, in addition to all the bulletins regularly published from the school, while his signal achievements in the Liverpool laboratories are well known. The network of his propaganda was wide-flung and close-meshed. The Liverpool school became a pattern, an inspiration, and a source of light for many lands and workers. It is the most famous intellectual achievement in the city.

"Meanwhile he was in the forefront of another great educational movement—the establishment of an independent University in Liverpool on advanced and varied lines—and spent probably his happiest public hours amid a small band of colleagues and friends at the University Club. The club became a centre for such as cared to share in the University movement or to promote any high educational advance. It started on next to nothing. Boyce's practical gifts here, even to the house furnishing, were invaluable. His manifold enterprises had inevitably roused opposition, but here he was at home among friends and allies. His personal influence and the confidence he inspired attracted sympathetic citizens of all parties and creeds into membership with communion and coöperation. The University of Liverpool in a few years was launched from this dock. About this time a great shadow darkened his life, for he lost his wife, who died after the birth of her first child and with whom he had lived most happily. To commemorate her life her father, a local shipowner, by a magnificent gift to the University, provided new laboratories, which became the home of the Tropical School, and founded a new chair of bio-chemistry, the first in this country. Here was another instance of Boyce's keen vision which went to the heart of the last results of contemporary

foreign medicine. Developments no less striking followed at Liverpool, such as an Institute for Cancer Research, and an Institution of Tropical Research in regard to trade and industry and agriculture. This last splendid conception was doomed, it might be said, in advance, owing to the lack of trained investigators, but in all the movements Boyce played a leading part. Our university system of daily prescribed doses, and repeated examinations upon them, does not breed often men of this quality.

"In figure Boyce was fair, small, light, and active. During the brief tenure of his life in Liverpool, some 15 years in all, and only nine in full health, he had as his home a delightfnl nook near to one of the great public parks. There he entertained with wide hospitality visitors from many cities, countries, and climes. After a paralytic stroke six years ago—which shattered his health, temper, and balance—he recovered very gradually, and as he grew better he devoted himself wholly to the study of the tropics. It was the passion of his life. His end was sudden and peaceful. Only the day before he was entertaining a West African magistrate, originally a medical man like himself, and two of his old colleagues and close friends. His vivacity and intellectual sympathies, his opinions on nature and man, his criticism of antiquated and futile methods, whether on the Coast or in the universities, were as fresh, searching, piquant, and independent as before. It was the dying flicker. The simplest record of his life, the barest account of his solid achievements, will perpetuate the memory of a rare and extraordinary mind."

Sir Rubert Boyce was only 48 years of age at his death, which, despite the serious breakdown alluded to by Professor Mackay and his known delicacy of health, was quite unexpected. The day before his death he was at work in the Thompson Yates laboratories with his accustomed zeal. On June 7th he was at a banquet given by Mr. W. H. Lever, the chairman of the Liverpool School of Tropical Medicine, to speed Professor Newstead on his expedition to Nyasaland and to welcome Professor J. L. Todd and Professor Wolbach home from their expedition to the Gambia and French Senegal. Sir Rubert Boyce, in responding to the toast of "Tropical Medicine and Commerce," then expressed the hope that soon the dream of the late Sir Alfred Jones would be realised in the establishment of a chair of parasitology at the University of Liverpool in memory of the late Dr. Walter Myers. His last public utterance, therefore, was fittingly in support of the cause for which he lived and died.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ernst Julius Remak, privy councillor and extraordinary professor of neurology in the University of Berlin. He had been Westphal's assistant in the Charité in the "seventies." His contributions to medical literature were mostly connected with electro-therapeutics. He was nearly 62 years of age, and he died in a nursing home in Wiesbaden. His name reminds us of that of his illustrious father, Dr. Robert Remak, the anatomist, who was the first Jew who was admitted to the teaching staff of the Berlin University, a special decree being granted by King Frederick William IV. for the purpose.—Dr. Ludwig Kerschner, professor of histology and embryology in the University of Innsbruck.—Dr. Adolf Schmidtmann, curator of the University of Marburg and for many years a very prominent and active government sanitary councillor. His special work was mainly that of superintending the water-supply and drainage of the city.—Dr. A. Valentin, honorary professor of laryngology and otology in the University of Berne, aged 65.—Dr. Stanford E. Chaillé, professor of physiology and pathological anatomy in Tulane University of Louisiana, New Orleans.—Dr. Maurice Claudot, formerly Inspector-General in the French Military Medical Service.—Dr. A. Guinard, surgeon to the Paris hospitals.

PROPOSED NEW COTTAGE HOSPITAL FOR AXMINSTER (DEVON).—It is proposed to erect a new cottage hospital for Axminster, as the old institution is not up to modern requirements. The sum of £1830 has been already received towards the building fund, and it is hoped that the work will shortly be commenced.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. H. Budd (Section II.), St. Mary's Hospital; R. F. Eminson (Sections I. and II.), Charing Cross Hospital; and A. A. E. Newth (Sections I. and II.), Westminster Hospital.
Medicine.—N. S. Adler (Section I.), Berlin; L. K. Edmeades (Section I.), Guy's Hospital; R. F. Eminson (Sections I. and II.), Charing Cross Hospital; C. C. Messiter (Sections I. and II.), St. Bartholomew's Hospital; A. A. E. Newth (Sections I. and II.), Westminster Hospital; and G. H. Varley (Sections I. and II.), Oxford and St. George's Hospital.
Forensic Medicine.—R. F. Eminson, Charing Cross Hospital; C. C. Messiter, St. Bartholomew's Hospital; and A. A. E. Newth, Westminster Hospital.
Midwifery.—H. Cox, Birmingham; R. F. Eminson, Charing Cross Hospital; A. A. E. Newth, Westminster Hospital; and J. E. Taylor, Leeds.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery:—H. H. Budd, R. F. Eminson, A. A. E. Newth, and G. H. Varley.

UNIVERSITY OF OXFORD.—Dr. C. Theodore Williams, honorary Fellow of Pembroke College, has offered to the University a sum of £2500 upon trust to apply the income to the encouragement of the study of pathology and bacteriology in relation to medicine. It is proposed to found two scholarships, each tenable for two years. A decree has been introduced in Convocation gratefully thanking the donor.

DONATIONS AND BEQUESTS.—Under the will of the late Miss Anna Thorne Harris of Plymouth the South Devon and East Cornwall Hospital at Plymouth will receive £2000, the South Devon and Cornwall Institution for the Blind at Plymouth £1000, and the Plymouth Royal Eye Infirmary and the Plymouth Public Dispensary £500 each.—Miss Burrell of Botley, Hants, has undertaken to defray the cost of building a new out-patient department for the Royal South Hants and Southampton Hospital at a cost of more than £10,000.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The seventieth annual meeting of this association will be held on Thursday and Friday, July 13th and 14th, in Dublin, under the presidency of Dr. William R. Dawson. On Wednesday members will be given an opportunity of inspecting the Richmond Asylum, St. Patrick's Hospital, and the Stewart Institution. The annual meeting will commence at 11 A.M. on Thursday at the Royal College of Physicians, and the presidential address will be delivered after luncheon. The following papers will then be read:—Dr. G. M. Robertson (Morningside), Treatment of General Paralysis, with a view to Cure; Dr. W. Graham (Belfast), Psycho-therapy in Mental Disorders; Dr. M. J. Collins (Ewell Colony) will read a paper upon Causes of Sudden Death in Epilepsy and Some Points in the Treatment of Epilepsy; Dr. R. R. Leeper (St. Patrick's Hospital), Note on Hereditary Insanity from a Practical Standpoint. At 7.30 P.M. the annual dinner will be held at the Royal College of Surgeons, St. Stephen's Green. On Friday, commencing at 9.30 A.M., at the Royal College of Physicians, the following papers will be read:—Dr. T. Drapes (Enniscorthy), the Personal Equation in Alienism; Professor A. C. O'Sullivan, F.T.C.D. (Dublin University), Case of Degeneration of the Spinal Cord, following Infection with B. pyocyaneus; Professor J. Shaw Bolton (Wakefield), Certain Observations on the Morbid Histology of General Paralysis; Dr. Colin McDowall (Cheddleton) and Dr. W. T. Sewell (Newcastle), Clinical Evidence *re* the Toxic Nature of Insanity; Professor W. H. Thompson (Dublin University), the Chemical Regulation of Neuronic Function; Dr. Edward Mapother (Long Grove), Mental Symptoms in Association with Choreiform Disorders; Dr. J. J. Fitzgerald (Cork), Trephining in Mental Diseases; Dr. Ivy Mackenzie (Glasgow), Salvarsan in Nervous Disease: with an account of its Effect in Syphilitic and Parasyphilitic Conditions. From 4.30 to 7 P.M. a garden party will be held at the Zoological Gardens, Phœnix Park; and various other social arrangements have been made by the reception committee. The honorary general secretary is Dr. C. Hubert Bond, 6, Cavendish-square, London, W.

KING EDWARD MEMORIAL HOSPITAL, EALING.—The opening of the new hospital in Mattock-lane will take place on Saturday, July 15th, at 4 P.M., when H.R.H. the Princess Christian of Schleswig-Holstein has consented to perform the ceremony. Tea and coffee will be served at 4.45. Visitors are requested to be in their places by 3.45 at the latest.

PRESENTATION TO A MEDICAL PRACTITIONER.—At Ottery St. Mary (Devon) the vicar, the Rev. J. Metcalf, on behalf of 525 subscribers, recently presented Mr. Francis Mortimer Reynolds, M.B., C.M. Edin., with a silver rose bowl and an album containing the names of the subscribers as a mark of respect and esteem on the occasion of his leaving the neighbourhood after having practised there for the past 25 years.

CHELSEA HOSPITAL FOR WOMEN.—Lord Cadogan has presented over an acre and a quarter of land to the hospital for purposes of extension. The accommodation for in-patients is at present inadequate, and it is also impossible to provide for the needs of out-patients and to house the nurses satisfactorily. The land given by Lord Cadogan is within a short distance of the present building.

MEDICO-LEGAL SOCIETY.—The annual general meeting of this society will be held at the Holborn Restaurant on Thursday, July 20th, at 6 30 P.M. The annual dinner will be held at 7.30 P.M., when the President will be in the chair. The price of tickets is 10*s.* 6*d.* each. Members intending to be present are desired to give early notice to Dr. William A. Brend or Mr. Roland Burrows, the honorary secretaries.

DEVON COUNTY ASYLUM.—At the last meeting of the Devon county council the asylum committee reported in favour of the appointment of a fifth medical officer for the County Asylum, who should also undertake the duties of pathologist and bacteriologist. It was also suggested that a laboratory should be provided. The county council adopted the report of the committee. It was stated that at present there were 1338 patients in the institution, 568 males and 770 females.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.—The next meeting of this Congress will take place on Thursday and Friday, July 13th and 14th, at Keble College, Oxford. It will be preceded by an unofficial dinner in Keble Hall on July 12th, at 7.30 P.M. Medical men when sending in their names as prospective attendants at the Congress to the honorary secretary, Mr. Sydney Stephenson, 33, Welbeck-street, London, W., should enclose the attendance fee of half-a-guinea, and should also state whether they desire rooms to be reserved for them in Keble College, the charge for board and lodging in the College being 7*s.* 6*d.* The Congress will be opened at 10 A.M. on Thursday, July 13th. Addresses will be made by Professor Arthur Thomson on the Filtration Angle, Dr. Lieven on "Salvarsan," and Major R. H. Elliot, I.M.S., on Trephining in Glaucoma. In the afternoon there will be tea in Balliol College garden, and at 7.30 P.M. the official dinner will take place in Keble Hall with Sir William Osler in the chair, followed by dessert in the Junior Common Room at Keble College. On Friday, July 13th, addresses will be delivered by Professor Francis Gotch, F.R.S., on Dark Adaptation, and Dr. Harold Low on Narcotic Drugs as Adjuvants to General Anæsthesia; and a lantern demonstration by Dr. StClair Thomson of the relationship of diseases of the nose and accessory sinuses to affections of the eye and orbit will be given. In the afternoon there will be tea at the Eye Hospital, and a visit will be made to the Clarendon Press and the Colleges, followed by dinner in Keble Hall, and a smoking concert in the Junior Common Room at Keble College. On both days there will be demonstrations in the morning in the Department of Physiology and in the afternoon at the Eye Hospital. On Thursday afternoon Dr. Lewis Ziegler (Philadelphia) will demonstrate: (1) the Treatment of Ectropion and Entropion by galvano-cautery puncture, (2) that of Lacrymo-nasal Disease by rapid dilatation, and (3) Iridodesmy with the knife-needle; and Mr. Charles Higgens (London) will perform Toti's operation of Dacryocystorhinostomy. On Friday afternoon cases treated by salvarsan will be shown by Dr. R. Granville Waddy, and Dr. Lieven will demonstrate the intravenous injection of that preparation. On Saturday, July 15th, there will be river excursions to Reading and Henley.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Coronation.

PARLIAMENT was not sitting during the period of the Coronation festivities in London last week.

National Insurance Bill.

Many amendments have been put down to the National Insurance Bill. Mr. HAROLD SMITH has put down amendments to Clause 14 in the same terms as those of Dr. ADDISON reported in THE LANCET of June 24th. Dr. ADDISON has intimated his intention of moving the insertion of the following subsection in Clause 16:—

"Notwithstanding anything herein the mother shall decide whether she shall be attended by a registered medical practitioner or by a duly certified midwife and shall have free choice in the selection of such practitioner or midwife, and in the case where a midwife requires the aid of a registered medical practitioner the Local Health Committee shall make arrangements subject to the approval of the Insurance Commissioners for the payment of such registered medical practitioner."

HOUSE OF COMMONS.

MONDAY, JUNE 19TH.

National Insurance and the Supply of Drugs.

The Marquis of TULLIBARDINE asked the Chancellor of the Exchequer whether he was aware that a per capita payment for the supply of drugs would deprive insured persons of many remedial agents; and whether, in the interests of insured persons, the Commissioners would frame a scale of prices based on the cost or market price of the commodity; and whether, in that event, insured persons would be permitted to obtain their supplies from any registered chemist accepting such a scale.—Mr. LLOYD GEORGE replied: The supply of drugs is, under the Bill, a matter for the approved societies and the Local Health Committees, who need not adopt a per capita system. The Insurance Commissioners are not specially empowered to interfere, except in so far as they must, as a condition of approving of any society, satisfy themselves that the society is providing the benefits prescribed by the Bill.

Famine Deaths in India.

Mr. GINNELL asked the Under Secretary of State for India to state the number of deaths of human beings from starvation in India in each of the last ten years and in the whole period.—Mr. MONTAGU replied: The information asked for by the honourable Member is not forthcoming from the mortality returns of British India, as they do not show "starvation" as a separate cause of death. In times of famine special efforts have been made to secure a correct record of all deaths attributable directly to want of food, but without much success. In the 1907-8 famine in the United Provinces not more than 11 deaths were thus recorded. Famine mortality is due to the consequences of insufficient food, not to entire want of it.

Plague in India.

Mr. GINNELL asked the Under Secretary of State for India how many of the 6½ millions of human beings known to have died from plague in India within the last ten years died from bubonic plague and how many from pneumonic plague; and whether the Government proposed to convene an international medical conference in India next winter to devise means of counteracting this scourge.—Mr. MONTAGU answered: The returns of plague seizures in India do not distinguish cases where the symptoms are bubonic from those that take septicæmic or pneumonic forms. But it may be said that more than 90 per cent. of the cases take the bubonic form. There is no intention of convening an international medical conference in India to deal with the question of plague prevention. The scientific problems have already been elucidated by the Joint Commission organised by the Royal Society and the Lister Institute, and the practical application of the Commission's discoveries is a matter for the Indian Government.

TUESDAY, JUNE 20TH.

Deaths from Chicken-pox.

Mr. CRAWSHAY-WILLIAMS asked the President of the Local Government Board whether any inquiry was made in cases of certified deaths from chicken-pox with a view to ascertain if such cases of deaths in children were in reality due to small-pox and not chicken-pox, as alleged by the Registrar-General in his Forty-sixth and other Reports; and whether such inquiry had confirmed the opinion generally held by medical authorities that deaths from chicken-pox were of very rare occurrence indeed.—Mr. BURNS wrote in reply: The doctor who grants a death certificate is required to state the cause of death, and, as a general rule, no inquiry is made to check the correctness of his statement. When small-pox is prevalent in a district, chicken-pox is frequently added to the list of notifiable diseases with the object of discovering whether any cases supposed to be chicken-pox are really small-pox. In such cases it would rest with the medical officer of health of the district to make such inquiries in regard to any deaths certified to be due to chicken-pox as he considered necessary.

The Spread of Measles in Schools

Mr. SNOWDEN asked the President of the Local Government Board whether, under the regulations issued by the chief medical officer of the Board, children might attend the public schools, although they came from homes in which at the time other children were suffering from measles; and whether he was aware that the school attendance officers,

acting under instructions from the local medical officer of health, whose action in this matter was governed by the Local Government Board regulations, insisted upon a child attending school if it had once had measles, although its brothers and sisters might be suffering from the disease; and, in view of the loss of child life from measles, would he take steps to make the regulations for dealing with this disease more stringent.—Mr. Burns wrote in reply: No regulations on this subject have been issued, but a memorandum was prepared jointly by the medical officers of the Local Government and Board of Education, which contains rules for the guidance of the officials concerned. These rules are based on present medical knowledge, and I am advised that such knowledge would not justify a modification of the rules in the direction suggested in the question.

MONDAY, JUNE 26th.

The Composition of Patent Medicines.

Mr. CHANCELLOR asked the Secretary of State for the Home Department whether he had received a communication from the Royal College of Physicians recommending that manufacturers and vendors of patent medicines should be compelled to print on the labels of the bottles or other vessels the exact composition of such medicines and the amount of each constituent; and whether, if he gave effect to this recommendation, he would take steps to make the rule applicable to the various vaccines and sera imported from abroad and those manufactured in this country.—Mr. CHURCHILL replied: I have been in correspondence with the Royal College of Physicians on this subject. I have no authority to take the steps suggested, but I think that the question of the conditions of the sale of patent medicines might usefully be considered by a Select Committee next session. I cannot at present express any opinion as to whether the inquiry should be extended to vaccines and sera.

National Insurance Topics.

Mr. JOYNSON-HICKS asked the Chancellor of the Exchequer whether he was aware that the medical profession was practically unanimous in asking for a wage-limit beyond which free medical benefit should not be given; and whether he could state, for the information of the House, his exact reasons why such wage-limit was impossible.—Mr. WEDGWOOD BENN (answering on behalf of Mr. LLOYD GEORGE) said: I fear it would be impossible to argue a complicated question such as this is in reply to a Parliamentary question, but I will refer the honourable Member to the passages dealing with the subject in my right honourable friend's speech on the second reading of the Bill on May 29th.

Mr. JOYNSON-HICKS also asked whether the Chancellor of the Exchequer had yet considered whether, in the management of consumption sanatoria and regarding patients who proved to be incapable of recovery, they would be kept in the sanatoria or sent home to die, as was the very common practice at the present time, thus spreading the disease over a wider circle.—Mr. WEDGWOOD BENN answered: The administration of sanatorium benefit will be in the hands of the Local Health Committees.

Home Office Administration.

On the House going into Committee of Supply on the Home Office vote,

Mr. J. W. HILLS called attention to the prevalence of lead poisoning. In 1896 the number of cases of lead poisoning in the Potteries was rather more than 400 a year. As a result of legislation, in the next four years they dropped to half, or 200 a year. As a result of further legislation, by 1901 they had dropped to about 100 a year. For the last ten years there had been no real decrease in the cases of lead poisoning in the Potteries. During the last eight years the figures had remained exactly as bad as they were. There did not seem very much hope under present conditions of their getting better. It might be thought by the Committee that the figure of 100 cases of lead poisoning a year was not a very large figure. He would grant that it was not, but the total harm to the community was not measured by the actual figure. Lead poisoning was a very insidious disease, and one which in its early stages was very hard to trace. Above all, its effect on women was extremely deleterious. It affected them in a very strange and remarkable way, and the result was that where women were exposed to lead poisoning their liability to miscarriage was very largely increased and stood at about three times that of the average of the community. He was inclined to think that the only real solution would be found by prohibition, either partial or complete, of the use of raw lead glazes, and the report of the Departmental Committee on Lead Poisoning pointed out that in connexion with a great many articles, and especially cheap coarse articles, the use of non-lead glazes was just as cheap as raw-lead glazes. He did not believe that this country alone could prohibit the use of lead glazes. The only way the subject could be adequately dealt with was by international agreement on the lines of prohibition, as was the case with white phosphorus in the match trade. He would urge the Home Secretary to take advantage of the next International Labour Conference to ventilate the subject and see whether it was not possible to get some international agreement in order to stamp out this evil. He believed that if a determined effort was made to tackle this evil a solution would be found.

Mr. GILL in the course of a speech referred to the Workmen's Compensation Act and medical referees. When Lord Gladstone was Home Secretary and the House of Commons was considering the Act, the point was pressed upon him that there ought to be State medical referees appointed who were not engaged in private practice. Lord Gladstone at that time had said he thought that it would be too expensive, that the cases were comparatively not numerous, and that it would cost the State too much, as medical referees could not be got without paying them a very large salary. Lord Gladstone, however, made a promise that an experiment should be tried by the appointment of a few such medical referees, but that promise had not been yet carried into effect. There was a very great dissatisfaction throughout the whole of the country in regard to the question of medical referees. As a rule they were engaged in private work, and naturally it was suggested that they could not very well be free from bias. There were medical referees engaged by insurance companies—not, of course, in the cases in which they acted as medical referees, but in other cases—and seeing that they got part of their income by examining persons who had been injured and that they were employed by the companies there must be a natural bias in that direction. But whether there was a bias or not there was a feeling amongst the workers that they were not getting fair treatment in regard to this matter. He had in connexion with his own society found persons who had been examined by medical referees and declared to b permanently cured, and later the very same people had been paid off a permanently disabled, and they had not been able to work since There was no appeal from the medical referees, and Parliament ough to have the element of unfairness taken away by the appointment State-paid officials who would be able to devote their whole time to th work, and in whom the people would have confidence.

Mr. CHURCHILL (the Home Secretary) said that attention had bee called to the Workmen's Compensation Act, especially in regard to th appointment of medical referees. He was inclined to agree that th time was fast approaching when a committee of inquiry shoul investigate the conditions of the industry of the country with referenc to workmen's compensation. He had, therefore, given instruction to the Home Office, and the officials were now beginning to collec materials, and when those materials had been obtained he believe that the question would arise in a very practical form next yea When the committee reported the cycle of years would come roun again when special legislation on the subject could be intro duced. On the question of lead poisoning he quite agreed with th honourable Member (Mr. Hills) that although the number of cases wa small the evil was great and preventable to a very large extent, and was the duty of Parliament to exert itself to stamp it out altogether The Departmental Committee appointed in 1908, after a very thoroug investigation, made a report which was published last autumn, an that report had, on the whole, been well received by the trade. Som of the proposals in the report led to representations being made fro the manufacturers, and the Home Office thought that the best wa to deal with them would be to call the committee together to consult them again through their chairman, who had taken a immense amount of trouble, and the result was that a few modification of detail had been approved. Regulations following on the committee recommendations were about to be issued in draft. He was aske whether they would be ready for this debate, but they were in th last stage before they went to the printer. He thought that he ha said enough to show the House that on nearly all the lines whic had been referred to it the Home Office was moving steadil forward. On some matters action had been already taken, some ha reached the stage where action only awaited Parliamentary authorit and others had reached a point where a new inquiry was necessary, a in the case of the Workmen's Compensation Act; but on all these lines and without wasting time, the Home Office was doing its very best t bring the system of factory legislation abreast of, and in front of, th system of any other country in the world.

Mr. WEDGWOOD pointed out that lead poisoning was very serious i the coach-building trade as well as in the pottery trade. He wante regulations in the pottery trade for ensuring cleanliness in the sho and on the part of the workmen. Once places where lead processe took place were put under decent conditions there would be a state things which would go a long way towards eliminating lead poisonin in the potteries. By far the best way was to secure that the month examination should be thoroughly efficient. The people in the potte area were examined once a month by certifying surgeons. Thos certifying surgeons were not whole-time officials. They we medical men engaged in general practice, and they were paid f the examinations which they made by the manufacturers. The pa ments amounted in some cases to £700 a year. One medical man, was informed, examined as many as 1800 persons a month. Tho people filed in front of him. In these circumstances the examinati was nothing more than a farce. Both masters and men wanted to s these certifying surgeons whole-time officials, so that the examinati of the workpeople might be a really satisfactory examination whi would detect the first traces of lead poisoning and so prevent growth of it. The present position of the certifying surgeons w causing a great deal of discontent in the whole of North Staffordshi These gentlemen could not possibly do the work properly so long they had to engage in competition for other work.

Mr. JOHN WARD also spoke on the subject of lead poisoning, a said that it was desirable that the Home Secretary should announ when the suggestions made by the committee on lead poisoning we to be put into operation.

The vote was subsequently agreed to.

BOOKS, ETC., RECEIVED.

APPLETON AND CO., D., New York and London.

Prevention of Infectious Diseases. By Alvah H. Doty, M. Health Officer of the Port of New York. Price 10*s.* 6*d.* net.

Plastic and Cosmetic Surgery. By Frederick Strange Kolle, M Price 21*s.* net.

CHAPMAN AND HALL, LIMITED, London.

England's Recent Progress. An Investigation of the Statistic Migrations, Mortality, &c., in the Twenty Years from 1881 to as indicating Tendencies towards the Growth or Decay of ticular Communities. By Thomas A. Welton, F.S.S., F Price 10*s.* 6*d.* net.

DOIN, OCTAVE ET FILS, Paris.

Lavage et Masso-Lavage du Colon, Technique et Indications. J. Baumann, Médecin consultant à Châtel-Guyon. Price M.

ERFURT, H., VERLAG VON, Davos, Switzerland.

Carl Spengler. Tuberkulose- und Syphilis- Arbeiten. He gegeben von seinen Schülern und Freunden. Price not state

HIRSCHWALD, AUGUST, Berlin.

Der Gynäkologische Operationskursus an der Leiche. besonderer Berücksichtigung der Operations-Anatomie, Operations-Pathologie, der Operations-Bakteriologie und Fehlerquellen. In sechzehn Vorlesungen. Von Dr. Wil Liepmann, Privatdozent für Geburtshilfe und Gynäkolog der Friedrich Wilhelms-Universität zu Berlin. Price M.22.

LAURIE, T. WERNER, Clifford's Inn, London, E.C.

Famous Castles and Palaces of Italy. By Edmund B. D'Auve Author of "The English Castles." Price 15*s.* net.

LEHMANN, J. F., München.

Fortpflanzung, Vererbung, Rassenhygiene. Katalog der Gruppe Rassenhygiene der Internationalen Hygiene-Ausstellung 1911 in Dresden. Herausgegeben von Prof. Dr. Max von Gruber, Vorstand des hygienischen Instituts in München und Priv.-Doz. Dr. Ernst Rüdin, Oberarzt an der Psychiatrischen Klinik in München. Erklärender Text mit 230 Abbildungen von M. v. Gruber, nebst einem Bibliographischen Anhang von Dr. Rudolf Allers. Price M.3.

LEWIS, H. K., London.

On Diseases of the Lungs and Pleuræ, including Tuberculosis and Mediastinal Growths. By Sir R. Douglas Powell, Bart., K.C.V.O., M.D. Lond., F.R.C.P., Physician-in-Ordinary to H.M. the King, and P. Horton-Smith-Hartley, M.V.O., M.A., M.D. Cantab., F.R.C.P. Fifth edition. Price 21*s.* net.

Practical Forensic Medicine. A Police-Surgeon's Emergency Guide. By C. Graham Grant, L.R.C.P. & S. Edin., V.D., Lieut.-Col. R.A.M.C. (T.), Barrister-at-Law (Gray's Inn), Divisional Surgeon, H and Thames Divisions, Metropolitan Police. Second edition. With which is a Chapter on Fees by Herbert Austin, Barrister-at-Law, Taxing Master, Central Criminal Court, &c. Price 2*s.* net.

MERCK AND CO., New York, St. Louis, and Rahway.

Merck's Manual of the Materia Medica. A Ready Reference Book for the Physician and Surgeon. Fourth edition. 1911. Price not stated.

OLIVER AND BOYD, Edinburgh.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by Sir John Batty Tuke, M.D., and James Ritchie, M.D. Vol. X. and Vol. XI. Price not stated.

SPRINGER, JULIUS, Berlin.

Jahrbuch für orthopädische Chirurgie. Bearbeitet von Dr. Paul Glaessner, Orthopädischer Assistent der chirurgischen Universitäts-Poliklinik in der Kgl. Charité zu Berlin. Erster Band: 1909. Zweiter Band: 1910. Mit einem Vorwort von Professor Dr. Pels-Leusden. Price, two volumes bound together, M.10, or each volume bound separately, M.6. (In future one volume will appear annually.)

THIEME, GEORG, VERLAG VON, Rabensteinplatz, 2, Leipzig.

Die Zeugung beim Menschen. Eine sexualphysiologische Studie aus der Praxis. Von Dr. med. Hermann Rohleder, Spezialarzt für Sexualleiden in Leipzig. Mit Anhang: Die künstliche Zeugung (Befruchtung) beim Menschen. Price M.7.

Zabludowski's Technik der Massage. Dritte, veränderte und vermehrte Auflage. Bearbeitet von Dr. J. Eiger, Leitender Arzt des Berliner Ambulatoriums für Massage. Price M.4.

TOWNSHEND, TAYLOR, AND SNASHALL, Printers, Cape Town.

Transactions of the South African Medical Congress (Twelfth Meeting), Cape Town, Oct. 31st to Nov. 5th, 1910. Published by the Transactions Committee of the Congress.

VIGOT FRÈRES, Paris.

Contribution à l'Étude de l'Opothérapie Mammaire dans les Hémorragies et dans le Fibrome de l'Utérus. Par le Docteur Jacques Luncz de la Faculté de Médecine de Paris. Price not stated.

Du Rôle de la Cholestérine dans le Développement de l'Artério-Sclérose et de l'Athérome. Étude Clinique et Thérapeutique. Par le Docteur G. Lemoine, Professeur de Clinique médicale à la Faculté de Médecine de Lille. Price Fr. 1.50.

WILLIAMS AND NORGATE, London.

In and Out of Parliament: Reminiscences of a Varied Life. By the Right Hon. Robert Farquharson, P.C., M.D., LL.D. Price 12*s.* 6*d.* net.

YEAR BOOK PRESS, THE, 25, High-street, Bloomsbury, London, W.C.

The Girls' School Year Book (Public Schools). The Official Book of Reference of the Association of Head Mistresses. Sixth Year of Publication. 1911. Price 2*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BRANWELL, CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Fifth District by the Penzance Board of Guardians.

CASELLA, G., L. & L.M.R.C.P., L. & L.M.R.C.S. Irel., has been appointed Consulting Medical Officer to the Calamor Mining Company of Spain and to the Cordoba Copper Mines, Spain.

CASSIDY, MAURICE ALAN, M.D. Cantab., M.R.C.P. Lond., has been appointed Physician to Out-patients at St. Thomas's Hospital.

COOKE, EMILY SUSAN, M.B., B.S. Lond., has been appointed Assistant (Female) Medical Officer at the General Post Office.

DUTTON, H. DE B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Banbury District of the county of Oxford.

EDGAR, T. BOWMAN, M.B., Ch.B. St. And., has been appointed Junior House Surgeon to the Dumfries and Galloway Infirmary.

FENWICK, CHARLES, L.R.C.P. & S. Edin., has been appointed District Medical Officer by the St. Thomas's (Exeter) Board of Guardians.

GIBBINS, FRANK, M.D., B.S. Lond., M.R.C.S., L.S.A., D.P.H., has been appointed Medical Officer for the Stithians District by the Redruth (Cornwall) Board of Guardians.

HOWARTH, WALTER G., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Surgeon-in-Charge of the Throat Department at St. Thomas's Hospital, and Surgeon-Laryngologist to the City of London Hospital for Diseases of the Chest, Victoria Park.

MACDONALD, JOHN FINLAY, M.D., Ch.B. Glasg., D.P.H. Camb., has been appointed Medical Officer of Health for the Auckland Rural District, county Durham.

MCELDOWNEY, W. P., M.B., B.Ch. R.U.I., has been appointed Honorary Physician to the Royal Portsmouth Hospital.

MACPHERSON, W. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Topsham District of the county of Devon.

MARTIN, ROBERT, L.R.C.P. & S. Edin., has been appointed Medical Officer to the Post Office at Banbridge, including Corbet, Edinordinary, Garvaghy, and Lenaderg.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN PROVINCIAL COMMITTEE FOR THE TRAINING OF TEACHERS.—Medical Officer and Lecturer on School and Personal Hygiene. Salary £400 per annum.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Locum Tenens. Salary 3 guineas per week, with board and lodging.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BURY INFIRMARY.—Senior House Surgeon. Salary £110 per annum, with board, residence, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Also Second House Surgeon. Salary in each case £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, unmarried. Salaries £80 and £70 per annum respectively, with board, lodging, and washing.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COUNTY OF LONDON.—Assistant Medical Officer (Education). Salary £500 per annum.

COVENTRY, CITY OF, SCHOOL CLINIC.—Part-time Oculist and Part-time X Ray Specialist. Also School Dentist. Salary £300 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DARENTH ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £120 per annum, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

GLAMORGAN COUNTY COUNCIL.—Medical Officer. Salary £300 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HOLBORN UNION INFIRMARY, Archway-road, Upper Holloway, N.—Second Assistant Medical Officer. Salary £80 per annum, with board, apartments, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon and House Physician, both unmarried, for six months. Salary in each case £30, with board, residence, &c. Also Locum Tenens for Bacteriologist and Clinical Pathologist.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon. Salary £40 per annum, with board and laundry.

KENT COUNTY COUNCIL.—Assistant to County Medical Officer of Health. Salary £300 per annum.

KIRKMABRECK, PARISH OF.—Medical Officer. Salary £40 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LEICESTERSHIRE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON HOSPITAL, E.—Six Honorary Dental Surgeons.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street. — Assistant Medical Officer for six months. Salary £50 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Honorary Assistant Physician.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 per annum respectively, with board and washing.
MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon. Salary at rate of £80 per annum, with board, attendance, and laundry.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House Physician. Salary £75 per annum, with board, residence, and washing.
NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Professor of Physiology. Salary £450 per annum.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Two House Surgeons. Salary £80 each per annum. Also Casualty Officer, unmarried. Salary £60 per annum. All with board, lodging, and washing.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.
NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.
PERTH, COUNTY AND CITY OF PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60 per annum, with board.
PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Dental Surgeon.
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Anæsthetist.
ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Surgeon.
SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.
SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with rooms, board, and washing.
SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.
TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, washing, &c.
TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, &c.
WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140 per annum, with board, &c.
WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Medical Officer.
WESTMINSTER HOSPITAL.—Resident Obstetric Assistant for six months. Board and lodging provided.
WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.
WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Carnoustie, in the county of Forfar; at Malmesbury, in the county of Wilts; at Harwich, in the county of Essex; at Market Rasen, in the county of Lincoln; at Newburn, in the county of Northumberland; at South Shields, in the county of Durham; and at Wick, in the county of Caithness.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for Bromsgrove, Redditch, and Droitwich County Courts.

Births, Marriages, and Deaths.

BIRTHS.

JUSTICE.—On June 22nd, at The Manor House, Marylebone, London, N.W., the wife of Captain W. A. Justice, I.M.S., Madras, of a son.
PAYNE.—On June 23rd, at Brunswick House, Kew, the wife of E. L. Payne, M.R.C.S., L.R.C.P., L.S.A., of a son.
ROSS.—On June 22nd, at The Grove Lodge, Sawbridgeworth, the wife of E. Athole Ross, M.D., M.R.C.P., of a son.
TOVEY.—On June 18th, at Kaponga, Taranaki, New Zealand, the wife of Arthur Hamilton Tovey, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

CARLÉ—ELLIS.—On June 17th, at St. Jude's, S.W., Frederick Charles Carlé, M.B. Lond., M.R.C.S., to Elsie Maud, elder daughter of the late Henry Charles Ellis and Mrs. Ellis of Maidstone.
DICKSON—RICE.—On June 24th, at St. Michael's, Bowes Park, N., Robinson Simpson Dickson, M.D., to Marguerite Victoria, eldest daughter of W. G. Rice, Esq., J.P., of Grasmere, Bowes Park, N.
PRETTY—ELLIOT.—On June 17th, at Hampstead, Kenneth Pretty, M.B. Cantab., to Emily Hume, third daughter of the Rev. W. Hume Elliot, of Tooting Common.

DEATHS.

EMMERSON.—On June 22nd, at Guy's Hospital, London, John Bolton Emmerson, M.D. Durh., M.R.C.S. Eng., of Biggleswade, aged 57.
OSBORN.—On June 23rd, at St. Martin's-place, Dover, Ashby Greenough Osborn, M.R.C.S., L.S.A., in his 83rd year.
PLUNKETT O'FARRELL.—On June 22nd, at The Croft, Oxshott, from heart failure, Sir George Plunkett O'Farrell, Knt., M.D., aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"CARAVANNING" FOR HEALTH.

IN view of the importance that is more and more being attached to the open-air life, not only as a preventive, but even as a curative agent in the early stage of tuberculosis, there is a mode of attaining it which for ease, comfort, and convenience can hardly be excelled for those of limited means. All sorts of shelters have been devised, tent life has been recommended, devices for sleeping either entirely out of doors on roofs and balconies, or partly so with head out of window have been vaunted, yet the use of the simple caravan has not met with adequate encouragement from medical men. In "caravanning" is provided a means of outdoor life that is inexpensive in its preliminary outlay, costs ridiculously little in its working, enables one to seek solitude or company at will, permits of all degrees of enjoyment from mere comfort to absolute luxury according to one's means, and abolishes monotony by making frequent change of locality a possibility independent of income. The owner of a caravan can make arrangements with farmers and others in almost any part of the country for a "pitch" for his caravan at a cost varying from gratuitous "make yourself at home" up to some 5s. or 7s. 6d. a week the charges, when any are made, including grazing for the horse. As a "pitch" is usually secured near a farmhouse, arrangements can ordinarily be made for an ample supply of fresh milk and new-laid eggs—important items in everyone's bill of fare. For those compelled to go daily to town there should be little difficulty in securing a suitable "pitch" close to one of the railway lines that lead to London from all directions. Except in rainy weather and during the hours of sleep the caravanner usually spends all his time in the open; and even when compelled to be in his van there are means of rendering it freely open to the air, while preserving privacy and ensuring adequate warmth. During the Coronation week the Caravan Club of Great Britain and Ireland, which was founded in 1907 by Mr. J. Harris Stone, and now numbers 250 members, of whom two-thirds own their own caravans, held its annual meet in the beautiful country adjoining the London County Asylum at Cane Hill, Surrey, whose superintendent, Sir James M. Moody, is himself an enthusiastic caravanner. Some 15 vans of various kinds and sizes were assembled there, some having come from the farthest parts of England. Among them was the "Wanderer," the van of the late Dr. Gordon Stables, now inhabited by his widow and daughter. The commodious and serviceable van of Sir James Moody emphasised the æsthetic possibilities of caravanning, while various gipsy vans demonstrated what can be done to provide comfort from a slender purse. Vans can be bought from about £40 to a thousand guineas, to be drawn by horses or by motor power. Being moveable houses they are not taxable. Light portable tents, that can be attached to one side of the van, afford extra sleeping accommodation, or can be used as bathrooms; a very ingenious one, being really a sack, all in one piece, with waterproof floor, roof, sides, and ends, and opening only at one end, but adequately ventilated, was on exhibition. To the sportsman, the entomologist, the botanist, the artist, the photographer, the caravan offers an abundant source of inexpensive entertainment during the pleasant months of the year; but it is to those in search of health through the open-air life that we would especially commend caravanning. If any such will communicate (enclosing postage for reply) with Mr. J. Harris Stone, secretary of the Caravan Club, 358, Strand, London, W.C., they will be put in the way of obtaining all necessary information with regard to hiring, purchasing, building, or equipping of vans, approved "pitches" all over the country with expense thereof, and, in short, everything pertaining to caravanning.

PEDESTRIANS' PERILS.

IN these days of motor vehicles of all sorts, speeding along at 20 miles an hour, and very frequently at a much faster pace, and of aeroplanes and airships which may at an unexpected moment descend on a crowd of spectators with terrible results, or from which aviators may drop missiles, harmless or otherwise,—in these circumstances it would seem that the mere pedestrian, left behind, as it were, in these days of quick travel, will have to exercise extraordinary care or his safety will be seriously imperilled. It is astonishing, indeed, the risks the ordinary pedestrian is exposed to. The Steyning police court provides a case in point. A young motorist, Harold S. Powell, aged 19, accompanied by three friends, had a day's outing in a motor-car, proceeding from Storrington to Brighton. On the way defendant was seen driving the car with his left hand and firing a revolver with the other. In one instance water splashed up from a pond by a bullet went on a boy's face. Shots were also fired on the homeward journey. Through his counsel defendant said there was not the slightest intention of causing any harm or annoyance to anyone; that it was a

youthful freak. The bench, in fining the defendant £2 on each of three summonses for wantonly firing a pistol within 50 feet of the centre of the road—the offence being committed in three parishes—said the penalty was absolutely inadequate for such extraordinary conduct. They, however, marked their serious view of the case by mulcting one of Powell's companions in a fine of £7 10s. and costs for driving the car without a licence, while Powell indulged in his revolver practice on one part of the journey. It is all very well to be considered a good shot at Sandhurst, but to take a motor-car journey as an occasion for indulging in a little practice is much to be deprecated, and it is fortunate for young Powell and his companions too that no human being was struck by any of the bullets.

HOW THE LARCH SAW-FLY HAS BEEN KEPT UNDER AT THIRLMERE WATERWORKS.

SOME four or five years ago the larch saw-fly appeared in large numbers in the Lake District and for the most part was allowed to co tinue its ravages unchecked save in the Thirlmere district, from which Manchester draws such a large proportion of its water-supply. Naturally, this district, too, was invaded, and the larch plantations that had been set out by the Manchester corporation suffered heavily. Happily, however, the zoologists were able to suggest an effective remedy. Professor Hickson, of the University of Manchester, suggested that bird life should be encouraged on the estate, that the young larches should be hand picked to get rid of the flies, and that tarred tow should be wrapped round the stems. To encourage birds to settle on the estate round Thirlmere 250 nesting boxes were scientifically distributed in the trees, and of these 85 per cent. were occupied last year. This year 60 boxes have been added. The result has been that last year the saw-fly could hardly be found on the estate. The birds, especially the tits, eat up the caterpillars the moment they hatch, and in this way prevention proves to be better than cure. Care is taken to feed the birds during the winter. This is another good illustration of the usefulness of "economic entomology."

HEALTH AND CLIMATIC CONDITIONS OF RIO DE JANEIRO.

IT is stated in the annual report of Mr. Hamblock, the acting British Consul, that the population of the city of Rio de Janeiro, Brazil, is estimated at about 670,000 and of the surrounding suburbs at 200,000, thus making the total population of the federal district 870,000; the area is 1100 square kilometres. Rio continues to be free from yellow fever, though an isolated case was reported in the early part of 1911, but this was proved to be a case brought on a steamer from Bahia. Tuberculosis and diseases of the digestive organs are responsible for the majority of deaths in the district, while cases of "*grippe*" (a somewhat vaguely defined malady, probably influenza, but one which in its most serious form of "grippe intestinale" is said by some to be typhoid fever) are becoming more and more frequent. The summer was trying and the lack of rain abnormal. Farmers in the interior suffered considerably owing to the droughts, cattle died in great numbers, and many crops were ruined. The city was fortunately saved from what threatened to become a very serious shortage of water, but the scare has drawn the attention of the authorities to the many faults and conditions in the administration and control and *matériel* of the water-supply, and the matter is said to be receiving all possible consideration. In March, 1911, violent gales and torrential downpours of rain caused floods in all parts of Rio, communication was interrupted, and the lighting of the city suffered. The authorities are adopting measures to prevent, if possible, a repetition of this state of affairs, but the difficulties in the way are considerable owing to the peculiar position of the town, which receives tons of water from the surrounding hills, while means of egress for the water are few and quite inadequate. The birth-rate in 1910 was 27·79 per 1000 inhabitants and the death-rate 20·54 per 1000. There was an epidemic of measles from July to December. The deaths from "grippe" in 1910 numbered 678, as compared with 484 in 1909 and 481 in 1908. Tourists continue to come to Rio in increasing numbers, attracted by the extraordinary natural beauties of the place. The cost of living may, at a fair estimate, be considered about three times as high as in Europe.

HOSPITAL FLOORING.

THERE are various opinions with regard to the best kind of flooring for hospital wards. Many architects still use hard wood, such as maple, teak, oak, in very narrow widths like a ship's deck. Others use a form of flooring which is suitable either for laying on a board floor or a concrete floor. It is a German invention. The material is made up largely of sawdust and indurating substances, and it is put down in a plastic state, various forms of acid being used to harden it. "Dolomen" and "Terrano" are examples of it. A well-known architect informs us that he has come to the conclusion that the best form of floor is of concrete, finished with a smooth cement surface, and then covered with good linoleum stuck down solid all over. This is quiet and warm, and slightly elastic, and most easily cleaned. The "Terrazzo" paving, which is a sort of marble concrete rubbed down to expose the marble in a sort of rough tesselated pattern, is a very pretty form of flooring, but it is colder than "Dolomen" and not so elastic. It is rather unyielding to the feet, and the nurses sometimes complain of it, as they never do of linoleum. In all passages, corridors, and places where smartness is an asset, or where quick rough cleaning is necessary, such as sculleries, "Terrazzo" is the most suitable flooring. We are led to these remarks by the fact that several correspondents have recently asked us for advice upon the subject of flooring in connexion with the fitting of domestic buildings for hospitals and similar purposes.

IS LEPROSY TRANSMISSIBLE?

"THE answer is in the negative," according to Dr. G. Photeinos, professor of dermatology in the University of Athens and director of the Hospital for Contagious Diseases in the same seat of learning. Leprosy has of late numbered many cases in the Island of Crete, particularly at Spinalonga, and Professor Photeinos, just returned from a prolonged visit to the locality, has, as the result of bacteriological and clinical research, been constrained to agree with the Cretan physicians that not even by inoculation can the disease be transmitted from the leprous to the non-leprous subject. Of his *catena* of cases the most striking is that of a young woman who, finding her husband to have been officially declared a leper and grieved beyond measure at the prospect of being separated from him, seized a knife, made a deep incised wound on her person, and squeezed into it a quantity of the virus from the sores of the said husband who was standing near. "Now," she exclaimed, "I too am a leprous subject and entitled to remain with my husband." The two were accordingly sent together to Learocori (the leper village), and there the devoted wife, spared from the disease, continued for 15 years to take care o her husband and of the other patients, showing herself to be an excellent and assiduous nurse. Her husband is now dead, but the widow, still immune, remains in the village, wedded to her self-imposed *métier*.

HOSPITALS IN BASUTOLAND.

Mr. H. C. Sloley, the British Resident Commissioner in Basutoland, in his annual report just received at the Colonial Office, mentions that new hospitals have been opened at Mafeteng and Mohale's Hoek during the year. Another small hospital has been completed at Moyeni, in Quthing District, but not yet opened. Maseru Hospital has been enlarged to accommodate 40 beds. The work done in the public dispensaries is most gratifying, a total of 37,000 cases having been treated during the year. The question of leprosy, which has been drawing attention all over South Africa, is being studied in Basutoland also.

TUBERCULINS.

"TUBERCULINS and their Employment in Diagnosis and Treatment of Tuberculosis" is the title of a pamphlet issued by Meister Lucius and Brüning, in which, after a brief *résumé* of the details of Koch's researches for a non-toxic immunising agent derived from the tubercle bacillus, they describe the various tubercle preparations now put upon the market, dividing them into three classes: (1) Preparations obtained from broth containing tubercle bacilli; (2) preparations obtained from germ-free tubercle bacilli bouillon; (3) preparations from free tubercle bacilli. A section on the diagnosis of tuberculosis follows, which describes the methods of subcutaneous injection, the cutaneous reaction, the percutaneous inunction method, and the conjunctival reaction. The clinical results of diagnostic tuberculin tests and the employment of tuberculins for the cure of human tuberculosis are pointed out. The pamphlet will be sent gratis to physicians on application to the publishers, 51, St. Mary Axe, London, E.C.

L. C.—There is a good description of the Plombières baths and waters in "Crénotherapie, Climatothérapie," &c., par le Professeur L. Landouzy and others, published by J. B. Baillière et Fils, 19, Rue Hautefeuille, Paris. 1910. Price is something between 8 and 12 francs. Pages referring to Plombières 384–396. Dr. William Bain and Dr. Wilfrid Edgecombe also mentioned it in their book, "The Physiology and Therapeutics of the Harrogate Waters," published by Longmans in 1905, and the Plombières treatment has been carried into practice at Harrogate since then.

Dr. W. H. Bishop.—"The Ship's Surgeon's Handbook," by A. V. Elder is published by Baillière, Tindall, and Cox, at 5*s.* net.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for July and August, 1911:—

April-October.—Rome Exhibition (United Italy's Jubilee).
,, 29th-Oct. 26th (Turin).—International Exhibition.
May 3rd-Oct. 31st (Glasgow).—Scottish Exhibition.

May 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 3rd–5th (Bergen).—Seventh Norwegian Congress of Internal Medicine.
,, 6th and 7th (London).—Imperial Health Congress.
,, 13th and 14th (Oxford).—Oxford Ophthalmological Congress.
,, 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th–29th (London).—Universal Races Congress.
,, 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Études Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
,, (Carmarthen).—Welsh National Eisteddfod.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th–7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–15th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th–23rd (Rome) Seventh International Congress of Dermatology and Syphilology.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos-street, W.: at 8 P.M.

Specimens:
Dr. V. Bonney: An Aid in the Diagnosis of Carcinoma.
Mrs. Scharlieb, M.D.: (1) Adeno-carcinoma of Ovaries and Uterus; (2) Carcinoma of the Rectum.

Address by the President (Dr. Macnaughton-Jones):
The Appendix—its Relation to the Causation and Surgical Treatment of Affections of the Adnexa.

FRIDAY.

ANNUAL GENERAL MEETING OF FELLOWS at 5 P.M.
Election of Officers and Council for Session 1911–1912.

SATURDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes)

Provincial Meeting at Cambridge.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 2, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M., Lecture:—Mr. R. E. Bickerton: Ocular Malingering and its Detection.

TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. S. R. Russell: The Diagnosis of Intracranial Tumours (with lantern demonstrations).

WEDNESDAY.—4 P.M., Mr. G. E. Waugh: Clinique (Surgical). 5.15 P.M., Lecture: Dr. A. E. Giles: Malformations in their Clinical Aspects.

THURSDAY.—4 P.M., Mr. H. S. Clogg: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. G. R. Turner: The Modern Treatment of Hernia.

FRIDAY.—4 P.M., Mr. K. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Ll. Williams: The Extraction of Teeth, When and How.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Intestinal Obstruction from Medical Point of View.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Intracranial Tumours.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Clinical Pathology.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Dr. H. Pirie: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Paraplegia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Cerebellar Disease.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Mackenzie: Pleurisy.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. J. Atkinson: Nose

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, are given in this issue of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 28th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 22	29·99	S.W.	...	114	67	53	57	61	Overcast
,, 23	29·81	S.W.	...	113	67	54	54	63	Overcast
,, 24	29·46	S.W.	0·03	117	66	54	54	55	Overcast
,, 25	29·62	S.W.	...	72	55	51	52	54	Raining
,, 26	29·87	W.	0·23	115	60	51	50	55	Cloudy
,, 27	30·16	N.W.	0·27	113	70	51	50	56	Cloudy
,, 28	30·28	W.	...	124	73	55	59	64	Cloudy

The following journals, magazines, &c., have been received:—Revue Française de Médecine et de Chirugie, Revue d'Hygiène et de Police Sanitaire, Annali di Medicina Navale e Coloniale, Revue de Psychiatrie et de Psychologie Expérimentale, Transactions of the Society of Tropical Medicine and Hygiene, Revista de los Hospitales (Montevideo), Australasian Medical Gazette, Malaria, Bulletin de la Société de l'Internat des Hôpitaux de Paris, Indian Medical Record, Journal of Nervous and Mental Disease, Hospital Assistant (India), Indian Medical Journal, Australian Medical Journal, American Journal of Surgery, Medical Chronicle, Quarterly Journal of Microscopical Science, Canadian Practitioner, Albany Medical Annals, American Journal of Obstetrics, Steward, Bulletin de l'Association Française pour l'Étude du Cancer, Pacific Medical Journal, Interstate Medical Journal, Cornhill Magazine, Archives of Pediatrics, British Journal of Dermatology, Archives of Internal Medicine, Bristol Medico-Chirurgical Journal, Mercy and Truth.

Communications, Letters, &c., have been received from—

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The Lumleian Lectures

ON

A CLINICAL STUDY OF CARDIO-VASCULAR DEGENERATION.

Delivered before the Royal College of Physicians of London

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EMERITUS LECTURER ON THE PRACTICE OF MEDICINE AT, AND CONSULTING PHYSICIAN TO, CHARING CROSS HOSPITAL, ETC.

LECTURE I.

Delivered on March 23rd.

INTRODUCTION.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—I desire to convey my best thanks to you, Sir, and to the Censors' Board for having honoured me by appointing me to fill this ancient and honourable office in the present year, and to commemorate with you the devotion and liberality of Dr. Richard Caldwell and Lord Lumley to the College. As well as the distinction that attaches to it, another consideration moved me to accept your invitation. I felt that the discharge of the duty which it involves would afford me an occasion to unburthen my conscience of a sense of neglected opportunities. One who realises that he is numbered among the seniors of the College necessarily has at his service for such a purpose as the present many records of cases, as well as that less determinate possession called "experience," which ought to be turned to some use, but which without special stimulus would lie neglected and finally be lost. My selection of the subject of cardio-vascular degeneration in particular was prompted by the possession of a considerable amount of clinical material bearing upon it. Let me add, by way of further apology, that whilst an examination of records that have been accumulating for years is itself a heavy undertaking, a study of degeneration of the heart and arteries involves so many forms of knowledge, pathological as well as clinical, and what knowledge we may possess of human nature as well as of the nature of life and death themselves, that one presently feels overwhelmed by the difficulties of the task, and astonished at one's temerity in undertaking it. I can only say that, whatever may be the value of this study, it was approached and pursued with an open mind—without prejudice for any one of the many and diverse doctrines on the pathogenesis of arterial sclerosis and of senile changes in the heart.

The presentation of my results will be entirely unsystematic. It will be no methodical and complete description of the clinical characters of cardio-vascular degeneration, but will consist of the results of an examination of various portions of the subject that have a distinct bearing on practice—that is, on prognosis and treatment. The title, and my definition of it, must therefore be accepted as elastic. I shall not attempt to draw a line between degeneration and chronic inflammation, between atheroma and chronic aortitis. Whilst I shall have much to say about syphilis of the aorta and heart, I shall make but passing references to aneurysm, and to syphilis—or indeed other diseases—of the cerebral arteries, or to rheumatism as a precedent of degeneration. Nor does time permit me to discuss—if I could discuss it with any profit to medicine at the present time—the vast clinical and pathological problem of chronic Bright's disease in its relations to cardio-vascular degeneration, and the part played in it by that influence of evil significance, high blood pressure, which cannot be satisfactorily accounted for by our present knowledge, and which as to its nature or origin constitutes the unknown quantity, the mysterious x, that is being sought with so much industry by observers at this moment.

I need not dwell on the importance of this subject. According to the report of the Registrar-General for 1908 the mortality from cerebral hæmorrhage in this country in persons over 35 years of age is 2·083 in a million men and 2·284 in a million women. It would appear that many lives are lost from arterial disease at an age when work ought to be still carried on in the interests of the family and the country, at an age when a man's reasonable ambitions, as a rule, have not yet been attained.

DURATION OF LIFE.

We must be content with limitation of life. Death is natural, for it is universal—individual death. But equally natural and universal is the desire to make death remote. To attain the maximum age has been a subject of unbroken interest and effort in the history of the world: to lengthen the span of a healthy, peaceful, unclouded old age. Now the natural age of man is not three score years and ten. That age may be the ordinary maximum; but the natural limit of life is the greatest age that has been reached according to authentic records. And why should not life be interminable? This is a vain question, interesting as was the discussion of it by Sir William Allchin in his oration on "The Breaking Strain." But it serves to suggest another question—one of the questions that inspired my present study. What is the origin, the meaning of this process of degeneration of the cardio-vascular system that is completed in death; and why should its fatal effects be met with so often before their time? I will refer but briefly to the first part of this question—the meaning, the general pathology, of degeneration as it affects the heart and arteries, for I must hasten to the examination of the second part of the question—how it comes to be premature—in the hope of finding an answer to it that may have some useful application.

CAUSATION OF CARDIO VASCULAR DEGENERATION.

I would only remind you that life consists in the actions of the countless influences that fall upon the body, and the reactions of the body to them, and that the state of our organs as we find it is the result. The process of wearing-out of the organs of circulation, characterised anatomically by degenerations of different kinds, is a manifestation of this vital process in individuals who have escaped death from the diseases and accidents of earlier life. Regarded comprehensively, the environment, including the pathogenetic influences (so called, but quite indeterminately limited), acts on the heart and arteries in two directions. First, it affects the nutrition of their walls. This is disordered, and may be ruined, by poisons, inorganic and organic, including lead, alcohol, and the products of bacterial activity; by micro-organisms themselves; by the products and other consequences of disordered metabolism; by the spirochæte of syphilis, and by other parasites. No doubt there are also dystrophies of the heart and arteries of nervous origin, central and reflex. And we may perhaps be permitted to assume for the present that simple length of use of the elements of the vascular and cardiac walls may finally wear them out. In constant opposition to these pathogenetic influences on the cardio-vascular tissues are natural provisions for maintaining their nutritive soundness and physiological efficiency. The endocardium and the intima are nourished by the circulating blood in which they are bathed. The vasa cordis and vasa vasorum supply the other structures; and their associated veins and lymphatics provide for elimination. The nervous system affords wholesome impulses which serve to control the processes in favour of health. In the majority of individuals these provisions are sufficient, and continue so for what we are pleased to regard as the natural "expectation" of life.

Thus abundantly provided or protected against the morbific influences which threaten the substance of their walls, how come the heart and arteries to fall victims to them so early in some individuals, sooner or later in all? Vitality fails here, as elsewhere in the body, from either side—from very severity of the essential cause, or from insufficiency of natural resistance—or it fails from both sides together.

How many and powerful the extrinsic elements of the causation of cardio-vascular degeneration are we shall see presently. But of equal etiological importance with the violence or persistence of these is relative insufficiency of the provisions for meeting them. In a small proportion of individuals the materials of the cardiac and arterial tissues are essentially inferior in quality. This is one of the instances of inherited dystrophies—in part the "family heart." But there is another consideration that concerns all individuals. The nutrition of the cardiac and vascular walls is automatic. Now the obvious advantages in this arrangement are secured at the cost of its being self-dependent, which involves a grave risk if disorder or disease arise. The heart and vessels that circulate the blood are fed by the blood—that is, ultimately

by themselves. The blood depends on the vessels for the provision of its own constituents, regeneration and purification. The vasa that supply the heart and arteries are dependent for their own nutrition on the activities and soundness of these. Self-dependence of the circulation, and mutual dependence of its elements of this character, favour the development and extension of vicious circles of malnutrition once disability or damage occurs in any part of the system. Might one venture to speculate that here one finds a reasonable explanation of "wear and tear," the necessary or natural degeneration of the cardio-vascular system and its dependencies?

THE PART PLAYED BY INTERNAL PRESSURE.

The second direction in which the environment influences the organs of circulation is through internal pressure. Whether it acts on the circulation as a whole or only on a portion or a region of it, whether it is in the form of physical stress or of nervous origin, or an effect of specific poisons like lead, or of excess of blood, or of the quality of the blood, or of disturbance of respiration or of excretion, and whether the pressure be directly central (cardiac) in its source or directly peripheral, high blood pressure would strain the walls from within were it not opposed by another set of natural provisions. These are, first and most obvious, the passive resistance, the material "strength" of the parietal tissues, the fibrous structures of the adventitia and the pericardium. Secondly, there is the property of extensibility with associated elasticity possessed by the elastic elements of the vascular walls, which not only prevents shock and permanent dilatation and rupture by receiving and momentarily storing energy, but positively promotes the circulation by liberating it again. Thirdly, there is the function of reaction possessed by the muscular elements, which regulate the local pressures and the blood-flow in organs in response to their metabolic activity and maintain the general tone of the circulation. And, lastly, there are the other physiological mechanisms resident in the circulation and its nervous connexions: the myogenic and neurogenic mechanisms of the heart, the vagus and sympathetic supplies to the heart, and the vaso-motor and vaso-dilator supplies to the arteries.

These physiological provisions against the effects of high internal pressure also are exercised at the risk of disablement, automatically developed and automatically increased. Undue exercise of them, in degree or in time, provokes hypertrophy of the muscular elements and an over-growth of the fibrous and elastic tissues, which is entirely conservative or compensatory in its significance—the defensive replacement, or "strain-hypertrophy" of Adami. But the resulting thickening of the wall and narrowing of the lumen from sclerosis and hypermyotrophy increase the stress on the internal surface of the vessel, provoke in turn a further rise of pressure, and establish the necessary conditions of a second vicious circle leading from bad to worse, from fibrous to fatty degeneration—wear and tear in another fashion.

The ultimate result of these actions and reactions between environment and circulation is unfavourable to the circulation. The hypertrophied and fibrosed walls of heart and vessels, though they be hypertrophied and fibrosed as the results of genuine physiological reaction and anatomical repair, are less and less sufficiently nourished, and now yield to the high pressure that the thickening has provoked. Whilst the pathogenetic influences continue, and, indeed, necessarily increase with age, resistance is steadily reduced. The issue can be but in one direction—degeneration with disablement, which ends in death. It appears that damage of the circulation, however small to begin with, necessarily grows and spreads. If we are to delay the fatal issue, to prolong life, to reduce the number of premature deaths from cardio-vascular degeneration, we must work in two directions. On the one hand, we must promote those provisions for resistance, reaction and repair which the circulation possesses so abundantly; on the other hand, we must laboriously seek out the influences that can be proved to damage it, study the manner of their incidence and of their actions, and attempt to anticipate or counteract them. As Professor Humphry said many years ago in his work on Old Age"[1]: "The first requisite for longevity must clearly be the inherent or inborn quality of endurance; of steady, persistent nutritive force, which includes reparatory force and resistance of disturbing effects; and a good proportion or balance between the several organs. The second requisite is freedom from exposure to the various casualties, indiscretions, and other causes of disease to which illness and early death are so much due."

[1] Old Age, pp. 11 and 12.

HIGH ARTERIAL TENSION AND SCLEROSIS.

At the present moment a great body of clinicians and pathologists all the world over are laboriously investigating the problems connected with the blood pressure and the histology of sclerosis and atheroma and the associated changes in the heart. Until these problems have been solved we cannot hope to prolong life, to prevent or remedy premature degeneration. But so much work has been done in these directions that the attention of the profession at the present time may be said to be almost confined to the two conditions—arterial tension as it is estimated instrumentally, and arterial sclerosis. The very attractiveness of the newer methods of investigating the character of the pulse, and the readiness with which thickening of the radial artery can be determined, are unfortunate in this respect—that they encourage incomplete diagnosis. I need not say to you, Sir, and to this learned audience, that something more than "high arterial tension" and "arterial sclerosis" must be reached in the way of a diagnosis in individual instances—if by diagnosis we understand a conclusion on which we are to base prognosis and treatment. The cause, the nature of the pathological process, of which high tension and sclerosis after all are but evidences, must be determined if possible in every case of the kind.

CLINICAL INQUIRY INTO THE ORIGIN OF THE MORBID PROCESSES.

My own work, purely clinical in its character, and involving in every case a definite expression of opinion in respect of prognosis, has necessarily included an inquiry into the origin and beginnings of these conditions of disorder and disease. I confess that I have found it a difficult proceeding to attempt to discover the causes and trace the earliest phases of the morbid processes that end in arterial sclerosis and atheroma and in degeneration of the valves and walls of the heart. A man of 50 comes to us for our opinion and advice. He has lately become conscious of shortness of breath on moderate exertion, of præcordial oppression, possibly of pain across the sternum, extending into one or both arms, on walking to business after breakfast. He suggests that his stomach or liver is out of order, but he obviously suspects that his heart is concerned in the production of the discomfort. Or, instead of such symptoms, the man's complaint is of nothing more serious on the surface than vertigo or insomnia, or rheumatism (as he calls it), or eczema, or of a sense of unfitness for work and fits of depression. These statements and our patient's appearance and age suggest to us that his circulation is either disordered or actually diseased. We find his radial sclerosed, the heart enlarged, with a somewhat diffused shock representing the impulse, and a systolic murmur over the aortic area. The diagnosis is obvious: the man is the subject of arterial degeneration and its effects as far as they have developed. If we were to proceed forthwith to give this man our opinion and advice we should find that we do not possess either the elements necessary for prognosis, or the indications necessary for treatment. To obtain these we must make close inquiry into the patient's whole history, particularly with respect to his occupation and habits, the diseases from which he had already suffered, his constitutional strength and physical training and disposition in earlier years, and, more remote than these, his inheritance. Our purpose is to discover if possible which element or elements in the long chain of events and conditions that have constituted our patient's life may have been, either by excess or by default, responsible for the disorder or disease that has now overtaken him. Experience and our knowledge of the accepted causes of cardio-vascular degeneration enable us to limit these inquiries within moderate bounds. We ask after liability in the family to cardiac disease, and to gout, diabetes and gravel; after the use or possible abuse of athletics in youth; after the acute infectious diseases from which he may have suffered, never forgetting syphilis; after the amount of physical stress and nervous stress involved in his professional, business, or private concerns; and we go

into the details of his indulgence in food, alcohol and tobacco, and his enjoyment of wholesome exercise.

It is laborious, this inquiry into the family history and past personal history of each patient. And I confess that the information one receives in reply is often indefinite and misleading, for example, with respect to gout as distinguished from rheumatism. Sometimes the truth is wilfully concealed, particularly as regards syphilis. Important facts like albuminuria and glycosuria are usually unknown to the patient. The etiological value of certain influences, such as nervous stress, cannot be estimated quantitatively. And, finally, the causation may be so multiple and complex that one cannot disentangle the elements of it—toxic, physical and nervous—and apportion to each its proper share in the production of the disease.

DIFFERENTIAL DIAGNOSIS OF VARIOUS CLINICAL TYPES.

Difficulties like these tempt us to be content with less than the truth, with results unsatisfactory to us as naturalists, and comparatively useless for the purposes of prognosis and treatment in the interests of the patients. I therefore asked myself whether it might not be possible to differentiate the various kinds of arterial sclerosis and cardiac degeneration by their clinical characters. Does each kind of these diseases, according as it is known to be produced—e.g., by syphilis, physical stress, alcohol, and the rest—possess some signs and symptoms so relatively characteristic as to be diagnostic of it, or at least to suggest the etiological diagnosis and indicate the direction in which closer inquiry should be pursued? And, further, are these characteristics of each kind or type sufficiently marked to enable the observer to recognise the respective effects of associated causes—for instance, of syphilis and glycosuria—when they come together in an individual instance?

This consideration suggested to me one direction that such a study as the present might usefully take, and I determined to follow it. I am hopeful that you may allow that the result of my inquiry, which I will now submit to you, does support the correctness of my anticipation that there are different clinical types corresponding with different kinds of cardio-vascular degeneration, which can be and ought to be differentially diagnosed, and that in some instances at least of complex causation they can be disentangled and the respective elements at least duly appreciated.

RELATIVE FREQUENCY OF CAUSES.

But first let me tell you what I have found to be the relative frequency as causes of cardio-vascular degeneration of the influences in our every-day life that are generally accepted as producing it. For the present I will not attempt to classify them nor to suggest in which of the several possible ways they produce or promote degeneration.

In 100 cases of cardio-vascular degeneration taken casually from my records (92 of them men of the average age of 58½ years, eight of them women of the average age of 63½ years, at the date of observation) there was a history of syphilis in no less than 26. Acute febrile processes of extrinsic origin—due to micro-organisms or their toxins (which attack the arterial intima as they attack the endocardium)—are difficult to reckon statistically, for one or other of them has been at work in every individual who has reached middle age. Fifty per cent. in my series had had influenza, typhoid fever, acute pneumonia, or other disease of this order.

A group of universally accepted causes are the disorders of assimilation and metabolism; and of these glycosuria was present in 15 per cent., and gout in no less than 44 per cent. This group of causes brings arterio-sclerosis and cardiac degeneration into further etiological relations—with over-eating, with excessive indulgence in certain elements of food, with insufficient exercise, and still more remotely with nervous depression and habits that provoke indigestion, constipation and malassimilation.

In 31 per cent. of my series I obtained a history of either free or excessive indulgence in alcohol. Tobacco, an exceedingly common cause of cardiac disorder (in rare instances, indeed, of death through the heart), does not, in my experience, produce either enlargement of the heart or thickening of the arteries, and but for its incidental effect on a circulation enfeebled by degeneration of other origin it might be ruled out of the list.

I referred a few minutes ago to the influences of an entirely different class—the dynamic—that fall upon the organs of circulation and damage them when excessive more particularly in middle and advanced life. These are the stresses of a physical kind. Muscular exertion, in laborious occupations, in sport, or by accident, was present in 19 per cent. of the cases in my present series, no doubt usually associated with other possible causes. Allied to the physical stress of muscular effort, but different in being continuous and far more grave in its effects on the circulation, is that form of high intra-cardiac and intra-vascular pressure which goes by the name of "arterial tension." This is a common accompaniment of the causes I have already named, because an effect of some of them, and, as we have just seen, an effect of the sclerosis of arteries and viscera produced by some of them, alcohol especially. I shall be excused from attempting to name a figure of percentage-frequency under this head and that of granular kidney, which, as I have already said, I have excluded from my series.

Almost as difficult is it to satisfy oneself in an inquiry of this description how far nervous stress may be reasonably charged with the production of arterial sclerosis and disease of the heart. I shall return to this question at the proper time; but meanwhile let me say that the great majority of the 100 cases which I analysed for etiological purposes were men working with their heads rather than with their hands, and that in 31 of them such work involved directly or incidentally worry and anxiety sufficient to constitute a complaint.

It will have been gathered from these percentages that in many instances two or more accepted causes fell together; and, as I have said, one of the interests in the study, and one of my objects in the preparation of this communication, was to attempt to distinguish them.

CASES DUE TO "WEAR AND TEAR."

One other point I would discuss here in taking leave of the subject of causation in general. In a small number of instances of cardio-vascular degeneration not one of these influences which I have called its "recognised" causes was found to be, or to have been, at work, unless it were an infective fever. The majority of such subjects were of advanced age, but others had not reached 60. How had their circulation given way? The character of their symptoms and the course of their cases were not those which we connect with the unknown x. It is these cases that I would label "wear and tear." Sir Clifford Allbutt appears to employ this name as synonymous with mechanical stress. Perhaps he would not object to my using it in a more comprehensive sense—to cover "the thousand natural shocks that flesh is heir to," psychical as well as physical. Sooner or later every individual who has escaped greater, irresistible shocks—mechanical injuries, poisons, virulent infections and the rest—yields to the forces around him. Not a single overwhelming event nor several severe attacks, but a series of small, insidious, mostly unperceived actions upon his circulation, of an unfavourable character, as numerous as his own days, make physiological response to the circumstances of life ultimately an impossibility. This is what I would call wear and tear.

The pathological anatomy of this type of case, which appears to correspond with Sir Clifford Allbutt's "decrescent" or "involutionary" form, has been very closely studied during recent years, particularly in America, by several observers, under the inspiring influence and example of our distinguished Member, Professor Adami. They have described to us the manner in which the effects of wear and tear of ordinary life are represented by changes in the different elements of the cardiac and vascular walls. No doubt in some of these instances a family disposition or predisposition can be traced. But let me hasten to add that neither in this connexion nor in any other connexion is inheritance to be reckoned amongst the causes of degeneration. Inheritance concerns the resistance of tissues to the influence of disease; and family proclivity plays its part in the production of cardio-vascular degeneration, not as an essential cause, but as a defect in the provisions for resistance, a defect either in the material or in the mechanism of the organs of circulation.

I will now take up the generally accepted causes of degeneration of the heart and arteries in an order that favours their differentiation, beginning with syphilis.

SYPHILIS.

There are obvious advantages in the selection of syphilis as the first of the recognised causes of cardio-vascular

degeneration to be studied in our present connexion. Syphilis is one of the most common of causes that we have found, occurring as it does in 26 of my 100 cases. It is definitely specific in its nature—that is, due to an extrinsic parasitic influence of known characters. And further, we have no difficulty in finding cases of cardio-vascular disease in which it is the only cause that can be reasonably accepted. For these reasons syphilis is of all the causes of cardio-vascular disease the one that might be expected to present characteristic clinical features and a characteristic course, and to be capable of being identified by its effects even when associated with other causes. How far this is the case will be gathered from a summary of the results of a clinical study of 70 odd cases which I collected and analysed.

FIRST MANIFESTATIONS.

In this series the first manifestations of syphilis at the root of the aorta and in the heart occurred at the average age of 49, 25 years (again on an average) after the primary infection, with a maximum interval of 54 years and a minimum of five years. It is a question of practical interest to us what the condition of the root of the aorta may have been in these cases in the interval between primary infection and the earliest local symptoms. It is highly probable that in spite of its latency clinically—that is, the absence of symptoms—syphilitic aortitis has existed and been slowly progressing in area for years before it declares itself unmistakeably to the patient and the clinical observer. The proper age of aneurysm of the aorta—"the prime," as Sir Clifford Allbutt says, "when muscular stress and syphilis work together"—practically proves this. At the later age which my patients had reached the evidences of syphilitic invasion of the aortic root and the cardiac valves were developed so gradually in the majority of instances—as a rule in the form of presternal oppression on exertion—as to support the same view. When symptoms were suddenly developed, as they were in a few instances, it was clear that they were symptoms of fresh or further damage of already diseased structures.

Thus a retired soldier of 71, with a remote specific history, was suddenly seized with pain in the sternum and at both elbows in stooping to lace his boots. Although he had felt and believed himself to be sound, he proved to have dulness over the manubrium, an aortic systolic murmur, and tortuous thickened radials; and he continued to suffer pain for days, even in bed. No doubt sudden movement and interference with respiration in the stooping posture strained a small area of the arch that had long been diseased. A man of 51, who had had syphilis as a lad and no manifestation of its activity in the interval, was suddenly taken with pain over the manubrium and down the left arm, accompanied by faintness, at the end of a hearty luncheon with brandy and cigars. The pain, once begun, continued to be so severe as to demand repeated doses of morphine, and when I saw him within three weeks of the attack I found a double aortic murmur. And I have known the first manifestation of syphilis of the centre of the circulation to be sudden cardiac failure threatening dissolution, consequent on careless living. Probably sudden death from this disease, so frequent a manner of its termination, may be the first evidence of its existence in some instances.

Notwithstanding such proofs of the existence of syphilis in the walls of the aorta, the length of the average interval that I have named between infection and the first symptoms—25 years—proves sufficiently that the disease is in great measure successfully controlled by the nutritional vigour of the blood and tissues, ready, no doubt, to assert its existence and activity if the general health be lowered or the invaded parts be damaged. Have we any evidence as to the nature of the change that may be developed in the patient's condition or of the incident that may occur to lower the vigour of the local provisions for nutrition that have restrained and localised the action of the spirochæte for 25 years? Almost necessarily it is a cause that is not efficient in earlier years like physical stress; it must be some influence that comes into play about the age of 45 or 50, associated with the habits, concerns and circumstances generally of middle age, and the effect of these on the activity of the processes of general metabolism. I made careful inquiry on this subject in a number of my patients. I found a history of free indulgence in alcohol in 36 per cent. of them, of gout in 27·5 per cent., while 30 per cent. had albuminuria, and 2·5 per cent. glycosuria. To these unfavourable influences have to be added other causes of reduced tissue-resistance that so often characterise middle life, including nervous disturbance in the forms of worry, anxiety and misfortune. In only 10 per cent. of my cases was there evidence of physical stress.

It may occur to some of my hearers that the causes other than syphilis which I have just named as contributory or precipitating, not syphilis itself, ought to be credited with the production of the lesions in the aorta and heart. I hope to prove to you in my next lecture that the pathological effects of alcohol and gout and glycosuria and nervous stress on the vascular and cardiac tissues are so different anatomically from those of syphilis that their true etiological relations cannot be mistaken. The bearing of these facts upon the prognosis and general treatment of syphilitic subjects will be dealt with later on.

SYMPTOMS AND SIGNS.

Coming now to the symptoms and signs of syphilis of the cardio-vascular system as far as the present study extends, let me say at once that they were mainly those which characterise affections of the arch and root of the aorta, including the coronaries and the semilunar valves but excluding aneurysm. Pain was the prominent complaint in more than one-half of the cases (60 per cent.). It was anginal in 30 per cent., præcordial in 30 per cent. Dyspnœa was also complained of in 60 per cent., and palpitation in 57·5 per cent.; faintness or actual faints in 45 per cent.; præcordial oppression in 10 per cent. Cerebral disturbances and other less direct symptoms were variously mentioned.

Of all kinds of cardio-vascular degeneration syphilis presents the most obviously morbid signs on physical examination. In half of my cases I found a systolic murmur over the root of the aorta, more or less well marked; and in no less than 60 per cent. of the same cases an aortic diastolic murmur. Whether with or without a diastolic murmur the second aortic sound was loud and ringing in nearly one-third of the patients. On the other hand, an apical systolic murmur was heard in only one-tenth of all the cases; and in one-half of these it was imperfectly developed. This is a point to which I desire to draw your particular attention as of diagnostic value.

The other physical signs connected with the heart and aortic arch may be said to correspond with those described. In one-third of the cases there was presternal dulness, and in a small proportion mediastinal crepitations. The præcordial dulness and impulse significant of hypertrophy and dilatation of the heart were not always as well marked as one finds in aortic lesions of rheumatic origin; but it must be remembered that patients suffering from cardio-vascular degeneration in the fifth decade commonly have some degree of emphysema and rigidity of the chest which interfere both with palpation and with percussion.

Is there anything in the pulse and other features of the radial artery that can be said to characterise syphilis? Certainly they are not exactly such as we might at first anticipate in one respect—namely, evidences of sclerosis. In more than one-third of my cases the walls were not thickened; and Corrigan's pulse was relatively rare. These characters of the radial artery are another evidence of a fact on which I wish to insist: that syphilis of the organs of circulation is a locally distributed disease; that the radial may be free whilst the aorta is involved; and that clinical evidence to this effect may be sufficient to enable us to diagnose it even if infection be denied by the patient, or if it be associated with one or more other causes. This clinical observation is confirmed by pathological results. Huchard says that syphilis has no great tendency to be generalised, and is more often circumscribed—limited to one or several vessels. Dr. Mott agrees with this statement.

Another conclusion would appear to follow from the soundness of the radial in so many instances of syphilis. The aortic valvular lesions cannot well be of such degree to disturb the pressure greatly in the peripheral arteries, and in accordance with this conclusion is my observation that the diastolic aortic murmur and—as I have just said—the præcordial impulse are often weak. Other interesting features of the pulse in this disease are its regularity (80 per cent.), considering the severity of the lesions and the age of the patients, and the absence of intermittency. That the

diastolic pressure should be low or moderate in 75 per cent. of cases follows from the frequency of aortic incompetence.

If we now review the clinical characters of this group of cases I believe you will agree with me that they constitute a body of evidence which may substantially serve to differentiate syphilis from other causes of the disease. But you may not be prepared to do so until the character of the other groups have been submitted to your attention and judgment

CLINICAL COURSE.

The clinical course of syphilis of the root of the aorta and heart (excluding aneurysm) is more often slow, but life throughout is entirely insecure, and the duration of the disease when it has become distinctly declared is relatively short. I have made inquiries as to the progress of the cases whose symptoms and signs I have just analysed. The result of the inquiry is full of interest, particularly in its prognostic bearings. Complete records up to the present year in the case of the living, and up to the date of death in fatal cases, were obtained in respect of 48 patients whom I had seen during the previous 13 years. Exactly one-half of them survive and have reached the average age of 55 years. Some are disabled; others are said to be well and at work. The other 50 per cent. have died, at the average of 52 years: 25 per cent. of them suddenly; 21 per cent. from cardiac failure, with dropsy; 4 per cent. with apoplexy; 8 per cent. from aneurysm; 4 per cent. with Bright's disease; and a few from diseases unconnected with syphilis, or obscure, or of undetermined nature.

The average duration of the disease from the date of the first symptoms in the circulation in the 24 patients still living proves to be 4·6 years; in the 24 fatal cases it was 5·3 years. These figures afford striking evidence of the gravity of syphilis of the heart and aorta, and justify my contention that the question of causation should never be neglected in the diagnosis of cardio-vascular degeneration. But let me repeat that the figures are averages only, and represent neither the insecurity of life that characterises syphilis, nor the occasional quiescence of it for a considerable period. From the first recognisable symptom till death the duration in two instances was but a few months. On the other hand, one of the patients still living had his first cardiac symptom 23 years ago.

Once recognised, the disease may be watched pursuing a different course in different cases. Activity, as manifested more particularly by pain, may continue unchecked, the patient being unable to take exercise without suffering. But in the majority of instances treatment based on correct diagnosis comes to his relief for a time. Under complete rest and anti-syphilitic medication, pain is controlled, and presently it disappears, and quiet occupation may be safely resumed. Neglect of precautions is readily followed by an attack of angina, which drives the patient once more to bed. Meanwhile physical examination may reveal the progress of the disease, as it were, anatomically. A diastolic murmur makes its appearance, significant of descent of the syphilitic process on the area of the aortic valves. But, as we saw in connexion with the physical signs, the mitral cusps commonly remain intact. My observations to this effect confirm Sir Clifford Allbutt's statement that in syphilis of the heart and aorta the heart below the aortic valves, save for some endocardial opacities, is healthy. The area of manubrial dulness extends, consequent on aortic dilatation, and other signs and the symptoms of aneurysm of the arch may be developed. In one case, that of a woman, invasion of the mediastinal tissues was traced from its commencement to the sudden death of the patient. In other instances advance moves in the direction of the myocardium—through the coronaries, which are found post mortem to be affected in no less than 71 per cent. of visceral syphilis, according to Hirschfelder. Short of sudden death, the walls of the heart undergo slow degeneration, and the ordinary symptoms of cardiac failure make their appearance. Or the effects of syphilis on the brain, kidneys and other organs complicate the clinical picture, and possibly carry off the patient.

Syphilis obviously is to be classed among the causes that produce disease of the heart and arteries solely by damaging the substance of their walls. There is no question here of high blood pressure being concerned in the production of the primary lesions. But these lesions once produced yield to ordinary, much more to extraordinary, internal pressure; and some of their pathological characters, both destructive and constructive, are thus to be accounted for.

AN ABSTRACT OF

The Samuel Hyde Memorial Lectures

ON

OUTLINES OF MEDICAL HYDROLOGY.

Delivered before the Balneological and Climatological Section of the Royal Society of Medicine on May 15th, 17th, and 19th, 1911.

BY R. FORTESCUE FOX, M.D. LOND., F.R.MET.S.

LECTURE II.[1]

Delivered on May 17th.

MODERN HYDROTHERAPY.

THIS is the branch of medical hydrology which has to do with the use of water solely as a vehicle of energy. The foundations were laid in England by Floyer (1697), Wright (1779), and Currie (1797), whose teaching was zealously followed abroad. The methods of Currie were introduced by Franck into the hospitals of Vienna in 1803, and it is said that the typhus epidemics of 1811, 1812, and 1814 were largely treated by cool baths. The nineteenth century witnessed the popular movement led by Priessnitz (1830), which became systematised as "hydropathy," and may be regarded as a protest, not only against an artificial pharmacology, but against the general therapeutic scepticism to which this pharmacology had led in the middle of the last century. It is evident therefore that the ground was well prepared for the advances of any physical method that appeared to offer a substantial hope of combating disease. Unfortunately, this treatment, on the whole and in most cases, fell into the hands of irregular practitioners, with whom "hydropathy" became an exclusive system, and the profession at large was estranged from its employment. The new system shared the fate of every other system in medicine. It was too systematic to be finally true.

But in Germany, upon the heels of Priessnitz began another and a very different movement. The effects of water upon the human body were for the first time submitted to experimental research. A long series of investigations was commenced, having for their object to ascertain the effects of water at different temperatures, and of mechanical stimulation, upon the circulation, upon the nerve centres, and upon the general metabolism. The *reaction* of the living tissues, and especially the all-important *reaction to cold*, upon which the whole effect of cold baths depends, were now for the first time accurately observed. A beginning was also made in describing the variations of reaction in health and in disease. As a result of many experimental and clinical studies the indications for baths of different temperatures have been provisionally laid down, and rules of practice formulated. Among a great number of workers in Germany and Austria who have contributed to this research Professor Winternitz of Vienna holds the foremost place. At Berlin the "University Hydrotherapeutic Institution" was opened at the Charité in 1901, and placed under the care of Professor Brieger. In 1905 it was incorporated with the University Polyclinic, of which it became the hydrotherapeutic section for purposes both of treatment and teaching. The extent and importance of the practice may be inferred from the fact that last year between 5000 and 6000 persons were there treated. At Munich the Bavarian Government has added a complete and elaborate hydrotherapeutic equipment to the University clinic. Leipsic, Heidelberg, Tübingen, and Jena have also university clinics for hydrotherapy. That of Jena was founded in 1890 and has furnished opportunity for the valuable Text-book of Clinical Hydrotherapy by Mathes.

The establishments for water treatment that have been founded in France and the entire therapeutic procedure have been placed under skilled medical direction. This practice has therefore to a much greater extent than in England taken its place as a recognised branch of therapeutics, especially in chronic and nervous affections. The douche bath, which in its various forms has, as we have seen, been brought to a high pitch of perfection in France, was extensively

[1] Lecture I. was published in THE LANCET of July 1st, 1911, p. 6.

employed by Charcot. It is more than 50 years since the first institutions for treatment of this kind were set up in Paris under skilled medical direction, such as those of Beni-Barde and Keller. There is now a similar provision for medical practitioners in most of the great towns in France, and in many cases suitable baths are attached to hospitals, which are available for the use of all medical men.

In the United States modern hydrotherapy was introduced soon after Currie's work was published, but, as in England, with excesses that brought about a speedy reaction. In recent years the translation of the *magnum opus* of Winternitz (1884) and the valuable work of American writers have brought about a revival of the practice upon rational lines. Dr. Baruch now holds the chair of hydrotherapy in the University of Columbia—the first appointment of this kind in America. Well-appointed establishments have been founded in several cities in America, where baths and other water treatments are given under the observation and direction of trained physicians.

Statements are now made regarding hydrotherapy which are sufficiently striking in their character: that by it we can influence both acute and chronic disease by modifying physiological and pathological processes, not alone in one organ or tissue, but throughout the body, and can check the excessive reaction of acute disorders. In part this is a revival and amplification of older doctrine, of the teachings of the seventeenth and eighteenth centuries. What is new, and cannot fail to impress the candid mind, is the body of research that now lies behind them. It challenges examination and criticism at every point. Is it possible to disregard such a mass of evidence? The best answer to this question would be a complete experimental investigation upon English soil into the properties and uses of waters at different temperatures. We have as yet no Institute of Hydrology in this country, but I do not despair of such a research being some day accomplished.

FORMS OF HYDROTHERAPY IN CHRONIC DISEASE.

Certain forms of hydrotherapy in chronic disease have more particularly come under my own observation. Three distinct phases of treatment may be distinguished according to temperature in relation to the body. First, *plus* applications of heat; secondly, *plus* applications followed by *minus;* thirdly, *minus* applications.

1. *Brief hyperthermal baths.*—For many years I have used and valued these baths in a variety of chronic circulatory conditions. Chief among them is the state of habitual chilliness, and defective peripheral circulation and catarrh, met with in many persons in our country, often young persons of gouty inheritance. The deficiency of bodily heat appears to be conserved by a protective contraction of the peripheral vessels. The blood temperature is subnormal, that of the skin much more so. These are the subjects of internal congestion, intestinal irritability, and catarrh. The abnormal condition of the skin is matched by a corresponding disturbance of the mucous membranes. Such individuals are temporarily cured in a hot climate. They are in the same manner relieved by a course of hyperthermal baths. The temperature of the bath may in many cases be made to increase by daily increments of one degree from 108° or 110° to 115°, 118°, or even 120°. The duration of the bath is from one to one and a half, or at most two and a half minutes. The brief bath gives time for the primary stimulant operation of heat. The secondary and depressing effects that would follow a more prolonged bath are not developed. This practice was suggested to me by the natural hyperthermal baths of Japan. Local hyperthermal baths can be suitably employed in many cases of chronic traumatism, and in arthritis and neuritis where pain and atrophic and degenerative changes are to be attributed to a habitual deficiency of blood-supply.

The following methods illustrate the wide range and therapeutic value of the effects that are produced by minus applications.

2. *The cool or cold douche.*—This procedure is one necessarily of brief duration. It is comparable to the hyperthermal bath, inasmuch as it evokes the primary and stimulating results of thermal applications, but by brevity of application excludes those that are secondary and debilitating. I can add my testimony to that of others who claim for the cool douche a valuable place in the treatment of anæmia, in neurasthenia, and other functional nervous disorders, and to this I would add many cases of degenerative arthritis. It must be remarked that in douches having an appreciable pressure the effects of mechanical excitation are added to those of temperature.

3. *The subthermal douche bath, without pressure.*—I cite this mode of hydrotherapy as one that is but little appreciated in this country, although in my opinion of the greatest value. It is applicable to many of the more serious forms of cardiac disease, in which immersion baths are contra-indicated. The water flows over the patient, seated or reclining, without mechanical excitation, and with a temperature at or about that of the skin. The gentlest massage may be combined with this applicable. The whole effect is to soothe and stimulate the heart's action, and by opening up the peripheral circulation to relieve stasis and unequal distribution of the blood. The good effects of the bath depend on the nice adjustment of temperature and duration, with suitable precautions against fatigue.

POSITION OF HYDROTHERAPY IN ENGLAND.

It is remarkable that whilst modern hydrotherapy has taken a prominent place in the medical practice of nearly every civilised country, in England it is still comparatively unknown to us. It would almost seem that this country has been in two successive centuries so thoroughly inoculated with the empirical virus that it remains immune to the invasion of legitimate science. Here and there methods of hydrotherapy are studied and applied by practitioners, particularly at the mineral spas, but by the general body of medical men they are for the most part ignored, or employed for their patients in the least favourable manner, without the necessary exactitude and under the direction of persons who have received no medical instruction or technical training. Nor is it taught at any of our schools. British medicine cannot compare at present in these respects with the practice of Germany, Austria, Italy, America, and France.

For many years I have been impressed by the need for suitable Institutes of Hydrotherapy in this country. They might well be modelled on the pattern of the baths at Boston, open to the use of all medical practitioners, under skilled professional control, and served by attendants trained in the technique and in the use of instruments of precision. From such institutions the services of the attendants would be available outside for the treatment of acute disease. Within its walls many physicians who have to deal with chronic disorders would find new and unexpected possibilities. And the remedies would be applied, as they should be applied, under their own care and observation. Moreover, the great interest of conducting a course of physical treatment, with the necessary skilled assistance, would stimulate many medical men to independent research, and would in time confer educational value upon an institute of this kind. What I have said applies to most of our large towns, but especially to London.

In the western division of Glasgow there has lately been opened an establishment of medical baths, which are given by skilled attendants and under medical prescription. There is also in London the new Alexandra Institute of Baths which is conducted on similar lines, but I am not aware of any others in this country that are at all comparable to the hydrotherapeutic institutes existing in the other countries to which I have referred.

In many of our hospitals baths are employed, but not, so far as my information goes, to a considerable extent, either for acute or chronic maladies. We have witnessed the zeal with which in late years phototherapy, electrotherapy, radiotherapy, and treatment by massage and movements have been introduced into the hospitals and into general practice. I cast no doubt upon new treatments by entering this plea for a much older one. I am informed that at Guy's Hospital during the last year 43,000 treatments were given in the new department of electrotherapy and actinotherapy. How many of the patients so treated would have derived equal benefit from applications of hydrotherapy given with as much skill and precision! It is no doubt because during recent years we have called in aid so many physical agencies in medical treatment, both for the prevention and cure of disease, that a new hopefulness is abroad. We no longer despair of tuberculosis or even of cancer. We realise that there is a vast field open to us for increasing the resistance of the tissues to pathogenic invasion, and that this is, *par excellence*, the field of physical therapy.

In conclusion, we must acknowledge that there is a mass of evidence that diseased conditions can be controlled by applications of temperature in a watery medium. In our own lifetime there has been gathered together in reference to this subject as goodly a body of ascertained facts as can be found in any department of medicine.

But it may be said, Shall we touch what has been, or may be, in the hands of unworthy professors? Surely the extravagant or irrational use of a remedy should not prevent us from employing it wisely. Is it possible that we are willing to alienate a branch of therapeutics and yield up to the control of others what belongs to ourselves in trust?

Again, it may be said by some—perhaps by the practitioner at the mineral spa—How are we concerned with it? My answer to that is that the study of the laws of hydrotherapy, as we have received it in our generation, is an indispensable preliminary to his work. They form the very groundwork of his practice. Water cannot be separated from waters.

LECTURE III.

Delivered on May 19th.

THE MEDICINAL SPRING.

IN England there is no convenient name for the science dealing with the properties and uses of the medicinal spring—*crénotherapie* of the French, *heilquellenlehre* of the Germans. Health-spring lore must be regarded as a definite self-contained department of knowledge. The faith of mankind in waters rather increases with civilisation, and must be regarded as permanent. The primitive view attributed their virtues, as of all medicinal agents, to miraculous powers, and this belief was fitted to the old doctrine of possession in disease. Later, according to the humoral theory, the action of waters consisted in the elimination of peccant humours. Then with the growth of chemistry came the opinion that waters acted solely in virtue of their chemical ingredients as shown by analysis. This attractive explanation was in turn found not to cover all the facts, for "paradoxical" and "indifferent" waters produced effects out of proportion to the quantity or quality of their ingredients. In short, the known chemical constitution of many springs does not explain their action. We do not know the combination and dissociation of the elements, and the power one may possess in modifying the effects of another. It is believed in France that metals exist in some waters in the colloidal state, and probably act as ferments.

According to another view it is the water only that counts, and the particular qualities of the spring are negligible. This is not in accordance with experience. A bath of the natural water at Buxton produces a certain effect, a similar one at Droitwich a second, and one at Strathpeffer a third. These and such-like exhibit differentia which are superadded to something they have in common. The same remark applies to waters taken internally—at Bath, Harrogate, and Llandrindod. Much importance attaches to the *form* in which the ingredients are presented in solution. It seems that very dilute solutions are sometimes the most active. Jacoby points out that free motility of the particles of matter is essential to active metabolic processes. Water has the property of taking up molecules produced in dissociation, rendering them fluid and mobile and increasing their chemical activity. In many medicinal waters it is supposed that the saline constituents are in a state of complete dissociation (ionisation).

We here touch upon interesting and undetermined questions as to the range of active dosage, and as to the most favourable form of matter for absorption and assimilation. Recent knowledge does not appear to warrant dogmatic statements with reference to the inactivity of minute doses when presented in an assimilable form. The problem of treatment by many drugs is now no longer a question of "how much," but how to get the drug into the tissues, a problem which in my belief is often solved by medicinal waters. The osmotic pressure or tonicity of waters will probably have an important bearing upon their uses in future years. There is nothing to discourage the hope that many chronic tuberculous and pretuberculous conditions might be treated advantageously by hypodermic injections of diluted sea water and other natural salt water. It is premature as yet to attribute particular results to the radio-activity and electric properties of water. The effect of nitrogen and its congeners in waters like those of Buxton deserves further investigation. Carbonic acid gas in medicinal waters, whether taken internally or used as baths, powerfully modifies the action.

MODE OF ACTION OF MEDICINAL WATERS.

The treatment by means of medicinal springs concerns itself only with chronic disorders and morbid tendencies. It resembles the malady in being gradual, and it acts by absorption and by reiterated impression. The double appeal to the mucous membranes and to the skin was well understood by the early physicians. Waters and baths were called in aid for their purgative, diuretic, and diaphoretic effects. Although far from being the whole rationale of spa treatment, increased elimination from the bowel, the kidney, and the skin is an essential part of it. It is founded upon a humoral doctrine which still holds the field. Waters and baths also operate directly upon the circulation of the blood and upon the nerve centres, and so indirectly upon the general nutrition.

In chronic disorders the reaction of the tissues is perverted or inefficient. In place of the effectual reaction in acute disease, reaction is now imperfect, smouldering, and ineffectual. It is particularly for these more or less general chronic tissue disorders, which precede local and acute disease and furnish the soil for specific invasions, that spa treatment has its application. It is possible by the use of waters and baths to restore the healthy reaction of affected tissues. We know that in virtue of their selective or specific actions particular toxins cause a local neuritis, arsenic sets up or removes cutaneous changes, and iodine resolves deposits in connective tissues. By a similar selective action particular medicinal waters operate at the seat of disturbance. A certain striking increase of reaction signalises the conversion of the chronic process into one of a more acute character. As the lecturer has elsewhere shown,[1] this *intensive* action belongs to the natural process of cure, and its production is one of the chief principles in the treatment of chronic disease. *The intensive method* is at the foundation of hydrological medicine. Many waters and baths "bring out" the symptoms. Were this not so, the treatment would often be fruitless. The spa practitioner is concerned to watch these changes of phase, and in order to moderate the new reaction it may be well to combine with intensive and stimulant methods those of a more sedative character.

During the past century a mass of evidence has been accumulated as to the actual conditions in chronic disease, indicating the lines upon which treatment should be applied. It must in future be the aim of the physician to restore the normal resistance to invasion, to promote the elimination of toxins, and to allay nervous irritation and disturbances of circulation. On the other hand, we have a corresponding mass of evidence showing the effects of baths and waters upon nutrition, metabolism, and elimination, and upon nervous and circulatory disorders. From two sides, therefore, light has been focussed upon medical hydrology. Only in our time has it been established: first, that chronic disease depends upon intimate tissue disorders, with consecutive circulatory and nervous disturbance; and secondly, that waters and baths by their eliminative, sedative, stimulant, and intensive actions provide for this class of disorders an adequate treatment. It only remains to secure the recognition of hydrotherapy and the medicinal spring (medical hydrology) by the teaching bodies in the profession.

THE TEACHING OF MEDICAL HYDROLOGY.

Taking the countries as a whole, in France there is one chair of hydrology, and lectures are given by professors agrégés at the various universities from time to time. In Germany there is one chair of hydrotherapeutics, and regular lectures are given in both branches of hydrology at ten of the universities. In Austria and Hungary there is one chair of balneology, and lectures are given in both branches at Vienna, Prague, and Budapest. In Italy there is no chair, but there are "free teachers" at five universities. There are also free teachers in the Universities of Switzerland, Holland, Belgium, and Sweden; and in America there is one chair in hydrotherapy. Most of these educational facilities have been provided within the last 20 years. In general, the subject has not been made obligatory, and lecturers sometimes write "not an examination subject, therefore the lectures are badly attended." But at some universities questions on hydrology are included in the medical examinations. At the

[1] THE LANCET, April 23rd, 1910, p. 1115.

Columbia University hydrotherapy is a necessary part of the curriculum, and at certain universities in Germany.

If we are right in thinking that physical therapeutics, and especially medical hydrology and climatology, have taken, and are destined to hold, a large part in medical treatment, especially in chronic disease, surely it follows that these subjects must be taught as an essential part of a medical education. If it be objected that it is impossible to extend an already overloaded curriculum, it may be questioned in reply whether it is the instruction in therapeutics that ought to be omitted. Has not medical practice already run far in advance of systematic teaching? To point out the entire absence of this teaching from Britain is tantamount to urging the necessity for it. How would it affect the general practitioner? If this practice and teaching were cultivated in Britain it would open to him the resources of scientific hydrotherapy. How would it affect the practitioner at the British health resorts? We need scientists and observers at every health resort, whether a climatic or a hydromineral station. Undoubtedly many of the practitioners at our spas have, to their honour, qualified themselves by scientific studies for their special work. But is it not certain that in future years a medical man duly instructed in hydrology, and holding a British diploma in hydrology, will be a better spa physician than one who has enjoyed no facilities for instruction and qualification in the department of medicine to which his work belongs? It must needs be that the due qualification of the health resort practitioner is in the best interests of the profession at large.

Again, it may be said that there is less need for a chair of hydrology in our country, as compared with France or Germany, because our medicinal springs are comparatively few in number. But London is, or ought to be, in medicine also, the capital of the Empire. Twelve years ago I had occasion to make some inquiry as to the medicinal springs of India, in which I was much beholden to Sir George Birdwood and the late Sir Joseph Fayrer. The conclusion arrived at was that we have in India one of the most valuable and extensive and varied. if not the most valuable, group of medicinal springs in the world, many of them situated in fine climatic stations. I will only mention the Hazaribagh district in Bengal, where the country for more than 100 miles in all directions is teeming with thermal springs at an elevation of about 1500 feet, and the remarkable Tawala Mukhi (Flame's mouth) in the Kangra district of the Punjab. A recent inquiry at the India Office elicits the surprising fact that up to the present time there has been no scientific report made upon the mineral waters of India. The thermal springs of New Zealand form another group of exceptional value and interest, a fact which, I am happy to say, has been recognised by the Government of that colony.

RESECTION OF THE POSTERIOR NERVE ROOTS OF SPINAL CORD.[1]

BY PROFESSOR FÖRSTER OF BRESLAU.

FIRST of all I wish to thank you most sincerely for your kind invitation to this meeting of the Surgical Section of the Royal Society of Medicine. I am conscious of the great honour you have bestowed upon me by allowing me to attend your illustrious assembly. I would also express my deepest gratitude to Mr. Hey Groves for his kind words of welcome. At the same time I feel particularly glad to take part myself in this discussion on the resection of the posterior nerve roots of the spinal cord, since my own researches on this subject have received the greatest stimulus from English workers, especially from the discoveries of Sherrington and Dr. Henry Head. I need not mention before this audience how much we are indebted to Sherrington for all our knowledge of the physiology of the posterior spinal nerve roots, and that the work of Head on the disturbances of sensation in diseases of the viscera represents the most valuable document of our knowledge of the sensory nerve-supply to the internal organs.

Resection of the posterior spinal nerve roots for the relief of pain has already been carried out in the past in a considerable number of cases—e.g., by Abbe in 1888 in two cases of neuralgia of brachial plexus, by Sir Victor Horsley in two cases of severe neuralgia of the arm, by Chipault in five cases of neuralgia of the arm, by Giordano in a case of sciatica, and by Faure in a case of inoperable cancer of the uterus. In three cases of cancer of the spinal column Tietze and I performed resection of the posterior roots in order to relieve the fearful pain which radiated from these roots; but the results were only successful for a short time, since owing to the progress of the disease other roots were subsequently attacked. In 1900 Mingazini suggested resection of the posterior nerve roots in cases of locomotor ataxia with severe lightning pains, but the operation has not been actually performed until recently, when Hildebrand in 1910 cut two cervical nerve roots in a patient suffering from tabes; a relapse occurred. Enderlen performed resection of certain thoracic roots for severe girdle pain. Mr. Hey Groves has to-day reported to you a case in which also the pain remained. Last summer Gottstein and I cut the fourth and fifth lumbar and first sacral roots in a tabetic patient suffering from a perfectly localised neuralgia of the internal malleolus. For some weeks there was complete absence of pain, but afterwards it recurred as badly as before. I am inclined to believe that, if resection of the posterior nerve roots is to be performed at all in cases of tabes with lightning pains, it will be necessary to remove all the roots of one extremity at once, for we never know with absolute certainty which roots are particularly influenced by the morbid stimuli, and there is considerable overlapping of the regions supplied by the different roots. Thus, in our case of tabes the resection of three roots was not followed by any sensory disturbances.

When I suggested performing resection of certain posterior thoracic roots in cases of visceral crises I was influenced by a consideration of the severe pain and symptoms of sensory irritation, which form the basis of these crises, and of the often enormously increased hyperæsthesia of the skin of the epi-, meso-, and hypo-gastrium which accompanies the crisis. In the manner in which patients are wont to describe and localise the pain in gastric crises, and in the abdominal hyperæsthesia, such crises show a marked resemblance to the sensory symptoms observed with certain organic diseases of the stomach, notably gastric ulcer, as well as diseases of the liver, gall-bladder, and intestine. With these diseases, also, marked hyperæsthesia of certain parts of the chest and abdomen occurs very frequently, as has been shown by the classical investigations of Head. I was thus led to the view that the gastric and intestinal crises in tabes were caused by an irritation of the sensory sympathetic fibres of these organs which enter the spinal cord through certain posterior thoracic roots. Supposing this view to be correct, the crises would cease after the resection of these roots. The operation has now been performed altogether 25 times, as shown by the following tabular list:—

25 Cases of Gastric Crises (22 Survived; 3 deaths).

20 successful ... ... 2 not benefited.

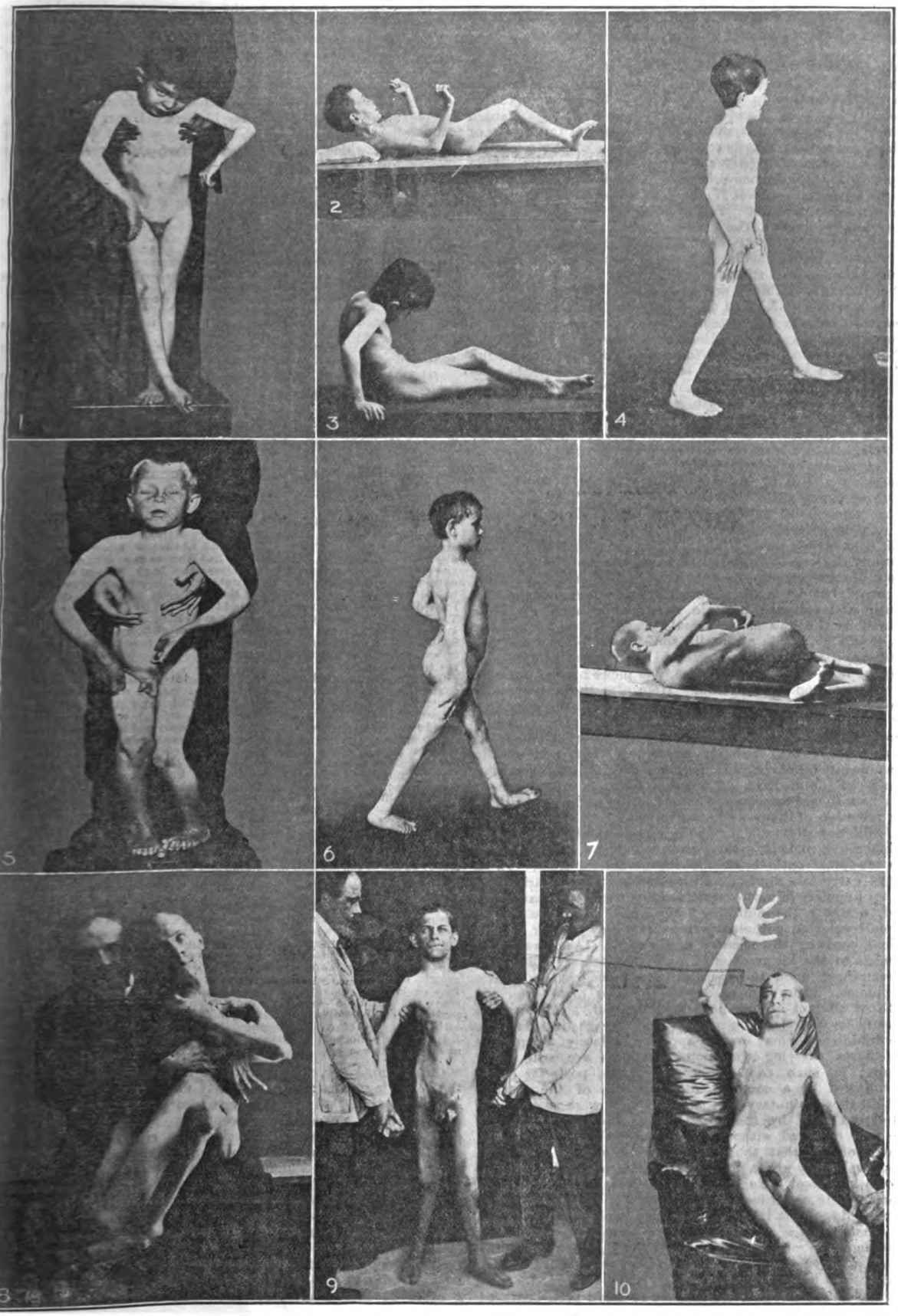
		Interval between operation and publication.
No relapse. 13 cases.	1 Küttner	5 months.
	1 Küttner	1½ years.
	1 Haan	7 weeks.
	1 Goetzel	3 months.
	1 Becker	3 ,,
	1 Guleke	2 ,,
	2 Nonne	Interval not stated.
	1 Sänger	
	2 Sick	
	1 Franke	
	1 Franke	
Relapse. 7 cases.	1 Sauerbruch	—
	3 Tietze-Förster	
	3 Guleke	

Three cases succumbed to the immediate effects of the operation; two showed no improvement, the crises persisting.

DESCRIPTION OF ILLUSTRATIONS.

Figs. 1, 2, and 3 are from Case 2 before the operation. Fig. 1 is the patient supported in an upright position, showing the adductor spasms. Fig. 2 shows the slight amount to which the leg could be moved, and then only with associated movement of the neck and arms. Fig. 3 is the patient attempting to sit up. Fig. 4 is from the same case after operation, the patient walking with a long stride. Figs. 5 and 6 are from Case 3 before and after operation. Figs. 7 to 10 are from Case 4. Fig. 7, patient lying down with arms and legs flexed and distorted. Fig. 8, the patient supported in the author's arms. Fig. 9, after operation, the patient standing with assistance. Fig. 10, after operation, patient seated and raising one arm with outstretched fingers.

[1] A paper read at a meeting of the Surgical Section of the Royal Society of Medicine on June 13th, 1911.


1
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In the remaining 20 cases the operation was successful. Immediately after the resection of the roots the crises disappeared, the body weight increased greatly, and the general condition showed a marked improvement; some of the patients, who until then absolutely had been confined to their bed for some long time, have since regained their power to work. In the majority of these cases (13) no relapse has been reported. The period which has elapsed since the operation is shown in the table. In several of these cases there has been no recurrence of the crises for many months and even for over a year, although before the operation a continuous critical state had persisted. In the remainder of the cases (7) the crises ceased for a while, but subsequently recurred. Yet, even in these, the critical state has not returned. The crises only occur occasionally, at long intervals; they are of short duration and moderate intensity. Among this latter group of cases are three patients who have regained the power of earning their living, one of them being an architect and one a mason.

In a number of cases the result of the operation is not perfect, because the system of roots carrying sympathetic nerve fibres of gastro-intestinal origin is very extensive. By the method which has hitherto been practised of only cutting the seventh to ninth or the seventh to tenth thoracic roots the source of the crises is not always entirely eliminated. Probably the fifth and sixth, as well as the eleventh and twelfth, thoracic roots are also concerned. It is therefore desirable to remove as many of the nerve roots as possible, although naturally this increases the gravity of the operation. What is even more important is in every case to determine exactly the situation of the pain, the extent of the hyperæsthesia of the skin, and the site of its maximum intensity, since these data may possibly afford a guide which roots are chiefly irritated and concerned in causing the crises. In this connexion a publication by Guleke is of interest; in one patient the crises disappeared for a time after the resection of the seventh to the ninth thoracic roots. They recurred, but again disappeared after the resection of the tenth and eleventh thoracic roots. For such extensive resections Guleke's method would appear to be particularly well suited. While ordinarily the dura is opened and the posterior thoracic roots are resected close to the spinal cord, Guleke does not open the dura, but picks up the roots in their course outside the dura. Here also the anterior and posterior roots are enclosed in separate sheaths separable from one another with comparative ease. The posterior roots are then cut. We must, however, bear in mind that gastric crises may possibly arise from irritation of the pneumogastric nerve, and perhaps even of the vomiting centre in the medulla. All cases of gastric crises without any pain should be regarded as suspicious and as unsuitable for resection of the posterior nerve roots.

I will now discuss the value of resection of the posterior spinal nerve roots in spastic paralysis due to disease of the cortico-spinal path, especially the pyramidal tract. These paths carry two kinds of fibres—firstly, those bearing the motor impulse, injury to which causes paresis or paralysis; and, secondly, the inhibitory fibres which check the sensory stimuli entering perpetually into the grey matter of the spinal cord by the sensory nerve roots. As a result of damage to the latter class of fibres the sensory afflux acts unrestrained upon the muscles, thus causing the spastic symptoms. If in such cases the posterior roots—i.e., the path of afferent sensory impulses—are cut, the excess of sensory impulses is again reduced and the spastic symptoms are diminished or may even disappear completely. Frequently the fibres carrying the motor impulses are still fairly intact; in such cases resection of the posterior roots is followed by a complete disappearance of the spasms, and all those voluntary movements which were so seriously interfered with by the spastic resistance of the muscles are now executed without any difficulty. We may therefore conclude that the operation can only be successful where voluntary excitability of the muscles is still present to a certain extent. Further, this treatment can only cure those spastic conditions of the muscular system which are actually due to the influx of excessive sensory stimuli to the grey matter of the cord—i.e., only in true reflex spastic contraction of the muscles; on the other hand, resection of the posterior nerve roots cannot be successful in the muscular contractions of athetosis, chorea, mobile spasm; for this latter class of diseases, which have so often been confused with the former, are due to the direct pathological stimulation of motor centres and paths belonging to the cerebrum and mid-brain; they are therefore comparable to the epileptic convulsions which arise from a corresponding irritation of the motor centres of the brain. Resection of the posterior roots cannot eliminate the pathological stimulus of the centres. In all such cases it has therefore proved unsuccessful. The operation has hitherto been performed in 58 published cases, to which must be added 4 unpublished cases, 3 of which were operated upon by Küttner and 1 by Tietze, giving a total of 62 cases.

61 Cases of Spastic Paralysis (56 survived; 5 deaths).

37 cases of congenital spastic paraplegia (Little's disease): successful; 1 not benefited.

3 cases of acquired cerebral spastic paraplegia: all successful.

4 cases of spinal spastic paralysis of traumatic origin: 2 successful; 2 not benefited (1 case wrong roots divided, 11 Th., 12 Th., 1 L; 1 case complete interruption of the cortico-spinal tracts).

1 case of spastic paraplegia from compression of the spinal cord (Pott's disease): successful.

2 cases of syphilitic spastic paraplegia (Erb): successful.

1 case of primary spastic paraplegia (? Erb-Charcot): successful.

2 cases of disseminated sclerosis: 1 case not benefited; 1 case successful, disease rapidly progressing, death.

7 cases of spastic paralysis of the arm: 5 cases benefited; 2 cases not successful—complete interruption of the cortico-spinal tract.

Of these, 5 died as the result of the operation and 57 survived. 38 of the survivors were cases of congenital spastic paraplegia (Little's disease); almost all these patients have been benefited by the operation, some of them showing a very marked improvement. I should like to demonstrate to you in pictures the extent of this improvement in some cases. The patients in question were operated upon by Küttner and myself, a part only of these cases having been published.

CASE 1.—Boy, aged 7 years. Severest rigidity of the limbs; unable to make the slightest voluntary movement, to sit, stand, or walk; the patient lies in bed like a log. Preliminary orthopædic treatment consisting in tenotomy of the Achilles and adductor tendons had been absolutely of no avail. The rigidity had the same extent as before; the paralysis was as complete as before; the legs were now held in extreme abduction with the same rigidity as they had previously been held in adduction. The result of the operation of root division was immediate cessation of the spasms and the return of voluntary motility. The boy now moves his legs freely; he even lifts one leg alone without any assistance; he can stand erect with straight knees, unaided, and walks quickly and safely on two crutches without any help. The improvement was maintained under the use of suitable exercises, and is still going on.

CASE 2.—Boy, aged 11 years. Severest rigidity; was able to carry out slight voluntary movements of the legs, but could only bend both legs a little at the same time, considerable subsidiary movements being carried out with the arms and head. The patient was quite unable to stand or to walk, and could not sit up even when assisted, the resistance of the extensors of the pelvis being insurmountable. After the operation the rigidity quite disappeared; voluntary movements of the legs are carried out freely, the patient being able to bend each leg by itself, to lift it up high without also bending the knee- and ankle-joint, and to sit, stand, and walk alone with long strides. (Figs. 1, 2, 3, and 4.)

CASE 3.—Boy, aged 10 years, with severe rigidity of the limbs and contraction of the flexors. Motility as in the previous case; the patient was unable to sit, stand, or walk. After the operation the spasticity quite disappeared and perfectly free motility was obtained, the patient being able to bend each leg independently or to lift it high up, and to abduct the legs widely; the patient stands and walks alone with long steps; he bends the leg well in walking and steps well forwards, mounts stairs without fatigue, and is out alone in the open for many hours. (Figs. 5 and 6.)

CASE 4.—Unpublished case. Severest spastic paralysis of all four limbs, the figures showing how arms and legs were inextricably interlocked, as it were, in a tangle. The patient was totally unable to carry out any voluntary movement, lay in bed huddled up, and, in addition, suffered from athetosis. Root resection was carried out here, both in the lumbo-sacral and the cervical part of the cord. The spasms were greatly improved. The patient can now lift up each leg separately. In standing and walking he has still to be supported on both sides, since the operation was carried out comparatively recently. The patient voluntarily lifts each arm up high, and can use his hands in eating and drinking. In another similar case of spastic diplegia Küttner has performed resection of the cervical, as well as the lumbar roots too, with success. (Figs. 7, 8, 9, and 10.)

On returning to a consideration of the table we next find the following cases: three patients with acquired cerebral spastic paralysis, all of which were treated successfully, one of them being a case of hydrocephalus with severe spastic paraplegia. There is also a considerable number of cases of spinal disease with spastic symptoms. Of 4 cases of spinal spastic paralysis of traumatic origin 2 were successful; of the remaining 2, which were failures, in one wrong roots were cut, whilst in the other the cortico-spinal fibres appear to have been completely interrupted; in this case the spasms disappeared, but voluntary motility did not return. In addition there was 1 case of Pott's disease which was successful; also 2 cases of syphilitic spastic paraplegia (Erb), successful; 1 case of primary spastic paraplegia (Erb-Charcot), successful; 2 cases of disseminated sclerosis, one of which was no

benefited, whilst the other was at first successful, but subsequently the disease progressed rapidly and the patient died. Of 7 cases of spastic paralysis of the arm 5 were successful—one of these being Case 4 already demonstrated. The remaining two were not benefited owing to complete interruption of the cortico-spinal paths; in these patients the spasms disappeared, but voluntary motility did not return. These are the cases, to my knowledge, mostly published hitherto. To these must be added the three cases which Mr. Hey Groves has reported to-day.

There remain still a few points to which I would call your attention. As regards the indications of the operation I must in the first place repeat, that only lesions with real reflex spasticity, as the result of the loss of the cortico-inhibitory fibres are suitable, but not the diseases of the type of chorea, athetosis, mobile spasms, and spasmodic torticollis; possibly, however, Parkinson's disease may be suitable. Secondly, there must be a reasonable prospect of innervating fibres of the pyramidal tract still existing, all cases with slight spasms and considerable paralysis being unsuitable. In cases of severe spasms and total voluntary paralysis there may remain a considerable amount of voluntary excitability, only obscured by the spasms and only apparent after their elimination. In such cases the experiment is worth trying. The question whether any voluntary motility remains may be decided by preliminary injection of stovaine, which temporarily removes the spasms. The arm, as a general rule, is less suitable than the leg. Thirdly, the disease must have become practically stationary, whilst progressive diseases like disseminated sclerosis are hardly suitable, very slowly progressing ones, like spastic spinal paralysis, being perhaps more promising.

The second point to which reference should be made is the after-treatment of the patient. Good results can only be obtained with very careful exercise treatment. It is only by such exercises that voluntary motility is brought up to its highest level, and that, above all, standing and walking are gradually rendered possible. Such exercises should be continued for years, during which continuous progress may be observed. The assistance of orthopædic measures cannot be dispensed with; above all, it is necessary to place the limbs in removeable plaster splints in such a position as to correct the previous deformity, the legs in abduction, extension and outward rotation, the knees in extension, the feet in dorsal flexion; the arms in abduction, the forearms in extension, the hands in supination and extension, the fingers in extension, the thumbs in opposition. These positions are required during the whole time immediately following the operation, the limbs being only removed from their plaster cases for the purpose of the exercises, which should be carried out several times a day; later they should still be kept in the splints at night. If beside the real spastic contractions there are also organic contractions due to shrivelling of the muscles and tendons, tenotomy or tenoplasty may also have to be performed.

As to the technique of the operation I am fully convinced that Mr. Hey Groves's proposition for the use of adrenalin is of the greatest importance, as the bleedings often assume a threatening character. It seems to me also that his method of cutting the roots nearer to the spinal cord simplifies the operation, although it renders it more difficult to distinguish the different roots.

In conclusion, let me thank you for the kind attention with which you have honoured me and the leniency you show me for my inefficient use of your tongue.

Note.—A full list of references is appended to the articles by Professor Förster and Mr. Hey Groves in the Proceedings of the Royal Society of Medicine.

Dr. W. J. Seward, medical superintendent of Colney Hatch Asylum, has resigned his position as from the end of September next. Dr. Seward has been connected with the asylum for more than 33 years, first as an assistant medical officer, then from January, 1882, as medical superintendent of the male department, and since May, 1890, as medical superintendent of the whole asylum. The sub-committee of the asylum has expressed its appreciation of Dr. Seward's services and of his care and anxiety for the patients' welfare.

ON THE DIVISION OF THE POSTERIOR SPINAL NERVE ROOTS:

(I.) FOR PAIN; (II.) FOR VISCERAL CRISES; (III.) FOR SPASM.[1]

BY ERNEST W. HEY GROVES, M.S. LOND., F.R.C.S. ENG.,

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SINCE Abbé in 1888 first divided the posterior spinal roots for the relief of intractable pain the number of cases recorded of this operation has been remarkably few, but in quite recent years Förster has given a new stimulus to the subject by his suggestion that the scope of the operation may be extended to the treatment of such diverse conditions as visceral crises and spastic contractions. With the exception of isolated cases reported by Bennett, Horsley, Head, and Morton Prince there has been practically nothing written on this subject in England. And yet from both the physiological and the clinical standpoints it is one of great interest and importance. For on the one hand it demonstrates and to some extent elucidates the complexities of the problems of pain, whilst, on the other hand, it offers a cure for certain disorders which are otherwise almost intractable. Strangely enough, the division of the posterior spinal roots has given the least satisfactory results in those very cases where we should have expected it to have been the most efficient—i.e., in the relief of pain—whereas in symptoms with which it is much more remotely connected it has never failed to yield some measure of success.

I have to report six cases of posterior root resection, and I will preface my remarks on each subdivision of the subject by a short description of the personally observed cases which illustrate it.

SECTION I.—*For Pain.*

CASE 1.—Patient, aged 50 years. As he has always been of very methodical habits, and has kept a diary, the history of the onset of his symptoms is exceptionally precise and reliable.

History.—January, 1896, first noticed the loss of sensation in the left foot. February, 1896, first had pain in the left foot. September, 1897, the left foot swelled suddenly. November, 1897, first noticed lameness. Occasional pain noted in the right leg and foot. March, 1898, swelling

FIG. 1.

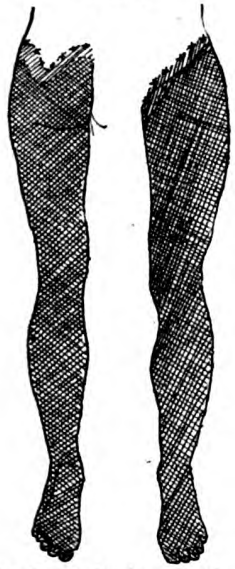


Diagram depicting Case 1, showing areas of anæsthesia. The small crosses show the margin of loss of pain sense, and the broken lines the margin of loss of tactile sense.

of the left knee. From May, 1898, to August of the same year was an in-patient at the Queen's-square Hospital for Paralysis, London, under the care of Dr. J. A. Ormerod. Then for the first time he had difficulty in micturition. For the next ten years the pain continued without much alleviation, occurring in severe paroxysms once or twice a week. It has always been most severe in the left leg from above the knee to

[1] A paper read before the Surgical Section of the Royal Society of Medicine, on June 13th, 1911.

the extremity of the foot, but the right leg has also been the seat of a good deal of pain. Since 1898 he has only been able to walk with the help of crutches because of the pronounced ataxia and the deformity of the left foot and knee.

Condition prior to operation (August, 1909).—He is a heavily built man, well nourished and perfectly healthy except in respect to the nervous system. Left leg: The knee is much swollen, measuring 22½ in. in circumference (as compared with the right, which is 15 in.). There is much bony thickening and free fluid with several large loose bits of bone. An extreme valgoid position is present at the knee amounting to about 30°, whilst there is nearly 15° of lateral mobility. The left foot is also in the condition of a typical Charcot's joint, being flattened, everted, and deformed. The pain, which is present in both legs, is much worse in the left, feels as if it were in the bones, is liable to sudden and severe exacerbations about every third day which last about seven to eight hours, generally at night, and is more relieved by antipyrin (30 gr.) than by any of the other innumerable things which he has tried. The sensibility to tactile, painful, and thermal stimuli is greatly impaired in both legs. The impairment of sensation in the left leg extends almost to the groin, in the right to the knee. The loss of sensation amounts to a dulling of perception with great delay, but not to absolute anæsthesia.

Laminectomy, August 16th, 1909.—The ninth dorsal spine was first removed in order to allow the turning up of a large osteoplastic flap, containing the tenth dorsal to the first lumbar laminæ, inclusive. After opening the dura it was found necessary to take away the second lumbar lamina as well in order to gain sufficient room. About a centimetre was resected from each of the following posterior roots on the left side—viz., the third, fourth, and fifth lumbar, and the first, second, and third sacral. For three days after the operation the patient had very severe pain, chiefly in the left foot, which required ¼–½ gr. morphia to be repeated twice a day. The bladder had to be emptied by catheter from this time onwards until the patient was able to get up.

Excision of the left knee-joint, August 30th, 1909.—The disorganised joint was excised, many large loose pieces of bone were removed, and the femur was united to the tibia by means of a mortice joint. The operation, which lasted one and a half hours, was well borne, *without any anæsthetic*, either local or general. After it was over the patient was a little pale and complained of feeling tired, but otherwise he had no sensation of discomfort from the operation. The wound healed by first intention with a good firm fibrous union between the bones. Osseous union was prevented by the strong contractions which were constantly taking place in the leg muscles.

Recovery from the operations was uneventful except for an unfortunate attack of suppurative parotitis on the left side which required an incision. The patient returned home on Oct. 21st, 1909. He had a small pressure sore on the left heel which was somewhat slow in healing. On two occasions the actual cautery was applied to this without causing him any sensation.

Present condition (February, 1911).—I have asked the patient to give his own opinion as to his present condition and the benefits he has derived from the operations. He writes: "The pain in the left leg has certainly been much less severe than previously. There has, however, been pain, though more of the gnawing than of the shooting description. I suffer enough, though, still to make life rather a doubtful blessing, and without heroin and antipyrin I hardly think I could go on with it. I do not think I would undergo the operation again ....., but if I had to do so would have it done *on both legs*. It has not affected my locomotion at all. If the pain I experience in my right leg were modified as it has been in the left, it would not then be unbearable. I only wish that the nerve operation could have been as successful as that of straightening the leg was." From an objective point of view, the left leg has lost sensation completely right up to the fold of the groin and round the iliac crest. (Fig. 1.) Tactile, painful, and thermal sensations are all quite absent over the whole of this area, but that of tactile sensation is not quite so extensive as that of the other two forms by an area of about two inches. The limb is well nourished and shows no muscular wasting, but he has on several occasions had some superficial ulceration between the toes, which has healed readily under ordinary treatment.

CASE 2.—The patient was a married woman, aged 30 years, with four children.

History.—In 1907 the patient had a severe attack of puerperal pyæmia which necessitated several operations for the opening of abscesses, the largest of which was over the left iliac crest, and was associated with partial necrosis of that bone. In the beginning of 1909 she had phlebitis in the left leg with a large indolent ulcer over the shin. This was the beginning of the pain, which has continued ever since. By the autumn of the same year the pain had become so unbearable that she begged to have the limb amputated.

First operation, Oct. 8th, 1909.—Laminectomy; division of posterior nerve roots. The eleventh and twelfth dorsal and first lumbar laminæ were removed, and the roots of the fourth and fifth lumbar and first, second, and third sacral nerves on the left side were divided. The patient had a good deal of pain in the back and left leg for about a fortnight after this operation, but was then much easier for a month. However, as very little loss of sensation could be detected in the left leg, it was feared that the division of the nerve roots must have been incomplete. This was confirmed by a speedy return of the pain in all its former intensity.

Second operation, Dec. 8th, 1909.—The lumbar enlargement of the cord was exposed by opening the former scar, cutting through very dense cicatricial tissue. This gave a much more bloodless field of exposure, and it was found that in every case some of the nerve filaments had been left to each divided root. These were now completely resected. After this the leg was absolutely anæsthetic to within one hand's breadth of the groin. No painful, tactile, or thermal impression could be felt in any part of this area, nor had she any idea of the position of the limb. On first attempting to walk, the leg was thrown about in the most wildly ataxic manner, but this slowly improved in time.

After-history.—For some few weeks the patient had relief from pain, but it then began to be as bad as ever. The pain nearly always began at night, and continued for many hours, making the patient roll about in agony and threaten to take her life. She said she felt as though the pain was driving her out of her mind, and this fear proved to be well founded, and she had to be removed to the Fishponds Asylum, where she remained from April 22nd to Oct. 3rd, 1910. For about one month of this time she was wildly maniacal, and she had to be kept in the padded cell. Her mental condition slowly improved, but the pain in her leg never wholly left her. On returning home she became much worse, and I admitted her again to the hospital for observation in January, 1911, but again she had to be taken to the asylum, where she remained until April. During both attacks of insanity the pain in the leg was better; then, after she had been discharged from the asylum, where she had been getting good food and fresh air, and had returned to a poor home, where she had every encouragement to ill-health, the pain would begin again.

Judging from *a priori* arguments we should certainly have supposed that in the section of the posterior spinal roots we have a certain means of curing peripheral pain. And yet we have the very remarkable phenomenon of complete and lasting analgesia associated with a continuance of a subjective feeling of pain, and it is easy to satisfy one's self that this result is the general rule and not the exception in similar instances recorded in the literature.

Among the 16 cases collected by Jacobi[1] in 1907 there are only six in which the pain is said to have been completely cured. In six others there is said to have been great relief, and of the remainder there is a significant silence about the after-results.

Knapp[2] has recorded two cases. The first was that of a man, aged 40 years, an alcoholic, whose leg was amputated in 1890 for trauma. Then during the next five years he had several excisions of the stump and of the bulbous nerve ends for pain, and finally, in 1896, the posterior roots of the sacral plexus were divided, but he died from shock. The second was that of a man, aged 25 years, in which amputation of the right arm below the elbow on account of a severe crush was performed in 1898. Great pain in the stump required four operations for the removal of bulbous nerve ends. The nerves were injected with osmic acid; the limb was amputated higher up with no avail. In 1899 he was nervous, hysterical, and generally wretched. In 1902 the sixth, seventh, and eighth cervical and first dorsal right posterior roots were resected. He was free from pain for some months and then became as bad as ever. Two years later he developed spastic paraplegia, and at that time and up to 1907 the original pain was as severe as ever, although the cord was re-exposed and the division of the nerve roots assured.

Chavaunaz[3] relates the case of a man, aged 68 years, who had severe intercostal neuralgia on the left side from the axilla to the mamma, which persisted in spite of excision of the corresponding intercostal nerves. The posterior roots of the first to the fourth dorsal nerves on the left side were resected, but the result was only "some amelioration, but not cure."

Hildebrand[4] recounts three cases. 1. A woman, aged 48 years. Luetic neuritis of arm, which was relieved by no medicines. The roots of the seventh and eight cervical nerves were cut on Feb. 23rd, 1910. Relief for a time, but the pain soon returned. A second operation on April 16th. Divided the sixth cervical and first dorsal roots, but sudden death occurred at the end of the operation from heart failure. 2. A man, aged 62 years. October, 1909, pain in right hip, thigh, and leg, with some muscular wasting. Arterio-sclerosis, œdema, and cyanosis of feet. Operation June 1st, 1910. Laminectomy of first to fifth lumbar vertebræ; resection of right posterior roots. Pain temporarily relieved, but by July 15th it had recurred as badly as ever in the right leg. 3. A woman who had been operated on seven years before for breast cancer. Metastatic growth in left brachial plexus, severe pain in arm. Operation July 16th, 1910; laminectomy with resection of posterior roots, fifth to eighth cervical and first and second dorsal. Good recovery. The patient declared she still had pain. This was considered to be due to the fact that she still craved for morphia.

These are all the cases of this kind that I have been able to collect from the literature, and they are enough to show pretty clearly what the general results have been. Some analysis of the details of the 24 cases included in Jacobi's list and those I have added may serve to emphasise the points of importance.

Sex.—17 males, 6 females; in one case the sex is not mentioned.

Age.—In 19 cases only is the age given, and the average is 41 years. The oldest was 68 and the youngest 15.

[1] Jacobi: New York Medical Journal, 1907, p. 192.
[2] Knapp: Boston Medical and Surgical Journal, January, 1908, p. 149.
[3] Chavaunaz: Gazette Hebdomadaire des Sciences Médicales, 1908, xxvii., p. 369.
[4] Hildebrand: Langenbeck's Archiv für Chirurgie, 1911, 94, ii., p. 203.

Exciting causes.—Mentioned in 10 cases: tabes, 1; cancer of brachial plexus, 2; pyæmia, 1; trauma, 4; syphilitic neuritis, 1; and athetoid paralysis, 1.

Region affected.—Arm, 15; leg, 6; intercostal areas, 3.

Immediate result.—Death in 4; recovery in 20.

Late results.—Complete cure of pain, 6; moderate or partial relief, 6; failure to relieve the pain, 3; not mentioned, 3; died within a few weeks (the two cancer cases), 2.

Nervous and mental sequelæ.—Moderate degree of Brown-Séquard paralysis, 1; spastic paraplegia (occurring some years after operation on the brachial roots), 1; morphia habit, 3 (acquired before the operation); insanity or other severe neurosis, 3.

The point of the greatest interest in these cases is the failure of the resection of the posterior nerve roots to cure the pain in the corresponding areas in about 75 per cent. of their number. A certain number of these cases may be accounted for by supposing either that not enough of the roots have been divided or that the division had been incomplete. But probably the majority are not susceptible of this explanation, and those I have related are among such, for in both these there was the most absolute loss of every kind of sensation, so that one patient could have his knee-joint resected without an anæsthetic, and yet pain is still referred to the same area. It is easy to understand that the relief from pain would not be immediate or that it might for a time be increased, as it usually is, but when the nerve tracts in the spinal cord have had time to degenerate it is hard to understand where the pain comes from. In the case of facial neuralgia the removal of the sensory ganglion or the division of the root of the fifth cranial nerve proximal to that ganglion causes immediate and lasting freedom from pain. Why is the result different when the neuralgia is in the area supplied by the spinal nerves? In some cases—e.g., the second which I have related—the pain is evidently of a psychical origin, and in her case it alternates with absolute insanity.

From a practical point of view it is clear that we must give a very guarded prognosis as to the results likely to be obtained by the resection of the posterior nerve roots for the cure of pain. But it is certainly a more rational and more hopeful proceeding than that of amputating a limb, for the former may cure, it often relieves, and it does not mutilate, whilst the latter never cures although it involves the sacrifice of a member.

SECTION II.—*For Visceral Crises.*

CASE 3.—A labourer, aged 34 years. Symptoms: pain, emaciation, and vomiting.

History.—The patient had always been healthy until two years ago, when he first began to suffer from vomiting and loss of flesh. For the last few months he has had daily lavage of the stomach, which has given him some relief. I saw him with Dr. C. W. M. Grier at Mevagissey, and we diagnosed his condition as being due to some form of pyloric stenosis. I admitted him to the Bristol General Hospital on August 1st, 1910.

FIG. 2.

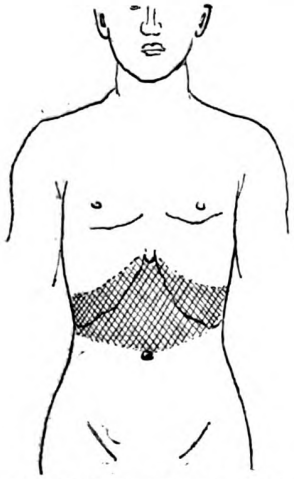


Diagram from Case 3, showing area of anæsthesia resulting from division of the seventh to tenth dorsal posterior roots.

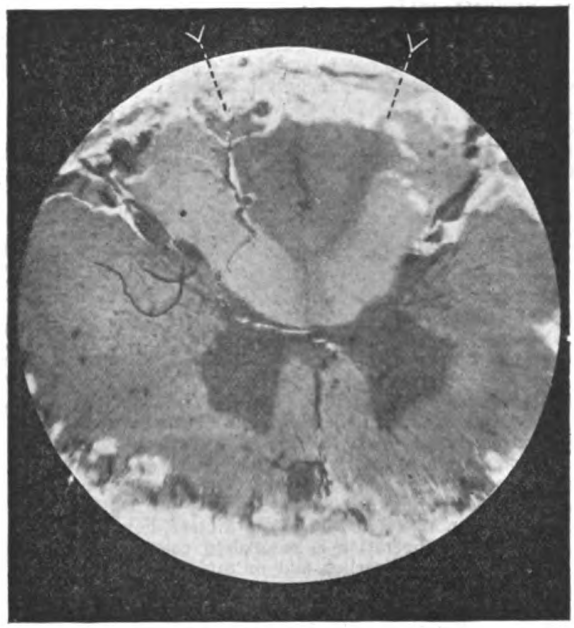
Condition.—The most notable thing about the patient was his great emaciation, he seemed to be a walking skeleton, weighing only 85 lb. He vomited several times a day, and had a great deal of epigastric pain. The stomach was dilated and displaced downwards to one finger breadth from the navel, and splashing could always be elicited over the organ.

First operation.—August 2nd, 1910. Gastro-enterostomy. The stomach was dilated and prolapsed, so that the pylorus appeared to be kinked. There was no evidence of ulcer or new growth. The usual posterior gastro-enterostomy was performed. He derived no benefit from this proceeding, but was as sick as before. About a fortnight after he complained of severe shooting pains in his legs, which suggested the idea that he might have tabes. Further examination by Dr. Carey Coombs confirmed this. There was an absence of knee-jerks, Argyll Robertson pupils, and Romberg's sign. The pain which I had mistaken for indigestion was in reality a girdle pain due to tabes.

Second operation.—August 26th. Laminectomy, fifth to eighth dorsal vertebræ; resection of the posterior dorsal roots, seventh to tenth inclusive. (Fig. 2.)

After-history.—For a few days the patient had increased pain, but this quickly subsided, and he was free from vomiting except for one or two occasions after the operation. He took his food well, but though on full diet he never gained flesh. This was largely due to the fact that he had several large loose actions of the bowels daily, which no kind of medication had any effect in arresting. He died quite suddenly on Sept. 21st, although at this time he was well enough to get up each day and go out of doors.

FIG. 3.



Section of cord in cervica region from Case 3. v v show the degeneration in the posterior columns.

Necropsy.—This was performed by Professor E. Emrys-Roberts. Nothing abnormal was found apart from the condition of the nervous system and the extreme wasting. The gastro-enterostomy junction was firmly united. The laminectomy wound was soundly healed.

Structural changes in the cord.—I am greatly indebted to Dr. A. Rendle Short, the senior demonstrator in physiology at the Bristol University, for a most careful examination of the cord. The dorsal and cervical regions show the degeneration of the posterior columns which results from the resection of the posterior nerve roots in the dorsal region. Many of the cells of the anterior horns of the grey matter in the dorsal region show marked chromatolysis. (Fig. 3.)

The idea that the gastric crises of tabes might be cured by division of the posterior nerve roots of the spinal segments governing the stomach is due to Professor Förster[5] of Breslau, who with Professor Küttner carried out the first operation of this kind in 1908, with very marked success. The patient was a man, aged 47 years, who had suffered from severe gastric crises since 1902, with great pain and almost incessant vomiting. He was worn to a shadow and was addicted to morphia. All kind of medicinal and electrical treatment had been unavailing. On Dec. 31st, 1908, the laminæ of the fifth to tenth dorsal vertebræ were removed, but the dura not opened. The pain and vomiting became much worse. On Jan. 1st, 1909, the sixth to tenth dorsal posterior roots were resected on both sides after opening the dura. After this the pain and vomiting absolutely ceased, and the patient gained weight rapidly. He

[5] Förster and Küttner: Beiträge zur Klinischen Chirurgie, 1909, 63 ii., p. 245.

died from phthisis nine months later, but had no return of the gastric crises.

Förster and Küttner's second case was that of a man who had become greatly weakened by the morphia habit. He died a few hours after the operation. Their third case was that of a man who had had two previous operations on the stomach, including a gastro-enterostomy. The sixth to eleventh dorsal posterior roots were divided on both sides and the patient has completely recovered his health, and this continues until the present, nearly two years after the operation.

Bruns and Sauerbruch's case[6] was that of a man who for several years had had gastric and intestinal crises of increasing severity, so that before the operation he often had fæcal vomiting. The seventh to ninth dorsal roots were divided with an excellent result. However, he suffered a relapse six months later, brought on by alcoholic excess. He subsequently recovered, so that he is now able to resume work (February, 1911).

Moskowicz's[7] first case was that of a man, aged 46 years, who for three years had had gastric crises. The resection of the posterior roots was followed by a cure which lasted for six weeks from the date of the report. His second case was that of a patient who died two weeks after the operation from sepsis of the wound.

Thomas and Hall's[8] case was that of a man, aged 32 years, with a history of gastric crises of eight years' duration. The patient's weight had dropped to 100 lb. He had the symptoms typical of tabes. In 1905 he had a laparotomy with the freeing of some gastric adhesions, but derived no benefit, On March 3rd, 1910, the seventh, eighth, and tenth dorsal roots were cut on both sides. He was relieved of the crises until the date of the report, July, 1910, but he had not cured himself of the morphia habit.

Hahn has had one very successful case and Gulicki several, but I have not been able to obtain the reports of these.

In all these cases the condition has been allowed to go on for several years (from two to eight) and the patients have been extremely ill from the combined effects of pain, emaciation, and morphia. Such patients are in the worst possible condition to recover from a severe operation, and the actual results obtained as to mortality are better than might have been expected. It is quite clear, however, that if the value of the operation is recognised cases will be sent to the surgeon much earlier, and in this event there is no reason for regarding the operation as a particularly dangerous one.

Before leaving this part of the subject it is of interest to refer to two operative procedures of a nature closely allied to that of Förster. The one is described by Cotte.[9] He had a patient who for from five to six years had had very severe gastric crises with other signs of tabes. On Jan. 28th, 1906, the abdomen was opened and the stomach was found to be normal. The solar plexus was freed from the cœliac axis and stretched. All pain and vomiting were completely relieved by this operation, and this relief was maintained at the time of the report five months later. It is difficult to believe, however, that a procedure of this kind can possibly be more than of temporary alleviation, but it is worth bearing in mind for those cases where the abdomen has been opened on account of intractable vomiting and where no gross disease of the stomach is found.

The other suggestion is contained in some remarks by Frank[7] during the German Surgical Congress when Förster's operation was under discussion. He states that it is possible to sever the posterior roots by avulsion of the intercostal nerves without opening the vertebral canal.

SECTION III.—*For Spasm.*

CASE 4.—The patient was a girl, aged 16 years, under the care of Dr. E. J. Toye, of Bideford. She had had spastic hemiplegia since infancy.

Condition.—May, 1910. A well-nourished and very intelligent girl, perfectly healthy except for the paretic condition. The right arm is never used, but held at the side with the forearm strongly pronated and the hand flexed. There is no muscular wasting. All active movements are clumsy and uncertain, whilst passive movements provoke a strong and painful spasm. This is particularly the case with the muscles of the hand, and any attempt to straighten the fingers or wrist causes them to be strongly flexed so that the tips of the fingers touch the front of the forearm. The movements of the right leg are much less abnormal, but there is a spastic contraction of the calf muscles which makes her walk on the toe.

First operation.— May, 1910. The median nerve was stretched above the elbow. The tendo Achillis was cut. The relief of the arm spasm was of very short duration, but the leg condition has been permanently improved.

FIG. 4.

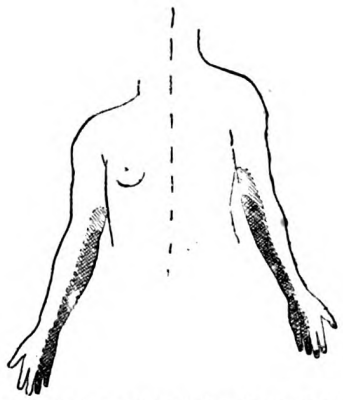


Diagram of the area of anæsthesia in Case 4 after the operation. The larger area shows the loss of pain sense.

Second operation.—Dec. 20th. Posterior root resection. The right halves of the fifth, sixth, and seventh cervical vertebræ were removed and the dura was opened. The right posterior roots of the sixth, seventh, and eighth cervical and first dorsal nerves were resected. On the following day the hand was absolutely flaccid and afforded the most convincing demonstration of the influence of posterior root resection in abolishing spasm. About a week later, although there was no return of spasm, the muscles had regained their tone, and it was evident that the long-continued contraction of the forearm muscles had caused a shortening of these relative to the length of the bones. Either the wrist or fingers could be extended separately, but not at the same time.

FIG. 5.

Reproduction of a photograph of Case 4 before operation.

Third operation.—Jan. 3rd, 1911. A portion of both radius and ulna measuring three-quarters of an inch was removed. The bones were brought together over medullary pegs without any other sutures.

Present condition (April, 1911).—The forearm is kept on a splint with the hand in a position of hyperextension and abduction. The patient has already acquired some use in the fingers, being able feebly to grasp a pen. The whole hand and fingers can be fully extended, but the thumb is still strongly adducted, owing to the shortening of its intrinsic muscles. Movements at the elbow and shoulder can be executed within a small range which is slowly increasing. Sensation is unimpaired except over an area extending along the ulnar side of the forearm, including the little and ring fingers, and reaching above the elbow for two inches. (Fig. 4.) The protopathic loss is slightly greater than the epicritic, the margin of the areas of the two forms of sensation being about one inch apart above the elbow and half an inch in the forearm.

[6] Bruns and Sauerbruch: Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie, 21, i., p. 173.

[7] Centralblatt für Chirurgie, 1910, app.

[8] Thomas and Hall: Boston Medical and Surgical Journal, July 7th, 1910.

[9] Cotte: Lyon Medicale, 106, p. 777.

CASE 5.—The patient was a single woman aged 33 years. She is said to have had "a stroke" when 15 months old, ever since which she has been weak in the left arm and leg. For some years past she has been an inmate of the workhouse and she was admitted to the Cossham Hospital in March, 1911.

Condition on admission.—Well nourished and intelligent, with no disease except spastic paresis of the left arm and leg. Slight wasting and loss of mobility on the left side of the face. Left arm: There is some general paresis affecting chiefly the muscles below the elbow. This is accompanied by spasm and coarse athetoid movements of the hand and fingers. Left leg: Slight muscular wasting below the knee; the foot is held in a position of extreme equinus, and on attempting to correct this very marked clonic contractions are set up which are very painful and make her cry. On attempting to walk the patient holds the foot in extreme plantar flexion and is often thrown to the ground by the onset of clonus. It is this liability to be thrown down that makes her unable to earn her living as a domestic servant. The left knee-jerk is much increased. Babinski's sign is absent. The whole of the left side of the trunk and limbs present a marked anæsthesia and analgesia.

Operation.—March 13th, 1911. Laminectomy of the eleventh and twelfth dorsal and first and second lumbar vertebræ; resection of the second and fourth lumbar and first and third sacral left posterior nerve roots. The blood pressure only fell from 140 to 128 mm. during the operation and there was no immediate drop after the actual division of the nerves.

FIG. 6.

Reproduction of a photograph of hand of Case 4 after operation.

After-history.—The patient made a good recovery, except for some pain in the wound and a slight attack of cystitis which followed temporary retention of urine. On March 16th the note is: "The muscular rigidity of the left leg is greatly improved, the foot can be dorsi-flexed without causing any clonus, the knee-jerk is absent." But unfortunately this improvement was only of temporary duration, and on April 25th the liability to ankle-clonus had returned. She had at that time a good deal of ataxia in the movements of the legs, which made her feel that the operation had left her worse than before. This case, though a failure from the patient's point of view, is very interesting and instructive from that of physiology. Professor Förster gives the fifth lumbar and first and second sacral nerve roots as being the segments of the cord concerned in the control of the plantar-flexors of the foot, and of these three I only divided the middle one—viz., the first sacral. This accounts, I think, for the very short duration of the relief of the spasm. The patient refused to have anything further done.

CASE 6.—A labourer, aged 48 years.

History.—The patient had been in the army and had served in Egypt. He had had a sore on the penis, but does not know whether it was followed by any other signs of syphilis. He was quite well until three years ago when he began to feel weakness in the legs and pain. Both these symptoms became steadily worse and for the last year he had been an inmate of the workhouse.

Condition.—The patient was admitted to the Cossham Hospital on March 9th, 1911. His condition was as follows. He is thin and weak, but there is no organic visceral disease. The right eye has a cataract of three years' formation, the left eye has good vision, but the pupil is small, reacting to light, but not to accommodation. All the muscles of the trunk and limbs are flabby and wasted. The left arm is very rigid, being held with the elbow flexed at a right angle. The legs are kept flexed at the hips and knee-joints and strongly adducted, so that he has to wear pads between the knees and ankles to prevent these parts becoming rubbed into sores. Any attempt at extension or abduction of the legs causes him the most intense pain. He finds that sitting in a chair is the most endurable attitude, but during the past year the pain has been so intense as to allow him but little sleep.

Operation.—March 11th, 1911. Laminectomy of the eleventh and twelfth dorsal and first and second lumbar vertebræ; resection of the first, third and fifth lumbar and first and second sacral left, and the first and fourth lumbar and first and second sacral right posterior spinal roots. The blood pressure only fell from 108 to 102 mm. during the operation and there was no noticeable drop after the actual section of the nerve roots.

After-history.—The pain and spasm have completely disappeared from both legs, from immediately after the operation until the date of the report (June, 1911). The patient has been able to sleep quietly and comfortably, and he expresses himself as greatly pleased with the relief he has been afforded. On April 23rd a tenotomy was done of both the adductors and the hamstrings on each leg, after which the limbs could be placed in a position of full extension and abduction. He can stand with crutches, but we have not yet been able to get him to walk. The wasting and paresis do not give much grounds for hope in this respect.

FIG. 7.

Reproduction of a photograph of Case 6 before operation.

I do not propose to summarise the cases published of this operation for the relief of spasm, because Professor Förster is dealing fully with this and with the other general aspects of the question. There are, however, several points of interest about the subject, suggested by the cases related that I will briefly touch upon.

FIG. 8.

Reproduction of a photograph of Case 6 after operation.

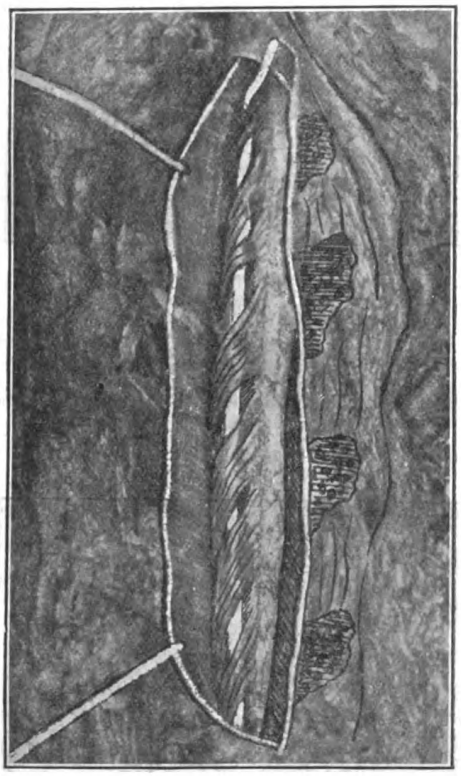
The theory upon which the operation is based.—Hitherto, as far as I am aware, there has been no definite proof as to the manner in which the division of the posterior roots diminishes the spasm emitted from the motor nerves of the same segment. Warrington's[10] experimental work, however, supplies this, and Dr. Short has demonstrated in my third case that

[10] Warrington: Journal of Physiology, xxiii., p. 112, and xxiv., p. 464.

there does occur in the anterior horn cells and in those of Clarke's column a definite chromatolysis. This change only affects a certain number of cells, and according to Warrington some of them recover their normal structure in time. We have here, therefore, a definite anatomical proof of the lessening of the motor activity in those segments where the posterior roots have been resected. In the light of this fact it may be urged that some atrophy and loss of muscular power must result from the operation. But this is shown not to be the case by such examples of the operation afforded by my first two cases, in whom all the posterior roots connected with the leg had been divided, and in whom at intervals of more than one year there is neither loss of power or bulk in the muscles.

The best method of laminectomy.—In my first case I adopted the method of an osteoplastic flap, but I think that it has no advantages which compensate for the great risk of the ill-nourished flap sloughing, and I should never attempt it again. Taylor's suggestion

FIG. 9.

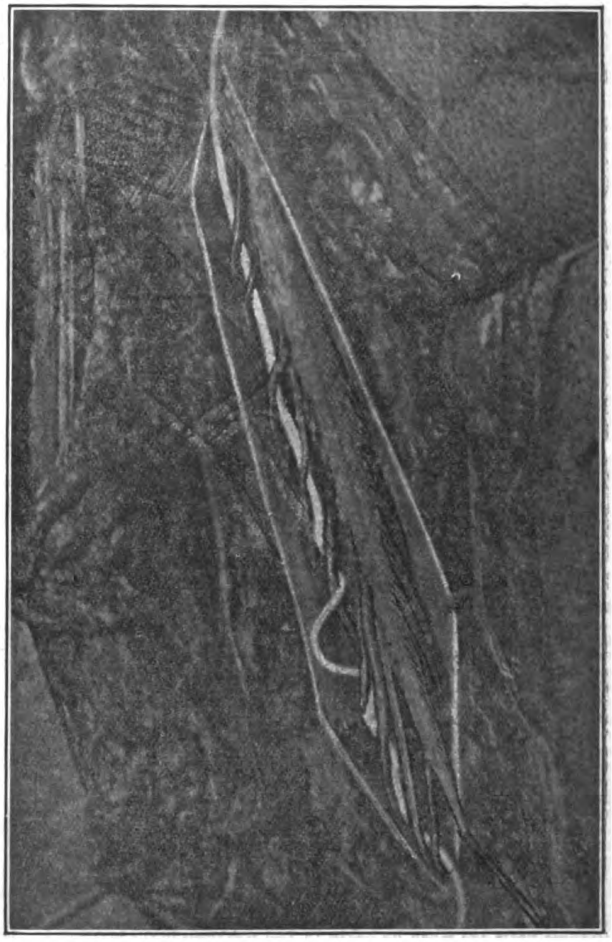


Exposure of the brachial roots by hemi-laminectomy of the fifth, sixth, and seventh cervical and first dorsal vertebræ. A white string lies behind the roots. The highest root shown is the fifth cervical, the lowest is the second dorsal.

of a hemi-laminectomy is an excellent one when applied to the cervical region. The bifid cervical spines make it quite easy of performance, the oozing surface is half that of the usual laminectomy, and the important neck muscles are only interfered with on one side. This method gives ample room for dealing with the posterior roots of both sides. In the lumbar region most of these arguments do not apply. The parts are so deeply placed that one wants all the possible lateral space, and the medianly placed muscle tendons are of not much importance.

The question of the two-stage operation.—On the continent the operation has usually been performed in two stages—the removal of the laminæ first and the opening the dura, with resection of the nerve-roots, second. I think that this is not necessary, and that its drawbacks greatly outweigh its advantages. It is designed to minimise the shock, which is supposed to be especially great in this operation. This idea arises largely from a theoretical conception that division of a number of sensory roots must cause a grave degree of shock. But when tested by observations on the blood pressure taken at frequent intervals during the operation it is found that no more effect is caused by the division of the nerve roots than by any other stage in the proceeding. In the last two cases recorded above there was no difference between the blood pressure taken just before and just after the division of the nerves. And at the end of the operation it was only a few millimetres less than at the beginning. In those cases where much shock occurs during the course of a laminectomy it is probably due to the free bleeding and to the long time taken in arresting it. If, however, a large quantity (2–3 ounces) of a 1 in 50,000 solution of adrenalin be freely injected into all the subcutaneous and muscular tissues, as suggested by Braun,[11] the operation becomes an almost bloodless one, and

FIG. 10.



Exposure of the lumbo-sacral roots by removal of the laminæ of the eleventh and twelfth dorsal, and the first and second lumbar vertebræ. A white string lies behind the roots. The highest root shown is the first lumbar, the lowest the fourth sacral. The filum terminale is held up by thread.

since I have adopted this plan (in the last three cases) I have not had to apply a single pair of pressure forceps or ligature a bleeding point. If, then, the operation can be made quick and bloodless, and if the division of the nerve roots is not productive of shock, there is left no reason for adopting the two-stage method of attack. The disadvantages of the double operation are, moreover, very great. There is much increased danger of sepsis, to which a considerable proportion of the recorded deaths have been due. After the first stage there is all the pain of an ordinary laminectomy, whilst the painful spasms or crises are much exacerbated. The risks of the

[11] Braun: Deutsche Zeitschrift für Chirurgie, 1910 . 561.

anæsthetic are doubled, and the chances of healing by first intention are diminished.

The approach to the lumbo-sacral roots.—It has usually been advised in dealing with the lumbar and sacral roots to approach them at their point of exit from the dura. But this necessitates the removal of all the lumbar vertebral laminæ. These, on account of their size, their depth, and the thickness of the muscles covering them, are the most difficult to remove. It seems to me that it is much simpler and easier to attack the lower roots at the point where they all lie close together at their origin from the spinal cord. This necessitates a smaller removal of laminæ, because the roots lie crowded close together instead of far apart. It is quite sufficient to take away the laminæ of the eleventh and twelfth dorsal and the first and second lumbar vertebræ to fully expose and resect all the lumbar and sacral roots. The incision is placed higher up in the back in a situation where it is in less danger of being fouled by urine or infected from a bed-sore. The differentiation between the anterior and the posterior roots is much easier at the level of the cord than at the exit from the dura. The only disadvantage of the high attack of the roots is the increased difficulty of identifying the various nerves. This may be overcome by observing that the third sacral root is the last root of any size to be given off from the conus medullaris. This never need be cut for the relief of spasm of the leg muscles because it is associated with the buttocks and perineum only. The root above it—viz., the second sacral—is the first to be divided, and then each alternate root is removed. So long as a good half of the afferent roots in the lumbar and sacral regions are divided the object of the operation is fulfilled, irrespectively of the exact nerves cut. In certain cases—e.g., my fifth case—where the main complaint is due to spasm of a single group of muscles, it would be better, I think, to divide all the posterior roots concerned with that group rather than to take alternate nerves. It was because I failed to do this that the result in the case I refer to was so poor.

The relation of orthopædic operations to nerve-root division.—Professor Förster has so clearly indicated the general rules for the selection of cases of spasm suitable for the operation that I will only refer to one point. It has been suggested by some, especially by Biesalski,[12] that the nerve operation should not be done until every possible attempt has been made by tenotomies and other orthopædic operations to correct the deformities. There are, of course, some slight cases where a simple tenotomy will give great relief, but when there is that excessive spasm which ties up a whole limb in a complicated deformity it seems to me to be useless to expect any good at all from orthopædic operations whilst the spasm remains unabated. Both weight extension and splint treatment are very badly tolerated by patients in whom there is active or painful spasm, whereas if this spasm be first abolished by the nerve operation the ideal conditions of muscular flaccidity and freedom from pain are provided which are so necessary for the correction of deformities.

I would briefly summarise my conclusions as follows:—

1. For the relief of pain the operation of posterior nerve-root resection is a somewhat uncertain proceeding. Cases which present very great pain without any organic disease are often of a highly neurotic temperament, and their pain seems to have an important psychical element which is not relieved by the operation.

2. For the relief of visceral crises the operation holds out the only prospect of radical cure which we know of at present. Only those cases of this kind are suitable in which all other means of relief have failed, but on the other hand it is important not to wait until the patient has become debilitated by emaciation and morphia.

3. In cases of spasm associated with lesions of the pyramidal tract the operation has its largest field of usefulness. Spasm is in all these cases definitely relieved, and if the pyramidal tract is not wholly severed a great improvement of motility results.

4. The operation causes definite chromatolysis of some of the motor cells in the anterior horn of the segments involved, and this is probably associated with the lessening of motor spasm.

5. By the use of adrenalin injections as a preliminary to the operation the procedure becomes an almost bloodless and speedy one.

6. There is no special shock associated with the division of the posterior nerve roots.

7. It is better to perform the whole operation in one stage.

8. In dealing with the brachial roots it is best to do a hemi-laminectomy.

9. The lumbo-sacral roots are best approached at their junction with the cord rather than at their point of exit from the dura.

In conclusion, I would express my most sincere thanks to Professor Förster for the inspiration of his work and writings, and especially for his kindness in coming over to London to explain his views and to demonstrate the brilliant results which have been achieved by his initiative. I have also to thank most cordially Dr. A. R. Short for his elucidation of the pathological part of my paper, and Mr. Jackson Taylor for the photographs and slides of the cases which were under his care as my house surgeon.

(*Note.*—A full list of references may be found at the end of the articles by Professor Förster and Mr. Hey Groves in the Proceedings of the Royal Society of Medicine.)

Bristol.

[12] Biesalski: Münchener Medicinische Wochenschrift, August, 1910, p. 1634.

NOTE ON THREE CASES OF FIBROID TUMOUR OF THE UTERUS SPONTANEOUSLY FATAL.

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IN considering the line of treatment to be adopted in cases of uterine fibroids, it should be borne in mind that although, as a rule, these tumours for the most part grow slowly, there may, nevertheless, even after many years of quiescence, come an acute or subacute stage which may have a fatal termination, as in the cases here recorded. The life-history of these growths may extend over many years; therefore, if left to run their natural course, it rarely happens that one observer can see the whole progress of a case of fibroids from the time when the tumours are first recognised, or first produce symptoms, to the end of the case, apart from operation.

While, as has been said, fibroids, on the whole, are characterised by slow growth, often with intervals during which they appear to be stationary, they may at times take on changes, whether of degeneration and infection, or of growth, which rapidly cause acute symptoms, and may put the patient's life in jeopardy. Such an acute crisis may easily happen in a patient known to have had fibroids for many years, but it is quite likely that when the acute crisis does occur she may not come under the observation of the practitioner, or practitioners, who have seen her during the earlier period of the case. Those who have happened to have seen the case only during its quiescent and apparently harmless phases may never know what the termination has been, and if they happen to bear the case in remembrance at all may think of it as an example of the satisfactory results of expectant treatment.

Reflections of this kind are suggested by such cases as the three about to be recorded. In each of them the tumours must have been present for many years, and during the greater part of the time presumably symptoms were either absent or slight. Similarly, during the greater part of the time the general health was not seriously affected, and the tumours might no doubt have been removed at a very slight risk. While I do not advocate removing fibroids of the uterus when they are really small, and causing no symptoms, I do think that once they have reached a size equal to that of the pregnant uterus at the end of the third month, for instance, even apart from any marked symptoms, it is safer for the patient to have the growths removed. The popular impression that these tumours may be expected to give no trouble after the menopause is certainly often wrong. Quite recently, for instance, a patient, 65 years of age, was admitted under my care into the London Hospital suffering from metrorrhagia and other symptoms. On dilating the cervix a submucous fibroid of the size of an orange was found in the uterine cavity. It was removed by cutting it away piecemeal,

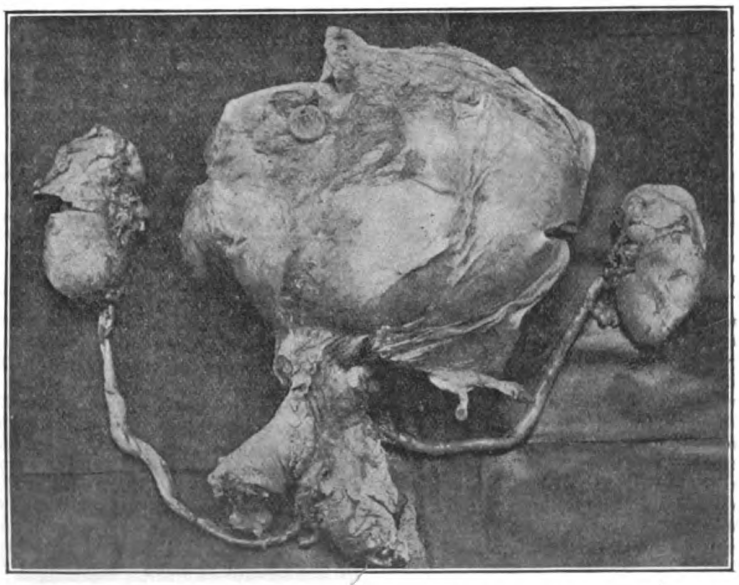
and the patient did well. I have seen many other cases where serious symptoms have been caused by fibroids long after the menopause.

CASE 1. *Case of fibroid spontaneously fatal from hæmorrhage.*—The patient was a married woman, aged 47, who had had three children, the last in 1895, and who was admitted under my care into the London Hospital on April 4th, 1908. Up to two years previously the catamenia had been regular and normal; since that time the periods had been more frequent and profuse. The patient was admitted from the out-patient department, where she had come complaining of flooding and fainting attacks for the previous three days. During vaginal examination in the out-patient department a severe hæmorrhage occurred, necessitating immediate plugging of the vagina with gauze before the patient could be removed into the wards, where she was admitted at 4 P.M. At 8 P.M. on the same night the gauze plugging was gently removed. A fresh alarming hæmorrhage started. The vagina was again plugged, but the patient never recovered from the effects of this hæmorrhage; she shortly became delirious and died from gradual heart failure secondary to the hæmorrhage on April 8th. As regards the treatment adopted after her admission, saline injections per rectum were given freely, but they proved useless.

FIG. 1.

Fibroid polyp springing from anterior lip of cervix. Fatal hæmorrhage. Vagina opened posteriorly. Case 1.

FIG. 2.



Fibroid of anterior wall of uterus and cervix. Ureters dilated by pressure. Severe hæmorrhage; sudden death, probably partly due to uræmia. Case 3.

Post-mortem examination. — The pelvic cavity is occupied by a smooth rounded mass 4 inches in diameter lying below and in front of the uterus, and springing by a pedicle from the anterior lip of the cervix (Fig. 1). The bladder is pushed upwards and forwards; it is flattened from side to side and the posterior wall is bulged forward; the rectum is similarly compressed, and its anterior wall is pushed back. Vagina: On opening the vagina a large mass is seen distending it, having a diameter of 4 inches. High up posteriorly is seen the external os, the posterior lip of the cervix being thin and crescentic. On section, the tumour shows well-defined white fibrous strands and reddish-brown areas enclosed between them. A capsule is distinctly seen loosely attached to the surface of the tumour. At its lower vaginal pole the capsule shows several small ulcerated areas, which have encroached on the venous sinuses of the capsule. Numerous thrombi occupy those ulcerated patches, which have evidently been the source of the hæmorrhage. There is no marked myocardial degeneration, in spite of the grave general anæmia. With the exception of œdema of the lower lobes of the lungs and some muco-purulent secretion in the bronchioles, there are no other outstanding pathological lesions of importance.

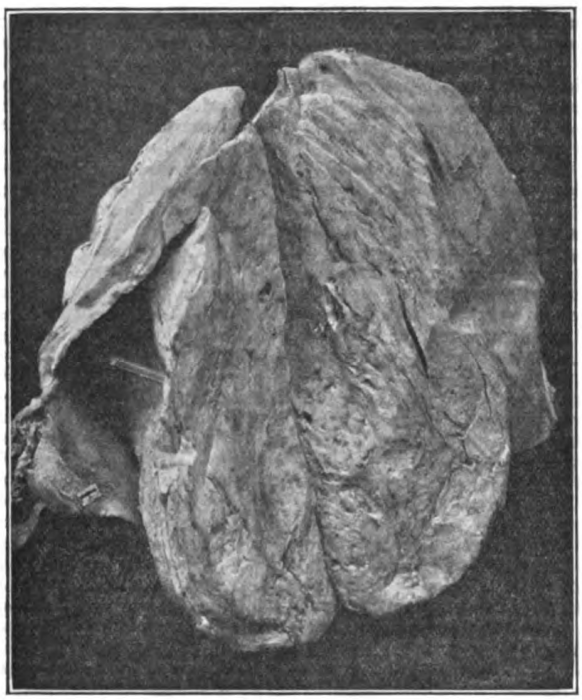
CASE 2. *Case of fibroid spontaneously fatal from pulmonary embolism.* — The patient, a single woman, aged 42, was admitted into the London Hospital under my care on June 25th, 1909. She complained of a lump in the abdomen which she had noticed for 18 months, and which had been slowly growing; also of micturition being frequent, and on two occasions there had been actual retention. There was said to have been no menorrhagia. The patient was somewhat anæmic. On examination there was a firm median swelling in the hypogastric region, which could not be separated from the uterus on bimanual examination, and was taken to be the uterus enlarged by fibroids. The patient seemed to be in fair general health on admission, except for the slight anæmia and the presence of the tumour. On the day following admission she was said to have had a kind of "fit." She became suddenly rigid and cyanosed, and fell back dead. She was quietly reading in bed at the time when the seizure occurred.

Post-mortem examination. — This showed the uterus to be considerably enlarged by an interstitial fibroid in the anterior wall forming the hypogastric "tumour" found on examination. It measured 7 inches in diameter and had a circumference of 20 inches. The fibroid was soft and of a beefy-red colour, an example of "red" degeneration. The cause of death was found to have been pulmonary embolism, A laminated friable clot, 2 inches in length, was found blocking the pulmonary artery at its bifurcation and extending a short way along the left pulmonary artery. The clot was found to have originated on a valve at the end of the left iliac vein, where an adherent grey clot was found filling the lumen of the vessel and extending a quarter of an

inch in the direction of the blood stream. Both ureters were dilated so as to be half an inch in diameter. The pelvis of each kidney was also largely dilated.

CASE 3. *Case of large interstitial fibroid of the uterus; sudden collapse, heart failure, and death.*—The patient, a widow, aged 41, was admitted under my colleague, Dr. F. J. Smith, on the morning of Jan. 28th, 1910. She had had one child eight years ago. History: She had had a severe flooding in June, 1909, and bleeding had continued on and off, clots occasionally being passed, till Jan. 24th, 1910. On this day, while at the sewing-machine, a severe flooding came on. The medical man who was sent for to see her advised her immediate removal to the London Hospital. On admission she was very much collapsed, but was temporarily revived by saline injections and strychnine hypodermically. A catheter specimen of the urine was examined, and contained no albumen. On the afternoon of the 28th I was asked to see her. She was so much collapsed that anything like a complete examination of the case was impossible, but a large tumour was noticed in the abdomen reaching considerably above the umbilicus. She was transferred to the gynæcological ward at 7.45 P.M. on the same evening. The pulse then was very weak and running. She was profoundly anæmic, and respiration was sighing. At 8.30 her condition became very much worse, and her pulse was then uncountable. She was treated with saline injections per rectum, also with coffee and brandy per rectum, but she died on the same evening. No hæmorrhage had occurred since her admission into the hospital.

FIG. 3.



Uterus opened, showing fibroid (in section) springing from anterior wall of uterus and cervix. Uterine cavity seen to the left was seven inches long. Case 3.

Post-mortem examination.—A large fibroid tumour lies in the anterior wall of the uterus and cervix; its lower pole is impacted in the pelvis, its upper pole rises several inches above the umbilicus; the terminal two inches of each ureter are seen firmly compressed between the fibroid behind and the bony wall of pelvis in front. (Figs. 2 and 3.) Above this point the ureters are tortuous, and dilated to the calibre of the forefinger. The pelves of both kidneys are thin and dilated, and both kidneys are hydronephrotic. There are extreme anæmia and œdema of both kidneys. The bladder is very slightly dilated; its base is thin. The majority of the muscle is drawn up and retracted to the fundus of the bladder. The ureters are easily canalised at their terminal portions by a fairly large probe. On the left side there is a small hæmatosalpinx. The right and left ovaries are atrophied, with a small hæmorrhagic cyst in the left ovary. There are some chronic fibrotic tubercles in both apices with caseous nodules; fibrous adhesions are present over the whole of the left lung and at the right apex. There are anæmia and œdema of all the organs.

Upper Brook-street, W.

THE THERAPEUTIC EFFECTS OF CARBON DIOXIDE SNOW. METHODS OF COLLECTING AND APPLYING IT.

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FOR some years liquid air has been used as a local destructive agent by dermatologists, especially in America. The possibility of using it with good effect in surgery early presented itself to the minds of many surgeons who were aware of its properties, but until within the last few years the difficulty of obtaining and transporting it has stood in the way of its general use. It has been successfully used in the treatment of warts, nævi, and angiomata, also in cases of lupus vulgaris, chronic eczema, and lichen planus. Owing to the great rapidity with which liquid air evaporates when exposed to the atmosphere it can be carried about only in especially constructed vessels which cannot be corked or stoppered or they would burst from the internal pressure set up in them. These vessels, the walls of which are composed of two thicknesses of glass with a space between them from which the air has been exhausted, are known as Dewar's or, more popularly, Thermos flasks. The liquid is difficult to apply to small areas, and considerable skill and practice are necessary to limit its effects to the area required. It produces an intense cold, reaching as low as 120° C. below zero. It was first used in this country by the late Dr. Radcliffe Crocker, who published details of a large number of cases which he had treated with excellent results.

In 1908 Dr. Allen Pusey, of Chicago, suggested the use of carbon dioxide snow in its place, as being far more easily manipulated and applied. The fact that the temperature of the snow is nothing like so low as that of liquid air, coupled with the fact that it can be collected with ease and carried about with little trouble, should commend it to those who require such an agent. With the snow properly prepared a temperature of 79° C. below zero can be obtained. This temperature is sufficiently low for the majority of cases. It has been found a very valuable local destructive agent, and has been applied in a large number of dermatological conditions with good effect. The chief merit of carbon dioxide snow lies in the fact that the materials and apparatus for preparing, collecting, and applying it can be always kept ready at hand, whilst its preparation occupies but a few minutes and its cost is small. The principle involved in its use is that of destroying the tissue cells by freezing, the effects being attributed to the exceedingly low temperature obtained. It is said that carbon dioxide has no local action of its own. The freezing of the skin gives very little pain, certainly not more than can be borne by the average individual, and frequently children bear it without complaint. The immediate effect of the application of the snow is the formation of a hard, white area, corresponding in size to the piece of compressed snow applied. This area is, as

a rule, depressed below that of the surrounding skin, the amount of depression corresponding with the amount of pressure used in its application and the elasticity of the tissues to which it is applied. The time usually occupied in the application of the snow depends upon the nature and position of the lesion attacked, and may vary from five seconds to a minute, or even more. In very superficial nævi from five to 20 seconds is usually sufficient, the time depending on the age of the patient and on the sensitiveness of the skin. Great care must be taken not to administer an overdose, and special care must be exercised when dealing with lesions upon the skins of babies and young children. In very superficial nævi the exposure must be short and the pressure slight. It is far better to administer a too short application than an overdose, as the applications can always be repeated if the desired effect is not attained on the first occasion. In deeper forms of lesions the applications may last as long as 40 seconds, and in treating corns and large warts, even after the greater portion of the hardened skin has been cut away, the applications may extend to over a minute. Great care must be exercised in deciding not only the length of the application but the amount of pressure necessary to bring about the desired result. Over-exposure may result in the formation of an ulcer which may leave a permanent and ugly scar, and great damage may be done by overstepping the bounds in either the length of the application or the amount of pressure used. The scar, after a successful treatment, is, as a rule, fine, colourless, and soft. In superficial lesions the scar becomes almost invisible after a few months, but in deep ones it can be slightly seen throughout life, but even under the most adverse conditions the scar is a better one than is formed by any other method with, perhaps, the exception of radium. Excellent results are obtained by this method of treatment in pigmented stellate and capillary nævi. In pigmented nævi a well-nigh perfect result can be obtained. In such cases it is far superior to radium, which appears to have no effect upon the pigment itself. This, however, totally disappears under the influence of the snow. In pigmented hairy nævi and raised angiomata several applications are usually necessary, and although the results are no better than those obtained with radium, the time occupied in obtaining them is shorter and the cost infinitely less. Carbon dioxide snow has been used with marked success in old-standing cases of lupus vulgaris which have ceased to respond to the action of the Roentgen rays, and in some cases of lupus erythematosus excellent results are obtained. In cases of large port-wine stains and moles, where many applications would have to be made, Dr. J. L. Bunch states that liquid air is far more satisfactory than snow.

It is exceedingly difficult to formulate rules as a guide to the length of exposure which should be given and the amount of pressure which should be used in any given case. Dr. Reginald Morton advises that in the treatment of a vascular growth the pressure should be sufficient to arrest the circulation.[1] "The depth to which the freezing action extends is a question of pressure and of the time it is kept up. Where the bone is near the surface it is quite easy to freeze the soft tissues to it. This often happens when treating nævi of the scalp, and such cases do very well on account of its being quite easy to carry out the freezing process quite completely." Immediately after thawing, which process takes far longer than the freezing, there is little difference to be noticed with the exception of a slight reddening, but reaction soon makes itself manifest. Within a few minutes the tissues become firm to the touch and begin to swell and a wheal forms. A vesicle nearly always follows an application of more than 15 seconds, and generally makes its appearance in from one to three hours' time. It is well in most cases to puncture this with a sterile needle, after which it should be dressed with some antiseptic ointment. In from four to five days after a successful application a scab should form, which, unless there be pus underneath, should be allowed to come off of its own accord. No necrosis or sloughing should follow an application properly administered. Necrosis, however, can be brought about by repeated applications given at short intervals.

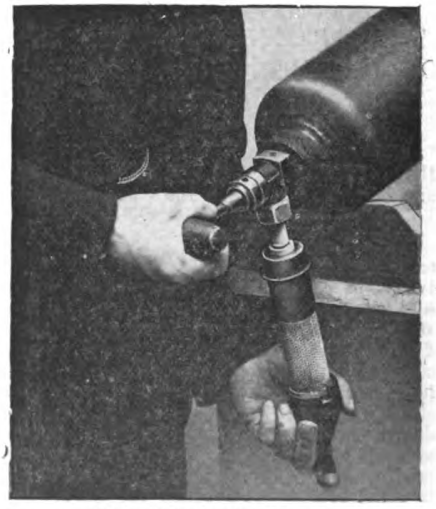
One of the chief advantages of treatment by means of carbon dioxide snow is the painlessness of the process; it is unnecessary in by far the larger majority of cases to administer an anæsthetic. Carbon dioxide snow can be used with good effect in most of the superficial lesions in which radium is used, and it has the advantage of being far less costly and of occupying far less time in producing its results. It is much more easy to apply to young children, with whom there is always a difficulty in keeping the radium applicator in position.

The field of usefulness of this new agent is as yet not completely explored. Some cases of small rodent ulcer have been treated, but some time must elapse before we shall be in a position to say whether in such cases it is as good as, or superior to, the older methods. That its field of usefulness is limited is certain, but inasmuch as it places in our hands a well-nigh painless method of dealing with some of the pre-cancerous conditions which exist in parts of the body inaccessible to the surgeon, it bids fair to take its place as an exceedingly useful agent in the relief of suffering.

On the occasion of my first introduction to carbon dioxide snow I was struck by the crudity and wasteful method of collecting it, and with the object of overcoming these difficulties I designed a collector and applicators, which I think have distinct advantages over the usual methods employed. My collector not only admits of the obtaining of the small and necessary amount of snow for one treatment without waste, but it renders it unnecessary to transfer the snow from one piece of apparatus to another, a compressed tablet being produced with the greatest ease in two or three minutes. My collector consists of a tube formed from a sheet of perforated zinc or tin, inside which is a tube of copperwire gauze, whilst between the two is a layer of soft material composed of felt, &c. The complete tube, about 8 inches in length and 2 inches in diameter, is furnished at its upper end with a brass mount or ring, which is slightly tapered internally. At its lower end is attached a vulcanite tube which constitutes a mould for compressing the snow into tablets. The open lower end of this mould is stopped during the collection of the snow by means of a vulcanite plug. To the nozzle of the gas bottle is attached a tube provided with a tapered brass plug which fits accurately the brass ring at the upper end of the collector. To obtain the snow the collector is held firmly in contact with the tapered brass plug, whilst with the other hand the bottle valve is gently opened by means of a key.

During the collection of the snow the gas bottle should be held upside down, or, if this is impracticable, it should be tipped to an angle of 45°. (Fig. 1.) The attempt to collect with the bottle in the upright position ends in disappointment and in enormous waste of gas. I have recently improved the collector by covering the perforated zinc with a sleeve or tube of thick leather in which a small hole, an eighth of an inch in diameter, is punched through at its lower end. This

FIG. 1.

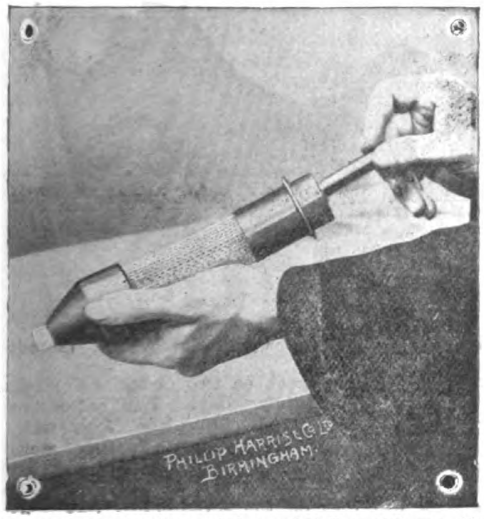


Method of collecting CO_2 snow.

[1] The Use of Carbon Dioxide in Dermatology, by Edward Reginald Morton, M.D., F.R.C.S., Brit. Med. Jour., Sept. 24th, 1910. THE LANCET, August 20th, 1910, p. 559.

improvement allows of very little waste of gas, and in addition it enables the collector to be handled freely without freezing the fingers. When a sufficient quantity of snow is gathered in the collector a long wooden or vulcanite rod which accurately fits the lower end of the apparatus is passed down its centre. The snow is detached from the sides of the collector and falls into the vulcanite mould, where it is compressed between the end of the rod and the plug, with which, as I have previously mentioned, the lower end of the apparatus is closed. The plug is now removed, and by means of the rod the compressed tablet is pushed through the lower orifice. (Fig. 2.)

FIG. 2.



Compressed tablet of snow being pushed through lower orifice.

If a second tablet is required the plug is again placed into position, more snow is detached from the sides of the collector, and the operation of compression is repeated. It is best to make the tablets from a quarter to half an inch in thickness;

FIG. 3. FIG. 3A.

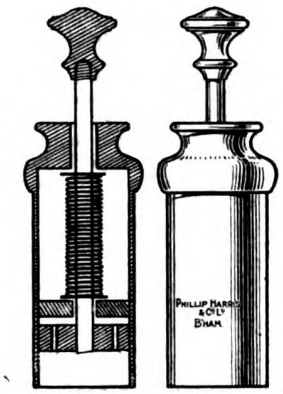
Screw clamp containing collector and plunger. Cone-shaped tablet held in applicator.

their degree of hardness can be regulated by the amount of compression used in their manufacture. When the collector is well filled from four to six such tablets can be made in rapid succession.

Many surgeons prefer to use the snow much more firmly compressed than it is possible to make it by hand pressure alone. To facilitate the obtaining of this I have devised a special screw-clamp (Fig. 3), into which the collector and plunger can be placed, and pressure can be brought upon the tablet by means of a hand-screw. By this means a tablet can be prepared which is of greater hardness, is nearly transparent, and sinks in water. In preparing such a tablet it is necessary that much more snow be used, and only one such tablet can be prepared at a time. As, owing to their hardness, these compressed tablets can be cut up with difficulty, I have devised a method whereby circular surfaces varying from an eighth of an inch to one inch in diameter can be obtained with ease. For this purpose a second plug is required. This plug is hollowed out into the shape of a cone, so that the tablet when prepared consists of a cylinder of compressed snow of from one-half to an inch in length, with a cone-shaped projection of about the same length. By cutting off with a knife a piece of this cone it will be seen that a surface of any desired diameter can be obtained. Fig. 3A shows the cone-shaped tablet held in the applicator which I will shortly describe.

The chief difficulty which confronts the surgeon in the application of carbon dioxide snow is that of firmly holding the snow and of regulating the pressure necessary to produce the desired result. To overcome this difficulty I have designed an applicator which is easy to handle and effective in use The instrument is made of vulcanite, with the exception of the piston which carries the plunger, the collar which guides it, and the spring which keeps it in position. It consists of a tube of vulcanite, the lower edge of which is bevelled, so as to form a thin edge, and a plunger which is held up by a spring at a distance of about a quarter of an inch from the end of the tube. The plunger is perforated so as to allow of the escape of gas, and thus prevent the tablet from being forced out. Pressure on the knob of the piston allows of the plunger being pushed down until it is level with the end of the tube. The sectional drawing, Fig. 4, shows

FIG. 4.



Vulcanite applicator.

clearly the arrangement. The applicators are made in three sizes. No. 1 holds the full size tablet, as produced by the collector, and is slightly more than an inch in diameter. This applicator is the only one which will hold the hard compressed cone-shaped tablet before mentioned, and is figured in Fig. 3A. Applicator No. 2 is half an inch in diameter, and No. 3 a quarter of an inch. To load the applicator the open end is pressed upon a tablet on a flat surface, when it either takes up the whole of it, or (in case of the softer ones) cuts out a circle of the desired size. The snow not used is returned to the collector. It will be seen that with this apparatus carbon dioxide snow of various degrees of compression can be prepared at will. Some surgeons prefer the hard tablets, others the softer ones. In applying the snow the applicator is held in the right hand in the same way as a hypodermic syringe is held, the necessary pressure being made with the thumb placed upon the knob of the plunger.

If after preparing a hard compressed tablet the apparatus be left clamped up the snow will keep for a considerable

time, and the whole apparatus can be carried in a handbag for some distance without its being necessary to cart about a cumbersome and heavy gas bottle.

The whole apparatus above described has been made at my suggestion by Messrs. Philip Harris and Co., Limited, of Birmingham, whom I have to thank for the care and trouble exercised in carrying out my ideas.

Birmingham.

THREE CASES OF TOOTH-PLATE IMPACTED IN THE ŒSOPHAGUS AND PHARYNX;

WITH SPECIAL REFERENCE TO THE OPERATION OF ŒSOPHAGOTOMY.

BY LIONEL E. C. NORBURY, M.B., B.S. LOND., F.R.C.S. ENG.,

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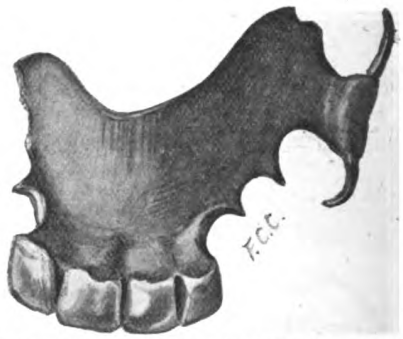
THE following cases were admitted to St. Thomas's Hospital within a few months of each other, under the care of Mr. C. A. Ballance, to whom I am greatly indebted for his kindness in allowing me to operate upon and otherwise treat the patients, and also for permission to make use of the clinical notes.

CASE 1.—The patient, a man, aged 45 years, was admitted on March 3rd, 1910, with the history of having swallowed his tooth-plate during sleep a short time previously. He complained of great discomfort and irritation in the throat; the act of swallowing was exceedingly painful; coughing was frequent, but there was no dyspnœa. A finger in the mouth could detect nothing abnormal, but on external examination a hard mass could be felt about the level of the isthmus of the thyroid. Under chloroform anæsthesia, some four hours after the accident, a finger in the mouth was unable to reach the foreign body, but it could be grasped by long œsophageal forceps. Gentle traction would not dislodge the plate. As it was known to possess some sharp hooks it was thought that these had probably become engaged in the œsophageal wall, and so further internal manipulation was deemed unsafe.

Accordingly, with the neck extended and the head turned towards the right shoulder, an incision was made along the anterior border of the left sterno-mastoid muscle, starting above at the level of the upper border of the thyroid cartilage, and was continued downwards for some four and a half inches. The platysma was divided and the sterno-mastoid retracted outwards and backwards. The omo-hyoid muscle was divided, as was also the anterior jugular vein. The sterno-hyoid and sterno-thyroid muscles, together with the lateral lobe of the thyroid gland, were displaced towards the mid-line, and the carotid sheath with its contents was displaced outwards and backwards. The plate could be felt through the œsophageal wall just below the level of the cricoid cartilage. The œsophagus was easily defined, but the recurrent laryngeal nerve was not seen. A vertical incision was made towards the posterior aspect of the œsophagus and over the underlying plate. The latter was found to be firmly fixed by its hooks to the œsophageal wall, and great difficulty was experienced in its removal. It was found necessary to enlarge the incision in the œsophagus considerably (some three inches in all) before the plate could be extricated. The plate, as shown in Fig. 1, was a large one, bearing four teeth and possessing two formidable hooks. There was very little hæmorrhage. The incision in the œsophagus was closed by two layers of catgut sutures, the first taking up the mucous membrane and the second the muscular coats. The pretracheal layer of fascia was also sutured, leaving room, however, for a small rubber drainage-tube, which reached as far as the line of incision in the œsophagus at its lowest extremity. The ends of the divided omo-hyoid muscle were united with catgut, and the skin incision was closed with silkworm-gut sutures.

As regards the after-treatment of the case, the patient was propped up in bed, a tent and steam-kettle were employed, and menthol inhalations were frequently administered. For the first six days alternate rectal feeds and saline were given, the patient only being allowed to suck formamint lozenges and acidulated tablets, which had the desired effect of relieving thirst, and which, together with menthol inhalations, kept the mouth clean and moist. Fluids by the mouth were withheld until the seventh day. The wound in the neck was dressed with gauze wrung out in 1 in 60 carbolic lotion. The drainage-tube was removed on the fourth day after operation and the stitches on the ninth day. By this time the wound had almost healed, except in the position previously occupied by the drainage-tube, in which situation there was a certain amount of leakage when fluids were swallowed. At this stage the patient was noticed to be jaundiced, the sclerotics especially being deeply tinged. On the tenth day very smart hæmorrhage occurred

FIG. 1.



Tooth-plate removed by œsophagotomy in Case 1. (Actual size.

from the wound in the neck on two occasions and again on three occasions the following day. The patient was left very weak as the result. Rectal saline, &c., were again resorted to for 48 hours. There was no further hæmorrhage and so food was then given by the mouth and gradually increased, soft-boiled eggs being allowed on the fifteenth day and a fish diet on the seventeenth day. Jaundice became less marked after the hæmorrhage, and by the thirteenth day was scarcely perceptible. The patient got up on the seventeenth day and left for a convalescent home on the twenty-second day after operation. On discharge he was able to swallow solid food without any discomfort and the wound had quite healed except for a small amount of discharge from the place where the drainage-tube had been. I saw the patient again some three weeks later. He was looking very well, the wound in the neck had quite healed, and he experienced no discomfort at all in swallowing. I have quite recently heard from him that he is in perfect health.

CASE 2.—The patient, a man, aged 50 years, of very feeble constitution, very deaf, and subject to epileptic fits, was admitted on April 27th, 1910. The history given was that a portion of his tooth-plate had a few hours previously become dislodged and swallowed during a fit. The patient complained of great difficulty and pain in swallowing. There was no dyspnœa. No foreign body could be palpated either

FIG. 2.

Tooth-plate removed by œsophagotomy in Case 2. (Actual size.)

by internal or external examination. An X ray examination revealed the presence of the plate, vertically placed and situated towards the upper end of the œsophagus. Under chloroform anæsthesia attempts to remove the plate through the mouth failed, after 15 minutes' trial. Œsophageal forceps could detect its presence, but it could not be withdrawn. Œsophagotomy was accordingly performed in a similar manner to that adopted in the previous case. In this instance, however, the recurrent laryngeal nerve was seen, and

gently drawn backwards and protected. The foreign body could be detected through the œsophageal wall, a short distance above the sternum. An incision was made just above this situation, and the plate was removed. In this case also hæmorrhage was very slight. The foreign body was a portion of a broken tooth-plate; it carried four teeth and presented several sharp jagged projections (Fig. 2). The incision in the œsophagus was closed by two layers of continuous catgut sutures, the first for the mucous membrane and the second for the muscular coats. A superimposed layer of interrupted catgut sutures through the muscular coats was also employed for extra protection. The divided pre-tracheal layer of cervical fascia was sutured, leaving room, however, for a drainage-tube down to the line of incision in the œsophagus, as in the preceding case.

On the first day after operation the temperature rose to 101·4° F., and remained high until the fifth day, when it fell to normal; slight rises for a few days followed. The patient was propped up in bed and supplied with a tent and steam-kettle. Menthol inhalations were also frequently administered. Rectal alimentation was employed for the first three days, acidulated tablets only being allowed by the mouth, which was frequently cleansed. On the third day subcutaneous emphysema was noticed on both sides of the neck, extending as low as the second rib on either side. This persisted altogether for about a week, gradually disappearing and causing no trouble to the patient. Fluids by the mouth were given on the fourth day, and slight leakage from the wound occurred. The drainage-tube was discarded. The patient was very anxious to be allowed to get up, and permission was given on the seventh day. The gratification of this wish, together with the gift of an ear-trumpet, went a long way, I feel sure, towards his recovery. The stitches were removed on the ninth day, and the wound had healed except in the position of the drainage-tube. Subsequent recovery was uninterrupted, the patient leaving hospital on the twenty-first day, able to swallow perfectly and only troubled by the presence of a very small amount of discharge from the wound in his neck. Seen some weeks later the patient was looking very well, the wound had quite healed, and he experienced no discomfort at all on deglutition. I have quite recently heard from him, in reply to a letter of mine concerning his present condition. He says that he experiences no difficulty in swallowing, the wound is quite sound, and that he eats well in spite of the fact that he has discarded his tooth-plates.

CASE 3.—The patient, a man, aged 34 years, the subject of epileptic fits, two or three occurring weekly, was admitted on Nov. 13th, 1910, with a history of having swallowed his tooth-plate during sleep five hours previously; as to whether he was suffering from a fit at the time is doubtful. The plate was one from the upper jaw, bearing two teeth on the right side and four teeth on the left side; it also possessed one sharp projection in the mid-line anteriorly. There was no dyspnœa, but the patient had considerable difficulty in swallowing. Examination under chloroform anæsthesia revealed the presence of the plate in the pharynx, its sharp projecting portion having become fixed in the epiglottis. The plate was disimpacted and extricated through the mouth by means of œsophageal forceps. The patient left hospital on the following day.

The operation of cervical œsophagotomy for removal of foreign bodies impacted in the œsophagus is one which, happily, it is not often necessary to perform, for the reason that the greater number of such accidents occur in children, where the foreign body is usually of the nature of a coin or a body with smooth and regular surfaces. Such obstacles, as a rule, can be extricated by means of the coin-catcher, or, preferably, removed by direct œsophagoscopy. There is no doubt that in employing the coin-catcher one is working in the dark, and on several occasions I have found great difficulty in extracting the coin-catcher itself, with or without the coin, the beak of this instrument having a habit of becoming impacted somewhere in the region of the upper extremity of the œsophagus.

I think it will be agreed that the scientific method of dealing with such a foreign body nowadays is by obtaining a view of it by means of the œsophagoscope, and so attempting its removal *in situ*. Removal by œsophagoscopy is, however, contra-indicated when the foreign body, as shown by the X rays or seen by means of an œsophagoscope, is large and irregular, since removal by forceps in such a case may result in laceration of the œsophageal wall, and may lead to cervical or mediastinal cellulitis. Nevertheless, it may be possible and advisable even with certain large foreign bodies, if regular in outline, to effect division *in situ* and then undertake removal of the portions by direct œsophagoscopy. When signs of perforation of the œsophagus are already present, as shown by subcutaneous emphysema, cellulitis of the neck, &c., in such cases attempted removal by œsophageal forceps, with or without œsophagoscopy, is certainly contra-indicated, and œsophagotomy is urgently called for.

In adults the commonest form of foreign body to become impacted in the œsophagus is a tooth-plate, and since such plates are often irregular in outline, possessing sharp hooks in many cases, for successful removal œosophagotomy is usually indicated. These tooth-plates are generally swallowed during sleep or while the patient is having a fit. Before deciding to open the œsophagus in such a case some indication as to the shape and size of the plate may be obtained by interrogating the patient. External palpation may disclose its presence, a view of it may be possible by direct œsophagoscopy, or œsophageal forceps may detect it. Further, the position, size, and shape of the tooth-plate may be ascertained by means of a skiagram. It may be possible to remove small tooth-plates which do not possess sharp hooks through the mouth with the aid of an œsophagoscope, either *in toto* or, if necessary, after division with some suitable instrument. If such attempts fail, however, œsophagotomy should be promptly undertaken.

Killian[1] states that in his experience foreign bodies, if they become impacted, are usually retained close to the upper end of the œsophagus. Should such a body pass the upper orifice of the œsophagus it will usually traverse the mediastinal portion of the tube, but may, however, become fixed within two inches of the cardiac orifice. With regard to the question as to how low down in the œsophagus a foreign body can be extracted by cervical œsophagotomy, Jacobson[2] points out that the most accessible portion of the œsophagus is at its junction with the pharynx, opposite the cricoid cartilage, and for the first two inches below this point. Richardson[3] states that in the cadaver all portions of the œsophagus are accessible to the finger, either by means of cervical œsophagotomy or by gastrotomy. He further maintains that the lower three inches of the œsophagus are just within range of gastrotomy. Fagge's[4] experiments on the cadaver do not, however, coincide with the above. In his experience at least two or three inches of the mid-thoracic portion of the œsophagus are inaccessible to the finger. It seems to me that the danger of removing a foreign body impacted in the mid-thoracic œsophagus by cervical œsophagotomy would be almost as great as removal by means of direct œsophagoscopy, if necessary after division of the obstacle, since the risk of laceration of the œsophageal wall during extraction would be considerable with either method. Transmediastinal œsophagotomy has been employed in such cases, but I have no experience of the operation. Fortunately, however, impaction in the mid-thoracic portion of the œsophagus is extremely uncommon, owing to the dilatability of this portion of the tube.

A few special points might be emphasised in connexion with the operation of cervical œsophagotomy. The skin incision should be a long one, in order to allow of free exposure of the œsophagus without unnecessary traction on the important structures in its immediate vicinity. It should be either oblique, taking the line of the anterior border of the sterno-mastoid muscle, or curved, taking the line of cleavage of the skin, as recommended by Kocher, and similar to that which he employs in his operation of thyroidectomy. If possible, the recurrent laryngeal nerve should be isolated and gently drawn downwards and backwards before the œsophageal wall is incised. If the foreign body can now be felt, it may be removed by a vertical incision either immediately over, or better slightly above, this level. If the foreign body, however, be not palpable, it is perhaps better to distend the œsophagus by means of a bougie passed through the mouth before the incision is made. A free incision in the œsophagus will do less damage than much manipulation through a small incision. In

[1] Zeitschrift für Ohrenheilkunde, 1908, vol. i., p. 120.
[2] Operations of Surgery, vol. i., p. 724.
[3] THE LANCET, 1887, vol. ii., p. 707.
[4] Burghard's System of Operative Surgery.

cases of impaction in the upper thoracic portion of the œsophagus it may be necessary to divide the foreign body with cutting forceps before disimpaction can be accomplished without damage to the coats of this tube. It is stated that hæmorrhage from the muscular wall of the œsophagus is often free, but fortunately it caused no trouble in the cases described above. Severe hæmorrhage may, however, occur from accidental division of the inferior thyroid artery, which accompanies the recurrent laryngeal nerve. Efficient drainage should always be established for several days, the drainage-tube reaching down to the œsophageal wall. Suture of the divided pre-tracheal layer of fascia forms an important protection to the underlying line of sutures; sufficient room should, of course, be left for the passage of the drainage-tube.

With regard to the after-treatment, rectal saline should be employed for the first two or three days. In order to allay thirst I found that acidulated tablets, occasionally given, were very effective; they also served to keep the mouth moist and so diminished the risk of "septic parotitis." Steam inhalations, together with some antiseptic, such as menthol or eucalyptus, are also useful in this respect, besides minimising the liability to pulmonary complications to which these patients are prone, due, no doubt to a large extent, to the element of sepsis which is always present, in a greater or less degree, with a wound in the œsophagus. A sitting posture together with the employment of a steam-kettle and tent are also useful precautionary adjuncts. If progress be favourable fluids may be given by the mouth after from 48 to 72 hours. Should there be any leakage through the cervical wound I think it is better not to give the patient milk to drink, since this is very liable to decompose and hinder repair, but chicken broth or even soft solid food—e.g., Brand's jelly—will be found more suitable. In the above cases, although there was a certain amount of leakage at first, this trouble soon ceased when these simple measures were adopted. If possible, the patient should be allowed to get up after a few days, especially if he is very anxious to do so; the good moral and physical effect produced thereby was well illustrated in Case 2.

The chief post-operative complications of cervical œsophagotomy are, for the most part, septic in origin, and may be roughly classified in the following way: Early complications—(*a*) cellulitis, cervical and mediastinal; (*b*) subcutaneous emphysema. Later complications—(*a*) septic pulmonary conditions; (*b*) secondary hæmorrhage. If cellulitis occur, the wound should be freely opened and drained, and appropriate treatment for combating toxæmia should be vigorously enforced. Subcutaneous emphysema is, as a rule, only transitory and disappears in a few days; it rarely gives rise to any discomfort or cause for anxiety. The occurrence of pulmonary complications is best anticipated, and prophylactic treatment, such as that indicated above, should be employed from the first. Secondary hæmorrhage may be a very serious complication and is invariably septic in origin, as illustrated by Case 1, where it occurred on the tenth day after operation, the blood in all probability coming from some vessel in the œsophageal wall or else from the inferior thyroid artery. Jaundice, which was present in Case 1, was almost certainly toxic in origin in spite of the fact that the local condition was quite satisfactory.

In both cases of œsophagotomy detailed in this paper operation was undertaken early, within four and five hours of the accident respectively. Foreign bodies in the œsophagus should be removed as soon after impaction as possible. If other means of extraction fail, œsophagotomy should be promptly undertaken in order to obtain a successful result. In such circumstances the risk of operation is not great, but the prognosis becomes very grave with the advent of cervical or mediastinal cellulitis.

I am greatly indebted to Mr. F. C. Cowtan for his very able drawings of the tooth-plates reproduced in this paper.

Wimpole-street, W.

SOCIETY FOR THE STUDY OF INEBRIETY.—The next meeting of the society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Tuesday, July 11th, at 4 P.M., when Mrs. W. Bramwell Booth will open a discussion on "The Management of the Inebriate Woman."

MICE IMMUNISED SUBCUTANEOUSLY ARE RESISTANT TO THE IMPLANTATION OF CANCER IN INTERNAL ORGANS.

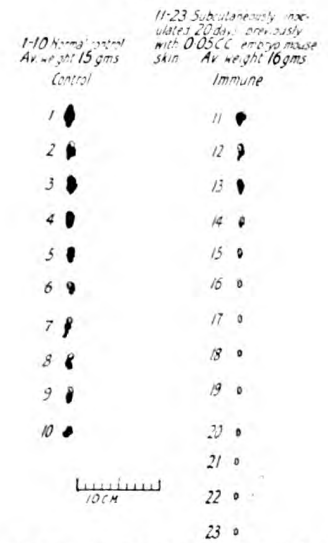
BY W. H. WOGLOM, M.D.,

CROCKER CANCER FUND, COLUMBIA UNIVERSITY, NEW YORK; ASSISTANT TO THE IMPERIAL CANCER RESEARCH FUND, LONDON.

RESISTANCE to the successful inoculation of a tumour has been usually held to be a condition of general and equal distribution throughout the animal's body. A series of experiments carried out last year, however, by Kraus, Ranzi, and Ehrlich [1] led them to doubt the validity of this conception and to conclude that animals rendered resistant by subcutaneous injection of tumour or of normal tissue might not perhaps be so resistant to the inoculation of tumours into their organs as they would be to subcutaneous implantation. The point thus raised by Kraus and his colleagues is of great interest, for should future experiment sustain their suggestion, many of our ideas of immunity would have to undergo revision. In order, therefore, to see whether one had been right in assuming resistance to be a general, rather than a local condition, the following experiment was undertaken.

On March 15th, 1911, a series of mice were inoculated in the left axilla with 0·05 c.c. of an emulsion of embryo skin. Their average weight at that time was 12 grm. On April 4th (20 days later) 13 of them, now of an average weight of 16 grm., and 13 normal controls (of an average weight of 15 grm.) were inoculated in the left kidney with 0·01 c.c. of an emulsion of tumour 63—a mammary adenocarcinoma. Under ether anæsthesia the kidney was approached through an incision in the flank and the inoculation made by means of a syringe fitted with a fine needle. Twenty-five days later the 10 surviving controls and the 13 mice of the experiment were killed and examined and their tumours sketched in outline. In the chart thus made (Fig. 1) the black silhouettes represent tumour, and where

FIG. 1.



Experiment 63 47 J. All mice inoculated in left kidney on April 4th, 1911, with 0·01 c.c.; killed 25 days later, April 29th. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney where this was still recognisable. Note that tumours developed in the kidney of all the normal mice but in only five of the immune mice, and that here they were of much smaller size.

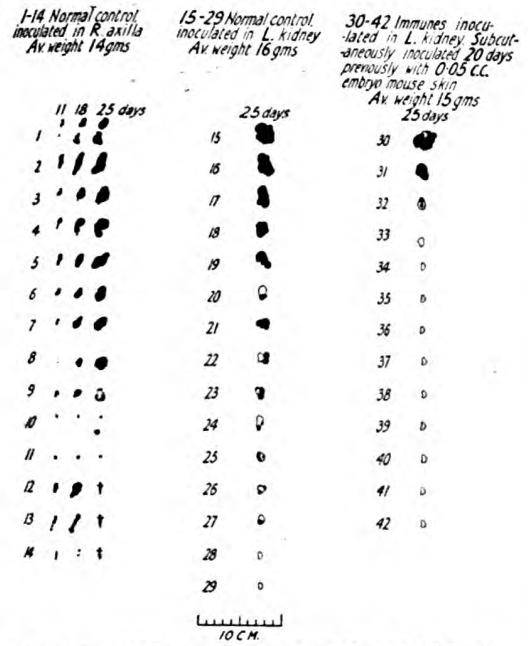
they contain a reniform unshaded area it implies that kidney itself was still recognisable. In many of the ca however, the kidney had been quite destroyed by the gro of the tumour. Where kidney-shaped outlines alone shown (Nos. 16 to 23) it means that no growth visible to naked eye had occurred. It will be seen that while 100

[1] Zeitschrift für Immunitätsforschung, &c., 1910, Orig. vi., 665.

cent. of the normal controls developed tumours, only 46 per cent. of the treated animals did so, and, moreover, that in the latter case the tumours were much smaller.

So much having been gained, it was essential to repeat this preliminary experiment and further to plan a third one, which should concern itself with the relation of subcutaneous to organ immunity within the same animal. The second experiment is reproduced in Fig. 2, and is in all respects a

FIG. 2.

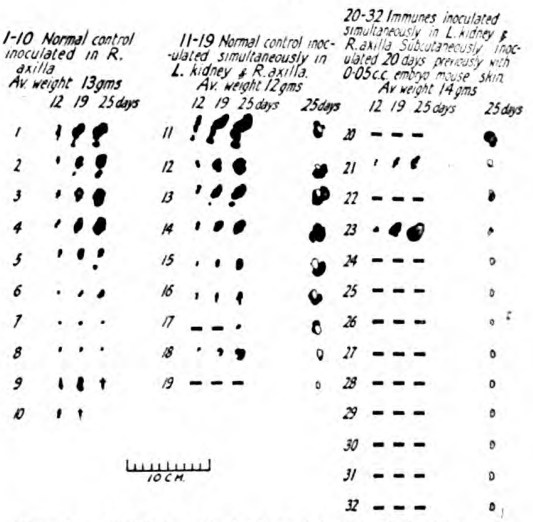


Experiment 63/49 J. All mice inoculated May 26th, 1911, with 0·01 c.c. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney. In the first column (1–14) the progressive growth of the subcutaneous tumours is depicted at three successive chartings up to the twenty-fifth day after inoculation. In the second column (15–29) is depicted the result 25 days after inoculating the same tumour into the kidney of normal mice, and in column 3 (30–42) into the kidney of immune mice. Note the marked resistance in the latter.

replica of the first, except that there is given the result of inoculation of the tumour into the axilla of normal mice. One notices, first, that of these, excluding three mice (Nos. 12, 13, and 14) which died before the third charting of their tumours, 100 per cent. developed growths, and an indication is thus afforded of the proliferative power of the tumour under discussion when implantation is made at the site usually selected. Among the series inoculated in the kidney, transfer of the tumour was successful in 87 per cent., and in passing it is of interest to observe that the size of the tumours growing in this location is not exceeded by those in the axilla. That inoculation may be made successfully into the abdominal organs is a fact which is generally known. The important feature of the experiment falls in the third column and is an entire substantiation of the result pictured in Fig. 1. While 87 per cent. of the normal mice developed tumours of the kidney consequent upon inoculation into that organ, the animals subcutaneously immunised fell far short of this percentage, only 23 per cent. of them presenting growths on the twenty-fifth day.

A third experiment (Fig. 3) completes the chain of evidence, and showing as it does the result of simultaneous inoculation into kidney and axilla in normal and immune animals, permits us to draw certain conclusions regarding the general distribution of the immune state throughout the animal's body. Among nine normal mice (Nos. 11 to 19) inoculated in axilla and kidney there occurred tumours in both locations in 89 per cent., while in the only case in which no tumour was present in the axilla the attempt to inoculate the kidney was also negative. Contrasted with this result is that set forth in the last two columns. In mice subcutaneously immunised, and similarly inoculated, tumours were present in the kidney in only 31 per cent., and, although it is true that in two of the mice (Nos. 20 and 22) which did not develop axillary tumours there had been no bar to the growth of tumours in the kidney, yet it is contended that this was a

FIG. 3.



Experiment 63/49 I. All mice inoculated May 25th, 1911, with 0·01 c.c. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney. Similar experiment to that depicted in Fig. 2, but the mice were tested both by subcutaneous inoculation and by implantation into the kidney, in order to show the parallel distribution of resistance throughout the body brought out by columns 4 and 5 (mice 20–32).

fortuitous circumstance which in no wise invalidates our reading of the result of the experiment.

One feels justified in inferring from the experiments above set forth that the immune state is one of general distribution throughout the organism and not of local occurrence at the site of the immunising inoculation, without wishing, however, to have this conclusion applied to the zonal immunity described by Sticker.[2]

The expense of this investigation was partly borne by the Crocker Cancer Research Fund of the College of Physicians and Surgeons, Columbia University, New York.

[2] Münchner Medicinische Wochenschrift, 1906, lxxviii., 1904.

THE SOUTHWARK GUARDIANS AND DISSECTION.—At a meeting of the Southwark board of guardians on Thursday, June 29th, the following letter was read from Mr. F. G. Parsons, secretary to the anatomical committee at St. Thomas's Hospital: "It has been reported to me that the Southwark board of guardians has withdrawn its permission for unclaimed bodies to be sent to the London schools of anatomy. This, if true, will cut off one-tenth of the supply and seriously handicap medical education in London. Would you, therefore, kindly tell me whether there is any truth in it, or whether the board has any cause of complaint of the way that bodies entrusted to the various licensed teachers of anatomy are treated? In the event of permission having been withdrawn, will you kindly send me a list of guardians, since their action would be of the very gravest importance to the University of London and should be laid before them in all its bearings." Mr. C. W. Matkin, the vice-chairman of the board, inquired whether only ten boards of guardians in London sent bodies of the friendless to the schools of antomy. The clerk replied that he could not says Mr. F. Haines said he was not ashamed of his action in voting for the abolition of the practice, nor of supplying his name and address. Mr. Matkin: They can obtain our names without coming here. Mr. W. Hills: I do not think we have the slightest objection to our names being seen in print. The clerk was instructed to inform Mr. Parsons of the guardian's decision to discontinue sending bodies of the friendless to any school of anatomy, but not to give the names and addresses of the guardians.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Division of Posterior Spinal Nerve Roots for Pain, Visceral Crises, &c.

A MEETING of this section was held on June 13th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. E. W. HEY GROVES read a paper on Division of the Posterior Spinal Nerve Roots for Pain, Visceral Crises, &c., which is printed in full in this issue of THE LANCET, p. 79.

Professor FÖRSTER of Breslau discussed the subject in a paper which is published in full on p. 76 of this issue of THE LANCET.

Dr. OTTO MAY showed a case of Little's disease in a small boy who was a premature child, one of twins, who from birth onwards showed well-marked spastic jerks. Medicinal measures having been of no avail, he suggested that the operation of Professor Förster should be performed to enable the boy to walk, and there seemed a prospect now that that operation had been done by Mr. H. S. Clogg that he would be able to walk moderately well, but it was as yet only a short time since the operation. (This case will be found described in THE LANCET of June 3rd, 1911, p. 1489.)

Mr. C. A. BALLANCE desired, before mentioning the two or three cases which he had had bearing on the present discussion, to say what a great personal pleasure it had been to him to listen to the splendid scientific address of Professor Förster, and to express the hope that in the future the Surgical Section of the Royal Society of Medicine would learn the great advantage of inviting our distinguished *confrères* from foreign countries from time to time to join in the discussions and teach English surgeons so much of their work in the way in which Professor Förster had done that day. He was there by request of the President, having had no experience of division of posterior roots for spastic paralysis or gastric crises. The first case in which he divided a posterior root occurred many years ago in a patient of Dr. Risien Russell. The patient was a woman aged about 35, who suffered from herpes in the distribution of the first dorsal root, along the inner border of the forearm, and when he saw her there were certain scars and marks of the previous herpes, which remained after the attack had subsided. But since subsidence of the attack she had suffered in the distribution of the first dorsal root from considerable pain and the area was hyperæsthetic. He divided the first dorsal root on that side, and in doing so he relieved the pain completely. It was at the time that Professor Sherrington was working at the distribution of the posterior roots, and he came many times to examine that patient; and if he had been present at that meeting he could have told members a great deal more about the sensation in the part supplied by the first dorsal root than he (Mr. Ballance) could do. But Professor Sherrington determined that there was a fourth form of sensation, or some new form of sensation which he had never been able to discover before. The exact details of that he would not enter into, but in the periphery of the anæsthetic area the patient was enabled to recognise the burn from a nearly red-hot wire. He did not know whether Professor Sherrington had made any further experimental investigation on the matter, but at that time he was very much interested in it, and he remembered his great anxiety to publish an account of the new form which he had apparently discovered in that first case of division of the first dorsal region. The result of the operation was completely successful. The hyperæsthesia disappeared and all the pain disappeared, and the patient was cured. The case he saw next he did not operate upon, but as he saw it he felt at liberty to mention it. It was the case of a lady whom he saw with Sir David Ferrier and afterwards with him and with another physician and Sir Victor Horsley. She had hyperæsthesia of the sole of the right foot corresponding to the distribution of the posterior root of the first sacral nerve, and she was not able to get about. The hyperæsthesia was not absolutely constant, but whenever it was present in the sole of the foot it was impossible for her to walk about. At that time she was averse to operation, but later on Sir Victor Horsley divided the posterior root of the first sacral nerve of that side, and he heard a year afterwards that she was cured. There was at first some difficulty in getting about because of the anæsthesia of the sole of the foot, but he thought that was overcome and all the distressing pain and the hyperæsthesia in the sole of the foot removed. The third case was that of a young woman of 22. She was under the care of a medical man at Felixstowe. Mr. Ballance saw her last year. When she was a year old she had tuberculosis of the fourth metacarpal bone of the right hand, and there was a considerable scar over that region. There was for many years pain in the scar, and when she had that pain she was unable to do anything which she had been previously accustomed to do. She was neurotic, and since 1898, 10 years before he saw her, she had suffered from epilepsy. The question was whether that painful scar had anything to do with the epilepsy. Convulsions occurred about four times a year, and she had been treated for many years by bromides. She had been seen by a number of physicians, and two years before he saw her Sir Victor Horsley had divided the dorsal branch of the ulnar nerve, which was distributed to the region of the scar over the fourth metacarpal bone. He believed the operation gave some relief at first, but apparently resulted subsequently in an increase of pain. For 18 months before he saw her she had been in great distress on account of the pain in the scar, this pain having spread up the arm in the distribution of the eighth cervical root. He divided this root. There was no difficulty in doing that operation. Dr. Purves Stewart was present at the operation, and with him he took the opportunity of stimulating the anterior roots of the seventh and eighth cervical and also the first and second dorsal. The eighth cervical was the one divided. The triceps acted very powerfully, the pectoralis contracted, there was no flexion of the fingers, but there was extreme hyperpronation of the whole limb. In stimulating the anterior root of the first dorsal there was flexion of all the fingers, ulnar flexion of the wrist, the triceps contracted, and so did the rhomboids. There was no hyperpronation. With stimulation of the seventh cervical anterior root there was extension of the elbow, the pectoralis contracted, and there was hyperpronation. But below the cervical roots there was no hyperpronation and there was no flexion of the fingers until the first dorsal root was stimulated. The second anterior root was also exposed and stimulated, and in stimulating that there was only contraction of the intercostals. The patient was immensely relieved. Six months after the operation she had had no fit and had been able to return to her ordinary occupation. He had not heard of her since and he was sorry that, in view of the present discussion, he had not ascertained her later history. The fourth case was one in which he could not complete the operation. It was the case of a man who came to St. Thomas's Hospital last winter and who was nearly 20 st. in weight. Some years before he had met with an injury which necessitated amputation in the lower third of the thigh. He was a railway man. During the last two years he had suffered from intolerable pain in the stump. All sorts of drugs had been used, the nerve had been injected with alcohol, and the nerve excised as far as it was found in the stump, right up to the sacro-sciatic foramen. Therefore, after seeing him for some time and watching his distress and pain, it occurred to him that the only thing would be to attempt to divide the posterior roots corresponding to that limb. He decided to divide the posterior roots of the third, fourth, and fifth lumbar, and the first and second sacral. The stump was on the right side. In that way he covered the whole sensory distribution of the lower limb, without interfering with the sensory distribution in the genital and anal regions. The patient was anæsthetised, and he got through the eight inches of fat down to the lumbar spine, and managed to get away the laminæ of the second, third, fourth, and fifth lumbar vertebræ, but at that time the patient's condition was so bad that it was necessary to infuse him, and the wound was closed. There was great difficulty in reviving him; indeed, for some time he (Mr. Ballance) thought the patient was dead. Some weeks afterwards the wound was reopened with the intention of dividing the dura and those nerves.

But before he had got down to the dura the man's condition failed again and he could not open the dura. He did not feel that he was justified in doing a brilliant operation at the risk of killing the patient. The man had left the hospital and his doctor reported that he was still in great pain, but still, considering the grave condition in which he was when the other two operations were attempted and that there was considerable work for some hours in getting him back to life, it was not thought advisable to attempt anything further in the operative way.

Dr. PURVES STEWART said that the position of a physician who ventured into a surgeons' meeting was analogous to that of Daniel in the lion's den. But Daniel was cast into the lion's den, whereas he (Dr. Purves Stewart) was at this meeting of his own accord. He supported everything which had been said by Mr. Ballance about the papers which had been listened to. He (Dr. Stewart) had had three cases in which Professor Förster's operation had been carried out. The first and best was one of gastric crises in the person of a man 40 years of age who had intolerable vomiting of some months' duration with intense emaciation. In August, 1909, Mr. William Turner, of Westminster Hospital, divided the thoracic roots from the seventh to the tenth inclusive on both sides, and the result was the production of a band of anæsthesia such as Mr. Groves showed on the screen, from the xiphisternum to the umbilicus. It completely stopped the man's gastric crises; he rapidly put on weight and became a normal member of society. But in consequence of his occupation he developed another trouble—namely, alcoholic poisoning. The second case was one with tabetic lightning pains in both legs. The case came to the West End Hospital for Nerve Diseases. Mr. Wilfred Trotter divided the third lumbar roots and the result was practically *nil*. Some anæsthesia was produced in the area of the roots, but the pain continued. The third was a case of spastic paraplegia in a man who had syphilitic softening of his cord many years ago, and spasticity in his legs, without sensory changes, but with marked bladder trouble. The arms were normal. Mr. Trotter divided the first, third, and fifth lumbar roots on one side, and the second and fourth lumbar roots and first sacral on the other. The result was that the man, instead of walking with one toe just in front of the other, could now take steps three times as long as before, the spasticity was diminished, and he was so pleased with the result that he wanted to have further roots divided so that he might be further improved. The operation of Professor Förster was a very brilliant one, but, like all other operations, it was only suitable in selected cases, as Professor Förster himself pointed out. The cases *par excellence* where the operation was indicated were those of gastric crises. As Professor Förster had shown in numerous papers, the gastric crisis was a nerve storm of the reflex arc, or of several reflex arcs, and if such arcs were cut the storm ceased, because there was no longer a path in which it could travel. With regard to tabetic pains matters were different. Tabes was not simply a disease of the roots, but of the continuation of the roots in the spinal cord. Division of those roots for the pain in tabes could not be expected to cure the disease; the central parts of the roots still remained and still could cause pain. With regard to the treatment of the ataxia, to employ Professor Förster's operation for ataxia was unjustifiable, because it would tend to increase the ataxia. With regard to cases of spastic paralysis one must be very cautious not to employ Professor Förster's operation indiscriminately in all cases of spastic paraplegia, because in every case there were two elements, spasticity and paraplegia, and of those two elements Professor Förster's operation could only relieve the spasticity. If it was found on anæsthetising the cord with stovaine, as Professor Förster suggested, that there was still some voluntary power, it was worth while dividing the roots, and there would be that amount of voluntary power which the pyramidal tracts were capable of. But if a patient was idiotic or so severely paralysed that his pyramidal tracts were almost completely degenerated, it was not worth while removing his spasticity. That and athetosis were contra-indications of it, because the latter meant that the brain was degenerated, and no amount of posterior division would remove it. And, as Professor Förster pointed out, disseminated sclerosis or other central disease was a contra-indication for the operation.

Mr. D. M. AITKEN, referring to the great importance of after-treatment in cases of spastic paraplegia, said he had been watching these cases for the last 30 years, since he was house surgeon to Mr. Robert Jones of Liverpool, who treated those cases on orthopædic lines. He asked whether Professor Förster would draw the line between cases suitable for pure orthopædic treatment and cases in which he would at once go in for section of the roots? He thanked him for the splendid demonstration of results. With regard to reflex spasm, it was cases of that sort which Mr. Jones and he treated orthopædically, but in which Professor Förster divided the roots of the nerves. Were they the primary source of that spasm he would like to know with certainty. Was he right in assuming that that spasm came from the muscles themselves? And if that was so, why should not that be overcome by division and full stretching of the muscles? He was asking those questions entirely for information, because the cases he had seen numbered now about 50, and in some of them there was good recovery in the lower limbs. In the marvellous fourth case of Professor Förster the photograph showed that abduction of the thumb was very good. Spitza of Gratz had done much in transplantation of nerves in connexion with these cases, and as far as he could tell the great difficulty had been with the thumb. In the same way, the orthopædic difficulty had been to overcome the spasm of the thumb. He would also like to ask how soon the children operated upon could be got to use their thumbs. The hands were the most difficult part to treat.

Dr. C. M. HINDS HOWELL said he had at present under care a man who was a tabetic, with very severe gastric crises. He had been treated with every conceivable sort of medical method for these, and, finally, last summer he decided to have tried the operation of division of the posterior roots. Pain was the predominant characteristic of his attacks; the vomiting seemed to be secondary. The patient got some relief by making himself sick. The maximum point of pain was just above the umbilicus. The fibres which were divided by Mr. Warren Low at the Great Northern Hospital were the eighth, ninth, and tenth posterior divisions of both sides. The man recovered from the operation, but the gastric crises were not permanently benefited, though they were better for six weeks. He was having the crises at the rate of three or four a week. Possibly sufficient roots had not been divided, probably the seventh and eleventh should have been cut. But it did not follow that the gastric crises were simply due to irritation of the root outside the spinal cord. As Dr. Purves Stewart said, there was degeneration going on inside the cord, and he did not think one could separate off gastric crises from the lightning pains. The operation was not invariably successful for the lightning pains, and one could not expect it to be always so in gastric crises, and he did not think one should indiscriminately start cutting the posterior roots in tabes or gastric crises unless one had considered the matter very carefully indeed.

The PRESIDENT again thanked Professor Förster for coming so far to read his paper. He asked whether Professor Förster would advise as a routine matter division of the posterior roots in Pott's disease where there is much spasm. That was an operation which one frequently had to perform where spasm had been very marked, and his experience had been that the spasm had always subsided in almost all his cases. But in the last case but one which came under his care he could not say the spasm altogether disappeared when the patient left the hospital. One did not feel very keen about opening the theca when one was working in tuberculous abscess.

Professor FÖRSTER, in reply, said he advocated division of the posterior roots only in cases of extreme spasticity, but in ten cases operated upon by Küttner six were treated for a long time by ordinary orthopædic measures, but without success. It was difficult to decide immediately if a case was suitable for division of the posterior roots, and it was good to try orthopædic treatment first in all cases. Spasm of the adductors had been removed immediately by division of the posterior roots. Dr. Spitza of Gratz had done much work in implantation of the median nerve into the radial, and it was a very good idea, but the spasticity did not disappear. In Pott's disease division of the posterior roots should only be tried when one could be sure the disease was not going on more. If there was no certainty that the tuberculosis of the vertebral column was cured the posterior roots must not be divided. The only case

reported was one in which he and his colleagues tried first a laminectomy of the cervical region, but there was no good effect from it. Later division of the posterior nerve roots in the lumbar region was tried and the spasticity disappeared completely.

EDINBURGH OBSTETRICAL SOCIETY.

Chylous Mesenteric Cyst simulating Pelvic Tumour.—Repeated Cæsarean Section for Contracted Pelvis.

A MEETING of this society was held on June 14th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Professor J. A. C. KYNOCH (Dundee) read notes on a case of Chylous Mesenteric Cyst, simulating a Pelvic Tumour. He said that the most important physical signs of these cysts were: the most prominent part of the tumour was near the umbilicus; they were extremely mobile, so that the cyst might be readily pushed from one side of the abdomen to the other and to a certain extent up and down; and there was a note of resonance on percussion all round the tumour, with very frequently a resonant band crossing the swelling. The most outstanding symptoms were pain over the tumour, intestinal disturbances, attacks of vomiting, with persistent diarrhœa, and general wasting, due in all probability to interference with the lacteals of the mesentery. The patient was aged 37 years and had noticed a swelling increasing in size for three years. She had had three children, the labours being uncomplicated. In the hypogastric region a well-defined, tense tumour was palpated, nodular on the surface, and extending from the left iliac fossa to about an inch to the right side of the umbilicus; its mobility was very marked. There was a resonant percussion note round two-thirds of the tumour. Per vaginam, a cystic swelling of the size of a lemon was felt in the right fornix; it seemed to be intimately connected with the uterus. At the operation an ordinary multilocular cyst of the right ovary was found and removed. The uterus and left ovary were normal. The abdominal tumour had the appearance of a parasitic fibroid, but further investigation showed it to be situated between the layers of the mesentery of the lower part of the ileum. A small incision showed its contents to have a milky appearance, which on later investigation proved to have all the characters of chyle. The cyst was enucleated, the divided edges of the peritoneum being brought together by sutures, and a glass drainage-tube was inserted into the seat of the wound. The patient made a satisfactory recovery. — Dr. J. HAIG FERGUSON, Dr. J. W. BALLANTYNE, and the PRESIDENT made remarks on the subject.

Dr. JOHN MCGIBBON read a paper on Repeated Cæsarean Section for Contracted Pelvis, with notes of a case successfully performed for the third time on the same patient. He pointed out that the subject of repeated section had been discussed at various obstetrical societies during the past year. Routh, in a valuable and elaborate paper read before an International Congress of Obstetrics held at St. Petersburg last September, pointed out that the teaching of Mauriceau of Paris must have greatly influenced British obstetricians, and that his condemnation of Cæsarean section in 1752 had apparently the effect of holding British operators in check, as until 1821 only a few Cæsarean sections were performed, and all with one exception ended fatally. The conservative operation, with a mortality of about 90 per cent., still struggled on until 1876, when Porro introduced his method of supravaginal hysterectomy with extra-peritoneal treatment of the stump, which seemed as if it were going to displace the conservative Cæsarean section. In 1888 some successful conservative sections were reported and this operation gradually gained favour, the mortality steadily diminishing. Thus in 1890 the mortality had fallen to 38 per cent. and ten years later to 20 per cent. Now the mortality, if section was performed before labour, was 2·9 per cent. Dr. McGibbon's patient had her first labour terminated by craniotomy and her next three pregnancies by Cæsarean section. She had a generally contracted pelvis with a true conjugate of from 3 to 3¼ inches. The third operation revealed only a fine linear depression as the trace of the previous scar. There was no thinning of the uterine wall in the scar region and, contrary to the experience of many, there were no adhesions. When compared with premature labour as the operation of election in such a case, Cæsarean section had distinct advantages. The fœtal mortality of induced labour in a pelvis of from 3 to 3¼ inches was stated by some authorities to be not less than 10 per cent. In a series of cases induced in successive pregnancies by Dr. McGibbon the fœtal mortality had been practically *nil*, provided the labour ended spontaneously. When, however, after the induction, forceps were required the mortality was nearly 50 per cent. If at the thirty-fourth week the head could not be pushed through the brim, the chances of a spontaneous delivery with survival of the child after an induction became most uncertain, and then Cæsarean section became the operation of choice. For the performance of the classical Cæsarean section various incisions were proposed and practised, but the transverse fundal and the median longitudinal on the anterior wall were the only two much employed in this country. In recent years attempts by Frank, Sellhein, and others to perform an extra-peritoneal Cæsarean section had been carried out, the original aim being to empty the uterus in infected cases without contaminating the peritoneal cavity. Such methods had been disappointing, as they had been accompanied with various injuries to the peritoneum and bladder, and had had a morbidity of 30 per cent. Sellhein suggested the production of a utero-abdominal fistula in infected cases. The difficulty in the past had been with the doubtfully infective cases, but there seemed to be hope from recent bacteriological investigation that intra-uterine swabbings might identify the presence of pathogenic organisms and so indicate the course to be followed. Craniotomy was indicated in cases believed to be infected, as Cæsarean section became risky and craniotomy showed a smaller mortality. The question of adhesions between the uterus and abdominal wall had always been a source of anxiety to the operator. These would take place by accident in some cases. Wallace of Liverpool intentionally fixed the uterus to the abdominal wall with the object of being able to perform a future section without entering the peritoneal cavity. This procedure had been condemned by some as predisposing to rupture. The relation of repeated section to rupture was important. Mason and Williams, from experiments on animals, had concluded that a carefully united uterine scar would stand any strain which the uterine muscle was capable of enduring, and they maintained that rupture was dependent upon imperfect consolidation. It was an established fact that the mortality of repeated Cæsarean section was rather less than of the primary operation. It was not the duty of the surgeon to advocate sterilisation; he should lay the possible risks before every woman who came to him desiring a living child by repeated Cæsarean section and be ready to perform it on a third, fourth, or further occasions if requested by the patient to do so.—Dr. D. BERRY HART, Dr. HAIG FERGUSON, Dr. BALLANTYNE. Dr. W. FORDYCE, Dr. J. LAMOND LACKIE, Professor KYNOCH, and the PRESIDENT discussed the paper, and Dr. MCGIBBON replied.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on June 5th, Mr. T. Gunton Alderton being in the chair.—Mr. Leonard Bidwell read a paper on the Immediate and Ultimate Results after Gastro-enterostomy for Gastric and Duodenal Ulcer, basing the paper on 180 cases on which he had operated. The immediate mortality after the operation was about 7 per cent., but in most of the fatal cases the operation had been performed for hæmorrhage, the mortality in uncomplicated cases being practically nothing. Of the cases which recovered and could be traced, about 80 per cent. were completely cured, 10 per cent. were relieved, and 10 per cent. derived little benefit. Attention was drawn to the necessity for the occlusion of the pylorus in cases of duodenal and pyloric ulcer, since the operation of gastro-enterostomy alone was likely to be followed by a recurrence of the ulcer. It was also pointed out that gastro-enterostomy alone was useless in the case of an ulcer situated at a distance from the pylorus. In such cases it was advised that the ulcer should be excised at the same time that the gastro-enterostomy was performed. In conclusion, operation was recommended in every case of duodenal ulcer and in cases of gastric ulcer which had resisted medical treatment.—Dr. F. G. Crookshank considered that cases of gastric ulcer, if treated properly by drugs, &c., would not show a mortality anything like 10 per cent. The mistake in failing to diagnose

them properly accounted for many which ultimately required surgical treatment. With regard to duodenal ulcers he thought most cases with established diagnosis should be operated on early.—Mr. Walter E. Fry, Mr. R. Bevan, Mr. W. P. Mallam, and Mr. T. R. Atkinson joined in the discussion, and Mr. Bidwell replied.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on June 14th at the Royal Army Medical College, Millbank, Colonel Sir David Bruce, A.M.S., being in the chair.—Major C. F. Wanhill, R.A.M.C., read a paper on the Supply of Water in the Field. After pointing out the disadvantages of very large units, such as the brigade sterilising unit, he came to the conclusion that the best unit was a half battalion water-cart. The desiderata for such a cart were that it should be mobile, simple and rapid in action, and should not contain any fragile parts which if broken would render the apparatus useless. Taking these points into consideration, candle filters, ultra-violet ray apparatus, heat exchange sterilisers, and chemical methods of sterilising, were all unsuitable for the provision of large quantities of pure water in the field, though chemical methods had their uses in the purifying of small quantities of water for detached individuals. Experiments at the Royal Army Medical College and at Aldershot had resulted in the devising of an apparatus which depended for its action on the precipitation of the mud in the water by means of alum; the water so treated was passed through flannelette and the mud became deposited on the cloth, forming a layer which acted in much the same way as the zooglea layer on a sand filter. The clarified water which passed through had from 60 to 80 per cent. of the original germs removed, and if it was necessary to remove all the germs, as might happen in the presence of specific contamination, the clarified water could be further passed through porous candles. The candles which were used would only remove 30 per cent. of the germs in untreated water and they became blocked almost at once; but with clarified water the whole of the remaining germs were removed and the output, at the rate of 120 gallons per hour, was constant. Major Wanhill then gave a demonstration of the new water-cart.—Major W. S. Harrison, R.A.M.C., Colonel Ryan, Australian Army Medical Corps, and Colonel Sir David Bruce took part in the discussion.

Reviews and Notices of Books.

Modern Treatment: The Management of Disease with Medicinal and Non-Medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; Physician to the Jefferson College Hospital. Assisted by H. R. M. LANDIS, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania). In two volumes. London: Henry Kimpton. 1911. Vol. I., pp. 900; Vol. II., pp. 930. Price £3 net.

THIS work contains an immense amount of information and deals with all forms of therapeutics. At one time the means at the disposal of the physician and surgeon consisted mainly in drugs, in climate, in hydrotherapy, and electrotherapy; but within the last 15 or 20 years the wide and fruitful fields of treatment covered by serum-therapy and the various vaccines have been developed, with a far greater approach to specific treatment than has ever been previously achieved. Further, during the time that these advances have been made the pharmacologist and the chemist have increased the materia medica, with the result that remedies are more thoroughly understood, new ones of great value have been evolved, and most of them can now be obtained in a form in which they can readily be made use of. The appearance of a work which places in the hands of the physician a competent summary of many of these advances is, therefore, timely, and the editors have succeeded in placing before the profession a most useful work of reference.

In an interesting preface Dr. Hare reviews some of the more prominent points connected with therapeutics in general. He draws attention to the relations that exist between the pharmacologist and the physician. If a given dose of a given remedy were always suitable for a given ailment there would be little need for the physician except as a diagnostician. It is the never-ceasing changes in all living persons and the different effects of disease in different individuals that confer value on the bedside experience of the medical man. The pharmacologist may lay down the fundamental processes, but the clinician must make the distinctions in their use which develop the desired results. The opinion expressed by Dr. Hare of the attitude which should be adopted by the competent medical man of to-day will be cordially and generally accepted. The practitioner must be a clinical investigator, who welcomes every gain in knowledge as an additional aid in his efforts to do good. He must ever be controlled in his practice by the fact that he is treating a patient, not a disease, a patient whose powers of dealing with a malady are marvellous, with an organism that is to be directed, not driven or forced, into the right path.

Dr. Hare has been wise in the selection of the contributors for the various articles. Thirty physicians have assisted in bringing this work into the form of a system of modern treatment. It would, perhaps, be invidious to pick out for comment any one or more of the contributions, but without detracting in any way from the others we would draw the attention of our readers to the following: The Untoward Effects of Drugs, by Dr. R. D. Rudolf (Toronto); Serum-Therapy, by Dr. W. H. Park (New York); Tuberculin as a Therapeutic and Diagnostic Agent, by Dr. F. M. Pottenger (Monrovia, Cal.); and Tuberculosis, by Dr. H R. M. Landis (Philadelphia).

A full index is provided, which renders reference to any particular subject easy and rapid.

The Mechanism of Life. By Dr. STÉPHANE LEDUC, Professeur à l'École de Médecine de Nantes. Translated by W. DEANE BUTCHER. London: Rebman, Limited. 1911. Pp. 172. Price 6*s.* net.

Professor Leduc's physico-chemical theory of life and spontaneous generation has excited not a little opposition on the Continent. We question if in its English garb it will be hailed with enthusiasm either by biologists or physicists. It appears that in 1907 the Académie des Sciences did not include in its *Comptes Rendus* the author's work on Osmosis. We have travelled far from the days of John Hunter's "Vital Principle," and now for the "principle of life" we have "The Mechanism of Life," which is an attempt by a physicist to explain so-called living phenomena on physical lines. We are told that the step between a stalagmite and a polyp is less than that between a polyp and a man; that "what constitutes a living being is its form"; and that biology is but a branch of the physico-chemistry of liquids. As the basis of the author's doctrine is physical he gives an account of solutions, electrolytic solutions, colloids, diffusion and osmosis, periodicity, cohesion and crystallisation, karyokinesis, and energetics. This, with the introductory matter, occupies more than one-half of the text, which is illustrated by a number of figures showing liquid diffusion and various patterns produced by adding one chemical substance to another, whereby, as is well known, various forms of "artificial cells" and membranes can readily be produced. He goes even so far as to speak of a fringe of cilia obtained by sowing coloured drops of concentrated salt solution in a weaker salt solution.

The last 70 pages are devoted to what the author calls "synthetic biology." In this chapter, while the author

mentions Montgomery's paper (1867) on the Formation of So-called Cells, we failed to find a reference to Rainey's well-known work on a similar subject (1858), or to that of W. Miller Ord. We then come to what is called "osmotic growth, a study in morphogenesis," a chapter which is illustrated by a large number of figures showing the outward similarity of many of these so-called growths or formations to various familiar botanical and zoological forms. Stem-like forms are produced by sowing a mixture of $CaCl_2$ and $MnCl_2$ in a solution of alkaline carbonate, phosphate, and silicate, terminal organs, like catkins, developing in a solution of ammonium chloride; we have also osmotic madrepores and mushrooms, and so on. The author hopes to find in the play of these physico-chemical forces the road which will lead some day to the discovery of the origin and the evolution of life upon the earth.

Diseases of the Spinal Cord. By R. T. WILLIAMSON, M.D. Lond., F.R.C.P. Lond., Assistant Physician, Royal Infirmary, and Lecturer in Medicine, Victoria University, Manchester. Oxford Medical Publications. Second Impression. With 183 illustrations and 7 plates. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 432. Price 15*s.* net.

THE second edition of this excellent text-book has been enlarged by the inclusion, in an appendix, of paragraphs relating to epidemic poliomyelitis, the operative treatment of gastric crises in tabes dorsalis, of spinal serous meningitis and of spastic paraplegia, and the X ray treatment of syringomyelia. Dr. Williamson still adheres to the description of "ataxic paraplegia" as a separate entity, although the microphotographs of the condition which he furnishes are suggestive of subacute combined degeneration of the cord. He maintains, further, that progressive muscular atrophy and amyotrophic lateral sclerosis are pathologically distinguishable, but the evidence cannot be said to be entirely convincing. Some of the diagrams, for instance Fig. 22, are not, perhaps, quite so clear as the beginner in neurology might desire. The statement that "it has been frequently observed that syringomyelia has followed injury to the back" surely requires some substantiation. The rôle of trauma in syringomyelia is most debateable; even the cases reported in Guillain's well-known "Thèse de Paris" of some ten years ago are open to question, and they were cases observed and examined with the greatest care and insight. Criticisms such as the above, however, are of minor significance in view of the general excellence and comprehensiveness of the volume, which can be recommended confidently to student and practitioner alike.

Traité d'Histologie. Par A. PRENANT, Professeur à la Faculté de Médecine de Paris; P. BOUIN, Professeur à la Faculté de Médecine de Nancy; et L. MAILLARD, Professeur Agrégé de la Faculté de Médecine de Paris. Tome II., Histologie et Anatomie Microscopique. With 572 figures in the text, of which 31 are printed in colours. Paris: Masson et Cie. 1911. Pp. xl. + 1200. Price 50 fr.

THE authors are to be congratulated on the appearance of this, the second, volume of the French standard treatise on histology. The first volume has already been published, and it deals exhaustively with general and special cytology; the present volume completes the work and treats of histology and microscopical anatomy. M. Prenant and M. Bouin are the authors of this portion of the work, which fully maintains the high standard reached by its forerunner.

The work is divided into ten books, comprising some 60 chapters, and when it is stated that the entire volume contains 1240 pages and 572 illustrations, some idea may be gained of the thoroughness with which the subject is treated. Indeed, the undue bulk of the volume is the only criticism we would level against this excellent treatise, for a paper-covered octavo volume over three inches thick is not at all convenient to handle. The illustrations are uniformly good, nearly all of them are original, and many are reproduced from excellent micro-photographs. The text is clear; the treatment is exhaustive and thoroughly up to date.

The schools of France are to be congratulated on the completion of this monumental treatise upon the microscopical structure of the body. In the Prenant-Bouin-Maillard Histology and the uniform Poirier-Charpy-Nicolas Anatomy France possesses the best modern treatise upon gross and microscopic anatomy published in any language.

Text-book of Nervous Diseases, for Physicians and Students. By Professor H. OPPENHEIM of Berlin. Fifth enlarged and improved edition, with 432 illustrations in the text and 8 plates. Authorised Translation by the late ALEXANDER BRUCE, M.D. Edin., F.R.C.P. Edin., LL.D., Physician to the Royal Infirmary, Edinburgh. In two volumes. Edinburgh: Otto Schulze and Co. 1911. Pp. 1424.

THE desire of the translator of Professor Oppenheim's well-known text-book has been to render a work that enjoys so high a reputation more accessible to English and American readers. Every endeavour has been made to reproduce the meaning of the German text exactly and clearly, and in conformity with Professor Oppenheim's wish the volumes have not been in any way edited. But those who are familiar with previous editions of the text-book will note with pleasure that the value of the present edition has been considerably enhanced by the inclusion of numerous bibliographical references, which have been chosen with noteworthy judgment. The most important and valuable articles on each subject is quoted, as well as the monographs and *résumés*, from which the reader can conveniently trace his way back to the older literature. The subject-matter of the book has been enriched by taking into consideration all recent advances in the study of nervous diseases and their treatment. The illustrations have been augmented and X ray photographs have been incorporated. In these two handsome volumes, then, the practitioner and the student will find their respective neurological needs adequately catered for, and the specialist himself may consult them with advantage, inasmuch as they contain the results of the lengthy clinical and pathological experience of one who has devoted his life to the elucidation of nervous disease. The responsible task of translating has been accomplished with conspicuous success by Dr. Bruce, whose recent death is greatly to be deplored. Presented in this guise to English readers, Oppenheim's text-book should increase its already wide popularity, while its introduction to a larger circle of readers marks another step in the steady advance which neurology is making.

Die Zeugung beim Menschen. (*Generation in Man.*) By Dr. HERMANN ROHLEDER. With an appendix on Artificial Impregnation in Man. Leipzig: Georg Thieme. 1911. Pp. 290–777. Price M. 7.

IN this book the author considers the question of generation in the human subject primarily, and more especially the possibility of artificial impregnation in the human female and the many moral and legal questions concerned therewith. After a section devoted to a consideration of the process of generation in general and its laws, the second section of the book is devoted to the many questions associated with its physiology. This includes an account of the nature and development of the semen, the physiology of erection of the penis and ejaculation, the functions of the prostate and of the glands of Cowper. Menstruation and ovulation are then

discussed in detail, and finally insemination and fertilisation. Such important questions as fertility and sterility are also considered, and the problems of super-fecundation, super-fœtation, heredity, and the determination of sex. The author next takes up the pathology of generation and the many etiological factors concerned therewith.

The appendix deals very fully with the question of artificial impregnation in the human subject. After some pages devoted to a consideration of sterility Dr. Rohleder passes on to discuss the indications and contra-indications of this procedure. The technique of the operation and the methods of carrying it out are all described. Its results are also considered and its relation to religion and the morals, both of the individuals concerned and of the medical man who practises it. The author maintains that a medical man is right in employing this means of correcting sterility, that it is a helpful therapeutic measure, and that he is, indeed, bound in any given case, if need be, to try this method when others fail. It is obvious, therefore, that Dr. Rohleder takes up a very strong position on this point, and he has himself carried out the procedure in some six cases. In four of these cases there was no result, in one case a possible miscarriage after a period of amenorrhœa of five and a half weeks' duration, and in the last case a successful result, the woman giving birth to a healthy child at full term. The question of artificial impregnation hardly deserves the amount of attention the author has given it, but for a full discussion of the whole subject from all points of view anyone interested in the matter may refer to this very complete work. In conclusion, the author considers that the method is of importance, not only from the point of view of the individual, but also from that of the nation, since in it he sees a possible remedy for the 10 per cent. of sterile marriages, which he regards as a national calamity.

LIBRARY TABLE.

Care of the Patient: A Book for Nurses. By ALFRED T. HAWES, A.M., M.D. With 6 illustrations. Philadelphia: P. Blakiston's Son and Co. 1911. Pp. 173. Price $1.00 net. —This little work is primarily a text-book of medical, surgical, and maternity nursing for American nurses, and is in many respects a useful compilation. The success or failure of medical treatment to a great extent often depends on the nurse. A physician may outline medical treatment and a surgeon may operate successfully, but the patient's recovery depends frequently on the skilful performance of the details of nursing. Where a surgeon has to leave many details before and after operation to a nurse, an unclean instrument, carelessness in preparing surgical dressings, the omission of any one of the numberless details in preparing a patient for an operation, may cause disaster and turn the scale against the patient's recovery. For this reason any thoughtful addition to the scientific aspects of nursing from the pen of a medical man is welcome. Many of the procedures are described rather minutely, but in skilled nursing it must be admitted that no detail is so trivial that it can be neglected. The text is methodical in its arrangement, the type is good, and there is a satisfactory index.

Outlines of Medical Jurisprudence and Treatment of Poisoning. By RAMES CHANDRA RAY. Calcutta: Published by the Author from the Hare Pharmacy. 1910. Pp. 244. Price 2 rupees.—This volume is intended mainly for the use of students and practitioners in India. The author shows considerable ability and a thorough knowledge of the subject in the way in which he has compressed so much information into a comparatively small space. He remarks that "we are a fast-living generation, living in the days of tabloids, and having just enough time to be contented merely with bird's-eye views of subjects." He, therefore, suggests that this book may be considered a tabloid of jurisprudence, suitable for a medical jurist in an out-of-the-way "mafossal" station where he has no more pretentious books at hand. The subject matter has been admirably arranged, and the free use of comparative tables greatly aids in the explanation of the numerous problems that may arise in medico-legal work. We believe that the book will be found of great value by those for whom it is intended. Students in this country also would find it of use in refreshing their memories after studying the larger text-books on the subject.

Sight Testing Made Easy. By W. WRIGHT HARDWICKE, M.D. St. And., M.R.C.P. Edin., L.R.C.S. Edin. London: J. and A. Churchill. 1910. Pp. 76. Price 2*s.* 6*d.* net.—This little book may prove useful to the general practitioner as a stimulant to memory, provided he has had a good grounding in refraction. It may also prove a useful help as an introduction to the study of refraction by the student. The present edition has added to the subjective sight testing to which the former edition was confined some notes on retinoscopy, the objective form of sight testing.

Health Hints and Health Talks. By E. R. PRITCHARD, Secretary of the Chicago Department of Health. Chicago: The Reilly and Britton Co. 1911. Pp. 153. Price 50 cents. —This little book contains much useful health knowledge for the laity, written in a breezy and interesting style, as befitted material that was originally compiled in accordance with the scheme of general hygienic education so well carried on by the Chicago Department of Health. These hints and talks appeared in the *Chicago Tribune* and other newspapers, and are now collected into an attractive little volume for discursive reading by a wider circle of readers. They contain essentially practical advice to be intelligently carried out, rather than platitudes to be read and forgotten; and they embrace so large a field that there are few, whether laymen or general practitioners who have to advise laymen, who will not benefit by the perusal of them.

The Pharmacopœia of the Queen's Hospital for Children (formerly the North-Eastern Hospital for Children). Compiled by a Committee of the Medical Staff. Fifth edition. London: H. K. Lewis. 1911. Pp. 73. Price 2*s.* 6*d.* net. — All practitioners who have much to do with children's ailments, and that includes most of those medical men in wide general practice, will find many useful suggestions in this little pocket formulary. In addition to the approved formulæ used at the hospital, it contains much useful information on the care and management of children, both in health and in those forms of disease to which they are especially liable, as well as the customary tables.

The Girls' School Year Book (Public Schools) 1911. London: The Year Book Press. Pp. 606. Price 2*s.* 6*d.*— This is the official book of reference of the Association of Head Mistresses, and contains concise accounts of many matters connected with the education of girls which will be useful both to parents and teachers. The book is divided into two parts, the first of which contains a list of the leading girls' public schools—i.e., schools having a governing body, as distinct from private institutions, with information as to staffs, examinations, scholarships, fees, and so forth. The second part is devoted to a series of articles on various subjects, including professions and occupations suitable for girls, with the qualifications necessary and the cost of training.

Across the Bridges. By ALEXANDER PATERSON. London: Edward Arnold. 1911. Pp. 273. Price 6*s.*—The more exact our knowledge of the home life of the poor and of influences for evil which surround the growth of the child,

the more easy will it be to apply practical remedial measures to the very pressing problems of social reform, though it must not be forgotten that all satisfactory solutions of social questions must ultimately depend upon a general quickening of the responsibilities, not of any one class, but of the whole community. Mr. Alexander Paterson, who has spent many years among the poor in South London, has given us in "Across the Bridges" a vivid description of life among the poor in the squalid districts on the south side of the Thames, from birth to marriage, death often taking place in the workhouse, the hospital, or the street. Particularly valuable is the chapter on school influences, in which the author rightly points out that the primary object of a school is not to convey knowledge or teach a trade, but to make boys into men, a very difficult task when it is remembered that among the class described the boy "will look to become a man at the age of 14." Moreover, in the elementary schools the teachers are only teachers and never, save in a few rare instances, masters, as that term is understood in our public schools, where the master can mould and develop a boy's life. Mr. Paterson recognises the great utility of medical inspection in the schools and believes that the most beneficial of school influences lie in the direction of health. For "Across the Bridges" there is a great waste of life which, given other environment, would develop into a valuable asset to the State. The Bishop of Southwark, who writes an introduction to the book, states an important truth when he says: "There is no lack of sympathy in English hearts; there is a great lack of mutual knowledge in different classes. The increase of such knowledge is among the very first of our national needs." The sketches which Mr. Paterson has drawn of a certain phase of London life should do much to supply that knowledge within their indicated limits.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, &c. Assisted by LEIGHTON F. APPLEMAN, M.D. Vol. IV., December, 1910. London: Rebman, Limited. Pp. 360. Price annually £2 net, or 12*s.* per volume.—The volume before us deals with diseases of the digestive tract, with diseases of the kidneys, with genito-urinary diseases, with the surgery of the extremities, and with recent advances in therapeutics. The article on the digestive system is by Dr. R. S. Lavenson, and contains an interesting review of papers dealing with dilatation of the œsophagus, with gastric ulcer, with the diagnosis of carcinoma of the stomach, and with the form of dyspepsia associated with chronic disease of the appendix. It is the opinion of the author that Cammidge's reaction is not of diagnostic value, depending largely on the food consumed, and the introduction of magnesium salicylate as a remedy for flatulence. The kidneys are dealt with by Sir John Rose Bradford, who discusses recent work on vascular hypertension, on albuminuria as a sequel of nephritis, on infection of the urinary passages by bacillus coli, and the formation of calculi. In the chapter on the surgery of the extremities, written by Dr. Joseph C. Bloodgood, the value of tincture of iodine as a first application to wounds is recorded, and much work dealing with military surgery is analysed. The almost invariable occurrence of infective processes after gunshot wounds is emphasised, the dangerous organisms being those of tetanus and of malignant œdema. Successful transplantation of joints is recorded, and the method of interposition of tissues after resection to maintain the mobility of articulations. Dr. W. T. Belfield, who writes on genito-urinary surgery, calls attention to the recent view that hydronephrosis may ensue after an acute total blockage of the ureter, and to the use of vaccines in urinary work. He also analyses papers dealing with the influence of the secretions of the ductless glands, especially of the adrenal bodies, on the sexual organs. Recent advances in therapeutics are discussed by Dr. H. R. M. Landis. We may mention among the subjects alluded to the use of acetone in inoperable cancer and the employment of adrenalin in cases of plague. This digest has now established itself as a most important summary of medical and surgical progress, and might well find its way to the bookshelves of all who wish to keep abreast with the advance of science. It is well printed and got up, and contains many illustrations, some being in colours.

Talks About Ourselves: Simple Lessons in Hygiene and Physiology. By KATHLEEN FALMOUTH. With a frontispiece by T. C. GOTCH. London: George Routledge and Sons, Limited; New York: E. P. Dutton and Co. 1911. Pp. 350. Price 1*s.* 6*d.* net.—Lady Falmouth is to be congratulated upon a thoroughly sensible little work. The "talks" are intended to assist parents and teachers as well as to instruct boys and girls, and they make up a book which is a happy blend of thoroughness and simplicity. A really intelligent child, reading the book carefully, would obtain unaided a rough grasp of physiology, while the parent and teacher will find in the different chapters material out of which valuable lessons to pupils can be constructed, and apt replies derived for response to the ordinary questions asked by children of their seniors. Lady Falmouth in her preface modestly disclaims originality for her teachings, and it is true that all standard books on elementary physiology cover much of the ground over which she has gone; at the same time, as far as we know, her methods of presenting physiological facts are quite original, while they are devised in the proper way to arrest the reader's attention. The last sections of the book, entitled "A Parable from Nature," "Life," and "Character Building," form a sort of moral of the "talks," and there is no doubt that children who have been brought up to regard life from the standpoint indicated in these pages will be extremely likely to make good citizens and happy and healthy individuals. There is an adequate glossary, and the pictures fulfil their proper function in that they really elucidate the text.

The Land of Promises. By STANLEY PORTAL HYATT. London: T. Werner Laurie. 1911. Pp. 293. Price 6*s.* net.—In this, his latest novel, Mr. Stanley Hyatt in no way falls short of the vivid description and terse diction of his previous performances, but in "The Land of Promises" his dislike for methods which have been used in the government and development of South Africa, and his objection to certain forms of missionary work, lead to the introduction of details which impair an otherwise good story well told. The story centres round a problem in heredity, and shows how an inherited predisposition may be subdued, and perhaps conquered, by early training and environment, especially when helped by an inbred sense of honour, by self-reliance, and by the love of a noble woman. The reverse of the picture is also well brought out. Hatred of hypocrisy sometimes leads the author to be harsh in his judgments, but allowing for this the novel is well worth reading.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—On June 7th, 1811, occurred the birth of Sir James Y. Simpson, and the present being the centenary year the June issue of this magazine is mainly devoted to reminiscences and appreciations of the great obstetrician. Personal recollections are contributed by Miss Eve Blantyre Simpson, his daughter, and by Sir

Alexander R. Simpson, his nephew. Dr. Joseph Anderson, professor of antiquities in the Royal Scottish Academy, discusses Simpson's work in archæology; Sir Halliday Croom writes on his influence on the progress of obstetrics; and Dr. A. H. Freeland Barbour on his position as a gynæcologist. Dr. D. Berry Hart deals with his work in the introduction of anæsthetics and with other of his scientific writings, while Dr. J. W. Ballantyne writes of his contributions to antenatal pathology. The same number of this journal contains Sir Alexander R. Simpson's address to the Harveian Society entitled, "Life and its Epiphanies." Dr. D. Berry Hart contributes an important paper on Diffuse Adenoma of the Vagina, of which Dr. F. W. N. Haultain records an instance in a separate contribution. Dr. R. W. Johnstone writes on eclampsia originating in the puerperium, which he regards as due to a poison of feeble potency, unable to act until the nervous system is worn out by the strain of labour.

Dublin Journal of Medical Science.—In the June number Mr. J. Spencer Sheill records some striking cases both of failure and success occurring in his experience. Dr. W. M. Crofton discusses the etiology and treatment of diabetes mellitus, which he regards as due to the absence of a co-ferment manufactured by the pancreas, and accordingly treats by preparations of this gland. Dr. G. Arbour Stephens discusses the *modus operandi* of vaccine treatment and suggests an analogy with reverse fermentation.

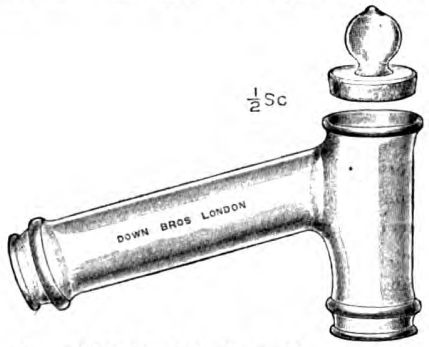
Birmingham Medical Review.—In the issue dated June 15th Dr. Thomas Wilson writes in praise of Pfannenstiel's suprapubic transverse fascial incision for operations on the pelvic organs. Dr. T. Gwynne Maitland deals with the therapeutics of suggestion, and concludes that it is impossible to introduce this method as a branch of recognised medical treatment.

Annali di Medicina Navale e Coloniale. Vol. I. Fasc. III. March, 1911.—This issue, which, despite its date, has only just reached us, contains an interesting account by Dr. G. Saccone of the precautions taken to prevent cholera infection among emigrants proceeding from Naples to South America last autumn when, it will be remembered, a sharp outbreak of this disease occurred in Southern Italy. The *Marsala* was used as a quarantine vessel, provided with all requisites for disinfection and with a bacteriological laboratory for diagnostic purposes; she was anchored close to the disinfecting station at the Mole of San Vincenzo in the port of Naples for four months; the total number of emigrants received is not stated, but although very many came from infected places, and about 1 per cent. were found to be carriers of the cholera spirillum, not a single case of the disease occurred on board owing to the thoroughness of the precautions adopted. Professor T. Rosati writes on the formation of a "sanitary conscience" among the people, beginning in the school, and developed in military employ, as well as in the extensive emigrant service. Three cases of "climatic bubo" (so-called) on board ship are related by Dr. G. Serra, and their relation to pestis bubonica (present in South American ports that had been visited) discussed. There is also an account of the plague epidemic in Manchuria by Dr. di Giura, who, dating from Peking at the end of February, states *inter alia* that serum and vaccine treatment had had negative results, and that inoculation was favoured by most Manchurian practitioners. Haffkine's treatment had not had such good results as in India; the best preventive measures were those that attacked the infection at its seat of origin—e.g., burning corpses and destruction of infected dwellings. Although plague symptoms were noted in rats and other animals, these were not considered to have any importance in spreading the epidemic.

New Inventions.

A NEW COLOSTOMY TUBE.

THE tube here illustrated has been made for me by Messrs. Down Bros., Limited, of St. Thomas's-street, London, S.E. A purse-string suture is run in the wall of the intestine which requires opening, and drawn tight over the lower end of the tube, the ends being tied and again bound round the end of the intestine and tube. The wound is then closed and



dressed, after which the tube is gently raised, the stopper removed, a knife or cautery inserted, and the intestinal wall incised, being steadied by a sharp hook if necessary. There is no hæmorrhage as it is controlled by the ligature surrounding the bowel and tube. In this way absolute asepsis is preserved till after the wound is dressed and the tube fixed.

J. C. F. D. VAUGHAN,
Surgeon, R.N.

Ashburton.

ANTHRAX AT BRADFORD.—At a meeting of the Anthrax Investigation Board, which was held at the Bradford Chamber of Commerce on June 29th, it was reported that since May 15th three cases of anthrax had occurred: two of malignant pustule, both of which recovered, and one of the pulmonary variety, which ended fatally. Dr. F. W. Eurich said that a further series of experiments had been conducted with a view of determining whether anthrax germs would spread within a bale when water-damaged, and it had been found that though the bacillus might multiply locally, it did not pass deeper than about 1 c.m. into the surrounding material. In a discussion on the three reported cases the necessity for the elimination of all blood-stained material during the sorting process was emphasised, and the board decided to urge through the press the advisability of sorters in their own interests picking out all such material. Since the meeting a case of anthrax has occurred at Knayton, near Thirsk, the patient having presumably contracted the disease as the result of skinning a beast which was recently slaughtered and afterwards found to be suffering from anthrax. The patient is progressing favourably.

DONATIONS AND BEQUESTS.—By the will of the late Mrs. Ellinor Arbuthnot the testatrix bequeathed £500 each to King Edward's Hospital Fund, the Guildford County Hospital, and the East London Nursing Fund.—The late Miss Maria Goodenough Cox has bequeathed £3000 to the Taunton and Somerset Hospital.—Among other bequests the late Mr. Henry Kirk has left £5000 upon trust to pay the income to the Nottingham General Hospital, £1000 to the Nottingham General Dispensary, £300 each to the Nottingham Blind Institution, the Nottingham Children's Hospital, the Nottingham Hospital for Women, the Mablethorpe Convalescent Home, and the Skegness Convalescent Home, and £200 to the Nottingham Eye Infirmary.—The late Mrs. Mary Ann Routledge has bequeathed £1200 to the York County Hospital and £200 to the York Dispensary.—Under the will of Mr. William Jones the testator left £1000 each to the Southport Infirmary and the Southport Convalescent Home and Sea-Bathing Infirmary.—The late Mr. James Clason Harvie has left by will, among other large bequests, £3000 each to the Edinburgh Royal Infirmary and the Glasgow Royal Infirmary, and £1000 to the Royal Hospital for Sick Children, Glasgow.

THE LANCET.

LONDON: SATURDAY, JULY 8, 1911.

The National Insurance Bill.

WE have received again this week letters from correspondents of all descriptions dealing with the National Insurance Bill, but there does not seem to us any necessity for publishing them save one or two, for no new points were brought forward by the writers. All very strongly supported some or other of the heterogeneous objections made by previous correspondents, and all in so many words, or by implication, agreed that time is wanted to consider the Bill. The outstanding lesson to be drawn on every side, and from every expression of opinion upon the Bill, is the necessity for time to discuss the varied and important issues raised by it—and this not only in connexion with the medical profession but in connexion with society at large. It seems now to be well known that many Members of Parliament, either on general grounds or special grounds, hold the view that the Bill is essentially one that should not be hustled through its various stages at all costs, to be set right somehow or other by new legislation later. We can quite understand the anxiety of the Government to have a measure which was received by the representatives of the people upon its introduction to their notice with such generous enthusiasm on both sides of the House. The Government may well consider that the people have practically commissioned the Executive to make the Bill into an Act with the shortest delay possible. Further, it may be pleaded that, as there are many interests involved of the sort which necessarily suffer during periods of anxiety, uncertainty, and transition, it is for the good of the majority that a definite solution of the difficulties should be arrived at with the minimum of delay. We can follow these arguments for expedition quite easily, but they are unsatisfactory, and have been so recognised by the Government, who suspended the Standing Orders of the House on Wednesday night so as to prevent interruption of the debate.

All political parties allow that a considerable number of men, for strong if conflicting reasons, regard with apprehension any rushing-through tactics in connexion with a measure which is going to cost the State an enormous sum of money and affect the relations of employer and employee in thousands of directions. That section of the public which takes due thought on political affairs, without being wholly subservient to party tactics, is probably on the side of the medical profession in hoping that there will be no stifling of debate on the measure, and no precautions spared lest clauses should find their way into the Bill which may be worked in opposition to interests the position of which has not been thoroughly ascertained. No one suggests that time, talent, ingenuity, and experience have not been employed in framing the measure—the public as well as the popular legislative assembly agree here—but there is a good deal of evidence that the information received by those responsible for framing it has not been properly sifted, and that deductions from that information have been arbitrarily made, and have resulted in unforeseen troubles. The medical profession, we think, has been improperly depicted by the lay press as being the only body which regards with apprehension the working of the measure as detailed in the existing proposals. Of course, no one can provide a scheme for medical benefits without medical men. Hence alike the pre-eminent claim of our profession for fair treatment and the fact that our unanimously expressed opinions of resentment at the Bill have attracted such serious consideration. Medical men cannot be dispensed with. But it should be thoroughly impressed upon our readers, and through them upon the public, that medical men are not alone in asking that reasonable time should be accorded for the adjustment of obvious and grave defects. There are many others whose connexion with proposals for sickness and unemployment insurance is very vital, and who will support on strong grounds the growing feeling against any hurry in passing the Bill.

The Chancellor of the Exchequer is still considering the sixfold terms which were formulated by the meeting of Representatives of the British Medical Association on June 1st and which have been endorsed by a large proportion of the Association. The terms are admitted not to embody the whole of the demands of the medical profession, and so far Mr. LLOYD GEORGE has yielded some things that he did not seem prepared to yield at the beginning. In the personal assurances which we were authorised to publish from the Chancellor as long ago as May 20th there will be found a promise, or at least an indication of a promise, to do the two things which it has been publicly announced he will do—namely, to allow adequate representation of the medical profession upon the authoritative bodies created under the Bill, and to make definite provision in the Bill, with a reasonable reservation, for a free choice of doctor. Six weeks ago Mr. LLOYD GEORGE expressed himself as being willing to go thus far, not in so much detail, but certainly by implication; it seems that he has now promised to go farther. In Committee of the whole House on Wednesday an amendment was accepted limiting the class of voluntary contributors to persons whose income does not exceed £160. The Chancellor is also considering the introduction of an amendment securing that persons who can pay fees to medical men, although beneficiaries under the Bill, should continue to pay fees, their benefits being accumulated against future illness.

Section of the Posterior Roots of the Spinal Nerves.

It is only comparatively recently that any surgeon has endeavoured to apply the knowledge gained by the physiologists to the treatment of disease. In the present issue of THE LANCET appear two papers of no small importance on the surgery of the nerve roots. One of the papers is by Professor FÖRSTER of Breslau, one of the pioneers of the

branch of surgery, and the other by Mr. E. W. HEY GROVES of Bristol, who has contributed some important cases.

All the operations have consisted in division of the posterior nerve roots of some of the spinal nerves, and the first question was, What affections would be likely to be benefited by cutting off the sensory impulses from the affected area? The natural answer would be that cases in which there was present intense pain would be most suitable, for it might be thought that if there were pain in a part, and the sensory nerve to that part were divided, the pain would cease completely and at once. In this instance, as in so many others, the result differs considerably from what might have been expected. It is true that some cases have been recorded in which severe peripheral pain has been materially and permanently relieved by section of the posterior nerve roots, but these successful cases form only a small minority of those in which this operation has been performed for pain. In a case in which the interference with sensation was so complete that subsequently it was possible to excise the knee without any anæsthetic, much of the pain in the limb persisted. It is possible that in a certain proportion of these cases the division of the sensory nerve roots has not been complete, but this explanation can apply to only a small number of the failures, and it is likely that the explanation put forward by Mr. HEY GROVES will serve to explain correctly many of the others. In one of his cases, in which he had divided the posterior roots of the fourth and fifth lumbar and the first, second and third sacral nerves, some temporary relief from pain occurred, but later pain returned in a very severe form, and then the patient had recurrent attacks of mania. The pain was better during the maniacal attacks, but it came back as the mental condition improved. In this case, and not unlikely in some of the other unsuccessful cases, it is very probable that the pain was in part at least of psychical origin. It is clear that in such a condition as this the division of the sensory roots cannot do much good. Patients suffering from the characteristic "crises" of locomotor ataxia would not at first sight appear to be suitable for this treatment, but experience has shown that much amelioration is sometimes attainable by section of the posterior roots, and in some few cases the improvement has been so great that the patient has been able to return to his occupation. The suggestion of this method of treatment is due to Professor FÖRSTER, and he performed the first operation in 1908. Up to the present time the operation has been performed in 25 cases. In three of these the operation proved fatal. Of the remaining 22 cases 2 were not benefited, and in 7 there was a relapse, but in 13 cases the result can be considered as satisfactory, though in some of them but little time has elapsed since the operation.

In yet a third form of disease this operation has been employed. In certain cases of spastic paralysis, associated with disease of the pyramidal tract, division of the posterior nerve roots has been employed, and with remarkable success in suitable instances. The explanation that has been given of this beneficial result is this. In the pyramidal tract there are two kinds of fibres—those which carry the motor impulses and those called the inhibitory fibres, which check the sensory stimuli coming by the sensory nerve roots. As a result of the damage of the inhibitory fibres the sensory impulses act unrestrainedly on the nerve centres and a reflex spasm results. If then the afferent impulses be cut off the spasms will disappear. It is, however, essential that the fibres bearing the motor impulses must be intact or at all events not much damaged. It is also clear that the operation cannot be of the least benefit in cases where the spasm is of central origin, as in chorea. The operation has been performed in more than 60 cases, and the results are on the whole very interesting and wonderfully satisfactory, considering the almost hopeless condition of most of the patients. Spasm is in all these cases definitely relieved, and if the pyramidal tract is still fairly undamaged great improvement in motility follows. Mr. HEY GROVES has suggested the injection of a very weak solution of adrenalin just before the operation, and this renders the operation almost bloodless, and thus its duration is markedly shortened.

Only a little more than 20 years have elapsed since the operation of division of the posterior nerve roots was first performed, and it is very much less than this since the number of cases has been at all great, so that any verdict uttered now must at least be tentative, but at least this may be said. The operation in skilled hands has but a small mortality; if the issue in cases where it has been performed for the relief of pain has been very disappointing, in cases of gastric crises results have been achieved which surpass what can be attained by other methods of treatment, and in most cases some improvement follows. It is, however, in certain cases of spastic paralysis that the best results are obtainable, though the cases must be carefully chosen. We shall await with interest the publication of further instances of the performance of this operation, which will enable us to form more exact ideas as to the cases in which it can confidently be recommended. With the improvement of technique the mortality should diminish, though even now it is not very high, and as the operation offers success in cases otherwise hopeless it is deserving of an extended trial.

Medical Administration in Trinidad: The Vindication of Dr. H. L. Clare.

ON two previous occasions we have had to refer to a matter that has greatly—and, as it would now appear, unduly—disturbed the equilibrium of the medico-social atmosphere of Trinidad. In THE LANCET of Sept. 17th, 1910, we chronicled the sitting of a Commission appointed by the Governor of that colony to inquire into certain alleged derelictions of duty, administrative inefficiency, and improper conduct towards his subordinates on the part of Dr. H. L. CLARE, surgeon-general of the colony. In our issue of Feb. 4th, 1911, we briefly reviewed the voluminous report of that Commission, which sat for 27 days, counsel being engaged on either side, and stated that "everything that could possibly be said or written on the matter appears to have been written or said, not once, but many times over." We added: "We are sincerely glad to hear that the chairman of the Commission, although not able to acquit Dr.

CLARE of failings in administrative capacity, finds no proof of any lack of honour or integrity in his character."

This report, with the minutes of evidence and documents, has now been reviewed by the Secretary of State for the Colonies, Mr. HARCOURT, and his decision thereon is expressed in a letter dated June 6th, 1911, and addressed to the Governor of Trinidad, Sir G. R. LE HUNTE, K.C.M.G. The Colonial Secretary, at the outset, expresses the opinion, with which we heartily agree, that it would have been better, in fairness to Dr. CLARE, if an independent medical expert had been appointed as one of the members of the Commission. The need of such an expert Mr. HARCOURT finds demonstrated by the frequency with which the Commission felt itself unable to advise on certain points without professional assistance. Two main facts, the Colonial Secretary says, emerge in the report: 1. That the allegations made against Dr. CLARE in the Legislative Council of Trinidad are not those on which the Commission reported, but that the Commission decided to hear the evidence first, and then to formulate the charges. 2. That Charges II. to VI. inclusive, as formulated by the Commission, and covering those matters relating to the internal administration of the Medical Department of the Colony, substantially broke down on hearing, from which fact Mr. HARCOURT arrives at the conclusion that these allegations must have been made on the slightest foundation and "reflect little credit on those who raised an agitation concerning matters with which they had such an imperfect acquaintance." That leaves only Charges I. and VII. for detailed consideration. With regard to Charge I., the Commissioners consider Dr. CLARE'S procedure as to notification of quarantinable disease based on a mistaken principle. This is a suggestion that the supervising authority should be debarred from waiting for opportunities of making a scientific diagnosis, and we are not surprised to find the Local Government Board in accord with Dr. CLARE'S attitude and procedure. Charge VII. not only raised the question as to professional treatment in a certain case, but also elicited "a distinct suggestion in the several reports of the Commissioners that Dr. CLARE'S conduct to Dr. E. DE VERTEUIL was marked by bad faith." The Secretary for the Colonies, noting that a *primâ facie* case had been made out on these two charges, thought it necessary to obtain expert advice, the more so in view of the general distrust that had arisen concerning the fulfilment of the obligations of Trinidad under the West Indian Sanitary Convention and its present position as the headquarters of the Intercolonial Mail Service. He therefore selected the Local Government Board as the highest authority on quarantine matters, and submitted to them for their opinion the unsettled points in Charges I. and VII., together with all the documents in the case. The correspondence between the Colonial Secretary and the Local Government Board is appended to Mr. HARCOURT'S letter, and makes quite satisfactory reading for those who consider that Dr. CLARE has been very unfairly treated. In the words of the Local Government Board, "it appears from the evidence that in certain instances he [Dr. CLARE] refused to recognise the case as one of plague on clinical evidence alone, and considered bacteriological evidence necessary to justify definite diagnosis. The Board are advised that in so acting, Dr. CLARE followed the customary practice, and would, if he had any doubt as to the true nature of the disease, have acted wrongly in doing otherwise." As regards yellow fever, respecting which bacteriological evidence is not available, Dr. CLARE is held by the Local Government Board to have acted rightly in endeavouring to satisfy himself, by inquiry, as to whether the cases, in which he doubted the correctness of the diagnosis, were or were not in fact cases of the disease. Therefore, Mr. HARCOURT says, the conclusions of the Commissioners on the first charge against Dr. CLARE cannot be upheld. With regard to the seventh charge, that Dr. CLARE tried to coerce his subordinate into changing his opinion as to the real nature of a certain case, and, having failed, accused him of being guilty of the patient's death, a charge which was characterised by one of the Commissioners, Lieutenant-Colonel SWAIN, as "absolutely false and unfounded," this charge was withdrawn. It was found that Dr. CLARE acted improperly in failing to forward to the Governor of Trinidad Dr. SEHEULT'S covering letter, in circumstances which are fully set out in the report of the Commission. After devoting much attention to the point the Colonial Secretary concludes that here Dr. CLARE committed an error of judgment, but that there was no intention on his part to deceive.

The Colonial Secretary thus sums up: "As the Commissioners' report is favourable to Dr. CLARE in regard to Charges II. to VI., as the Local Government Board have upheld his procedure in the matters which fell under Charge I., and as Charge VII. results only in a decision that his judgment has been at fault, it would seem natural to conclude that there was insufficient justification for so laborious an investigation. So far as Dr. CLARE is personally concerned I must say unhesitatingly that this is the case. He will be able to return to the colony with the assurance that, after the most searching inquiry, nothing has been proved against his personal honour, or against his ability in his profession. This, however, will hardly make up for the heavy strain which the inquiry will have entailed upon him, and in the circumstances I consider that Dr. CLARE is fully entitled to be indemnified for the expenses which he was forced to incur through the appointment of the Commission and the procedure adopted." Mr. HARCOURT expresses the hope, from a wider point of view, that the inquiry will dissipate the mistrust for some time existent in neighbouring communities as to the inadequacy of the practice of the Trinidad administration in ascertaining and notifying cases of infectious disease. Dr. CLARE, therefore, is free to return to his post with his honour vindicated and his personal expenses, to some extent at least, indemnified, but neither can fully compensate him for the mental strain that must have been thrown upon him by this bitter attack. And bitter is the only word to describe it. After perusing again the closing vituperation of the Hon. L. A. WHARTON, who appears to have regarded himself as conducting a prosecution, we see that no such language should have been tolerated in a Commission of Inquiry. As we said previously in this regard, the dispassionate form of investigation, or commission, to which we are accustomed at home, in which the object is simply to get

at the facts of the case, not to secure a forensic victory for one side or another, is much to be preferred. We trust, however, that the complete vindication of Dr. CLARE will result in a general amnesty between the parties recently in conflict.

Annotations.

"Ne quid nimis."

THE NOMENCLATURE OF MALTA FEVER.

WE learn that the Governor of Malta has made representations to the Secretary of State for the Colonies with regard to the use of the term "Malta fever." The Governor points out that the disease in question, which is called "Mediterranean fever" by some authorities and "undulant fever," or "undulating fever," by others, so far from being peculiar to Malta, occurs all over the Mediterranean littoral, being found in Egypt, Cyprus, Greece, Crete, Sicily, Italy, France, Spain, Algeria, Tunis, and Tripoli, as well as in other countries such as India and South and Central Africa, which do not border on the Mediterranean sea. He urges that the name "Malta fever" is inappropriate and likely to operate to the disadvantage of the island by conveying the impression that Malta is the only place where the fever prevails. The Governor's views have been brought by the Secretary of State to the notice of the London and Liverpool Schools of Tropical Medicine and the Academy of Medicine in France, as well as the War Office and the Admiralty, with the result that all these institutions have agreed to abandon the use of the term "Malta fever." This commendable action raises once again the old question of the want of uniformity in the nomenclature of diseases. The Royal College of Physicians of London grappled more or less successfully with this problem some years ago, and their nomenclature was adopted by the Registrar-General upon death certificates; but medical writers and speakers have never really paid much serious attention to these rulings, and many old muddles remain. The task of reform seems almost too hard. Even if a definite uniform plan based on pathology, as in poliomyelitis, or on some leading characteristic, as in infantile palsy, were adopted by all the teaching and examining bodies, and insisted upon to the utmost of their powers, there are many diseases whose old and perhaps stupid names would die very hard. As a matter of fact, Malta or Mediterranean fever stands almost alone in the list of diseases named after places. Texas fever, Delhi boil, and Guinea worm seem to be its main congeners. Roman fever as a term for malaria is not used in medicine, and rickets is not known in this country as "the English disease." We sympathise with the inhabitants of the island of Malta in their protest.

THE SALE OF SECRET REMEDIES.

THE Home Secretary's promise, or rather half-promise, to appoint a Select Committee to consider the conditions of the sale of "patent medicines"[1] will be welcomed by the medical profession and, in all likelihood, by the vast majority of pharmacists. For a long period the methods employed by some manufacturers of secret remedies have been a scandal, and an official inquiry into these methods and into the composition of the medicines cannot but lead to good results. Mr. Churchill's statement will not have taken the manufacturers unawares. They were, in fact, prepared to expect an inquiry at an earlier date, for Lord Gladstone, who preceded Mr. Churchill as Home Secretary, intimated that he considered the appointment of a committee for this purpose desirable. So large are the interests threatened that the proprietors of secret remedies are sure to fight strenuously in their own defence, and it therefore behoves those whose desire it is to check the sale of harmful nostrums to be prepared with an irresistible attack. During the year ending March 31st, 1910, the latest period for which the figures are available, the revenue from medicine stamp duty was £313,114, and during the ten years ending at the same date the revenue derived from this source reached a total of over £3,000,000 sterling, which means that during the decennial period the British public spent between £20,000,000 and £25,000,000 on medicines subject to duty. These figures afford some idea of the vastness of the interests affected by the proposed inquiry. Apart from the individual influence which some manufacturers will be able to exert, it is important to note that, as a class, they are well organised. It is interesting to observe that in the United States of America, where the public is afforded some degree of protection against fraudulent and harmful nostrums, it is intended to strengthen the law relating to the sale of these articles. In a recent special message to Congress President Taft referred to the failure of the Pure Food and Drugs Act to give anything like adequate protection to the public, and strongly recommended Congress to pass a measure of legislation the effect of which would be to overrule recent decisions of the courts by which the intentions of the Act have been frustrated.

[1] THE LANCET, July 1st, 1911, p. 62.

BIOT'S BREATHING.

IN 1876 Camille Biot published an article on Cheyne-Stokes respiration in the *Lyon Médical* showing pneumatographic tracings taken from a boy aged 16 years and suffering from tuberculous meningitis. These differed from Cheyne-Stokes respiration in that, instead of the respirations gradually diminishing and increasing before and after the pause, they became deep and dyspnœic and corresponded to a deep sigh. Two years later, in a further study of the subject, he quoted from a number of authorities, including Trousseau, to show that the characteristic respiration of meningitis, especially of the tuberculous form, is of this type. However, this form of dyspnœa has received little attention from subsequent writers. In the *American Journal of Medical Sciences* for March Professor Lewis A. Conner has published an important paper on Biot's breathing. During the past two years he has made graphic study of pathological types of breathing and encountered seven typical cases of Biot's type of breathing. In six cases the patient was suffering from meningitis. He has found that its characteristics are as follows: 1. Periods of apnœa which vary in length and occur at irregular intervals. 2. Constant irregularity in the rhythm and depth of individual respirations. 3. The frequent occurrence of deep sighs. 4. In spite of the variation of the depth of inspiration the position of the chest at the end of expiration, remained constant. This seemed to be due to the fact that the expiratory act was purely passive, the active muscular expiration, frequently present in various forms of dyspnœa, being absent. In contrast to this the breathing in a case of fatal anuria showed great irregularity in the level of expiration, the ascending (expiratory) limb of the tracing being carried above the mean expiratory level in consequence of active muscular efforts during expiration. Otherwise the breathing corresponded to Biot's type. In six out of the seven cases of Biot's breathing the disease was meningitis, and in the seventh some intracranial complication of suppurative mastoiditis, possibly meningitis. In 24 other cases of meningitis Biot's breathing was never detected. It was thus observed in 20 per cent. of the cases of meningitis. The scanty literature of the

subject shows that Biot's breathing is supposed to occur not only in meningitis, but in other cerebral conditions. It is therefore sometimes described as "cerebral breathing." In three of the present cases the patients were infants under the age of 2 years; in two they were children of the age of 8 years; and in two they were adults. Of the six proved cases of meningitis four were tuberculous, one was due to the streptococcus pyogenes, and one to the diplococcus intracellularis. In a great variety of other diseases studied, including a number of cerebral ones, such as hæmorrhage, thrombosis, syphilis, and various forms of coma, no case of Biot's breathing was found. In four of the cases in which Biot's breathing was present it was observed a few days after the onset of the symptoms. It may therefore be an early and important sign of meningitis. Its occurrence seems to bear no special relation to the state of the pulse (whether rapid, slow, or irregular), or indeed to the presence or absence of any other symptom. It was observed in cases of slight drowsiness as well as of deep coma. Biot's breathing may be further contrasted with Cheyne-Stokes breathing. The dominant feature of the latter is the rhythmic succession of periods of dyspnœa and apnœa. The periods of apnœa are uniform in length and occur at regular intervals. The periods or dyspnœa are composed of the same number of respirations, which regularly wax and wane. The characteristic feature of Biot's breathing, on the other hand, is the absence of any sort of rhythm. The periods of apnœa vary in length and occur at irregular intervals, and there is constant irregularity in both rate and depth of the respirations. Such differences seem to point to a different pathogenesis of the two conditions. In a comprehensive study of Cheyne-Stokes respiration Dr. G. A. Gibson of Edinburgh, accepting the conclusions of Marckwald that periodic breathing can occur only when some of the higher brain centres have ceased to exert their influence on the automatic centre of the medulla, has suggested that Cheyne-Stokes breathing may require the total abolition of such influence, and that the meningitic or cerebral type of breathing may result from the irregular discharge of unequal impulses from the higher centres.

HEALTH ADMINISTRATION IN SOUTH AFRICA.

WE learn that two very well-known and efficient medical officers of health in South Africa have lately been informed by the authorities that they are about to be "retrenched"—in other words, that their services will no longer be needed in the important posts which they now hold. Dr. A. J. Gregory is medical officer of health of Cape Colony and Dr. Pratt Yule is medical officer of health of the Free State, and each is to be "retrenched" as from the end of August. In this connexion it is important to recall that the Public Health Amendment Bill, introduced during the first session of the Union Parliament of South Africa, provided for the establishment of a Chief Union Medical Officer, together with such assistant medical officers as might be necessary. This Bill was not passed, but it is believed that the South African Government has not dropped the idea of creating the post of principal medical officer of health for the Union, although it does not see its way to appoint a Minister of Public Health with a separate department, as was urged upon it by various medical authorities. It seems probable that a chief and an assistant medical officer of health for the Union will soon be appointed, and it was generally anticipated in public health circles that Dr. Gregory and Dr. Pratt Yule respectively would be selected for these two important positions, since their claims are exceptionally strong. There seems to be a firm conviction that no medical officer in South Africa is so well fitted by experience and ability for the chief officership as Dr. Gregory. In these circumstances the news of Dr. Gregory's approaching retirement from his present post on a pension has come as a shock to a large number of medical men and other authorities interested in the national health of the Union, who fear that the Government intends to overlook his undoubted claims. Dr. Gregory's record of past services, contained in the Cape Civil Service List, suggests that it would be a public misfortune for him to be lost to the public health service of that country at the most critical stage in its history.

GOVERNMENTS AND ECONOMIC MEDICINE.

THE banquet and reception given to President Taft by the Medical Club of Philadelphia,[1] at which more than 1000 medical men were present, has a significance reaching far beyond the United States of America. The function and the speeches of which it was the occasion emphasise the increasing recognition, not merely *pro formâ*, but with actual appreciation due to intimate personal knowledge, by the governing powers of the economic and social significance of public hygiene and preventive medicine. The speech of Mr. Taft particularly was replete with an intimate knowledge made possible only by his close association with the medical profession in his public capacities as former Governor-General of the Philippines, Governor of Cuba and Secretary of War, and his personal observation of the effects of sanitation in Porto Rico and in the Canal zone of the Isthmus of Panama. He spoke of the fact that the cleaning up of Havana, while useful in the prevention of other diseases, had little or no effect in preventing yellow fever until Major Walter Reed and his colleagues demonstrated the connexion between that disease and the stegomyia, which fact was promptly applied by Colonel Gorgas, of the Army Medical Corps, with the result that the disease has been practically banished from Havana. In like manner uncinariasis, or tropical anæmia, is in a fair way of banishment from Porto Rico; while in the Philippines cholera has been greatly reduced, small-pox (which had previously flourished there in virulent type) has been practically stamped out, bubonic plague has had its terrors removed, the injurious effects of malaria have been moderated, and even amœbic dysentery is being brought under control. Removal of lepers to the island of Culion has reduced the new cases of leprosy in the Philippines to 16 per cent. of what they were formerly, and beri-beri has been practically stamped out of those islands. Moreover, the study of the dejecta of the native Filipinos has shown that the intestinal flora has been largely responsible for the enfeebled condition of that race, which by proper treatment founded on this knowledge may be greatly strengthened. As to the Canal zone of the Isthmus of Panama, what was formerly a pest-ridden zone has been converted into a pleasant and healthful place to live in. "Colonel Gorgas," said President Taft, "stamped out yellow fever, so that for now more than four years there has not been a case on the Isthmus, and he reduced the malignancy and extent of malaria on the Isthmus to such a point that the percentage of deaths in the foreign population of the zone is considerably less than in our large cities." Another evidence of the vast improvement in sanitation cited by President Taft is the fact that the United States now has a division of 18,000 soldiers in Texas and California living under canvas for two months, "in a country soaked with rain and deep with profanity-provoking mud"; yet the percentage of sick men is less than it was in the posts from which these men were mobilised. During the Spanish-American war, of the volunteer regiments mobilised

[1] President Taft and the Medical Profession, American Medical Association, 1911.

90 per cent. became infected with typhoid fever within eight weeks from the date of mobilisation, yet to-day, in the same period after mobilisation, but with modern health regulations and antityphoid vaccination, only one case of typhoid fever has appeared, and that in the case of a teamster who was not vaccinated. A large part of the research work, though not all, as a result of which these splendid results have been attained, has been done by army medical officers, and President Taft concluded by congratulating the medical profession at large that "they have had the opportunity, and have seized it, to make such progress in relieving the suffering of the human race and in becoming in so conspicuous a way the benefactors of mankind." In these days a movement of real progress rapidly spreads from one nation to another, and if the example set by the Medical Club of Philadelphia in bringing into close touch the administrative authorities of the country with the economic work of its medical profession, military, naval, and civil, should so spread, it will have deserved the thanks of all peoples as well as of the medical profession.

NURSES AND THE WORKMEN'S COMPENSATION ACT.

A MEDICAL man has recently inquired whether a patient employing a private nurse (not attached to any institution and therefore not already insured by an employer) is liable to compensate her if she meets with an accident in the course of her service with him. The question was evidently intended to refer to the ordinary circumstances of nursing a case of temporary illness, where the nurse remains for a short time, perhaps for a few days only, in the patient's employment; and our correspondent also alluded to the obvious inconvenience to the patient of effecting insurance under such conditions, suggesting that the difficulty might be met by the nurse insuring herself "as if she were her own employer." We may point out here that the question of insurance is not one with which the Workmen's Compensation Act, 1906, concerns itself. It provides that employers shall pay compensation upon a prescribed scale to persons employed by them, in the event of such persons meeting with accidents and claiming such compensation, but the employers are left to decide for themselves whether they shall protect themselves against loss by insurance or not. There can be little doubt that a nurse attending a case in a private family in the ordinary circumstances inquired about by our correspondent comes within the definition of "a person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise," and that such exceptions as are provided for do not in ordinary cases, at any rate, apply to nurses. Equally there can be no question that a nurse's calling exposes her to a risk of accident rather more than is the case with many employed persons. Her risk, at any rate, is greater than that of most domestic servants. These latter are, as a rule, insured by their employers, but probably the insurance of the nurse, who in the sudden emergency of illness becomes one of the employed, is rarely thought of. The suggestion that she should insure herself does not, strictly speaking, meet the difficulty. There is nothing to prevent a nurse from insuring herself against accident, illness, or anything else, and the nature of her occupation makes it obvious that this is an exceedingly prudent and proper thing for her to do. It would not, however, protect her employer if she were to do so, even though she were to tell him that she was insured on entering his house and to undertake to bring no claim for compensation against him, because the Act provides that there shall be no "contracting out" of its provisions. Of course, a nurse who undertook to bring no claim and then took legal proceedings to obtain compensation for accidental injury would be acting dishonourably, but that is another matter, and the opportunity for doing so would rarely arise, as the employer who was prudent enough to take into consideration the question of possible accidents when engaging a nurse would hardly be so foolish as to be a party to a contract which everyone knows to be legally void. To refer again to the question of our correspondent, which he confines to the case of a nurse "not attached to an institution," we do not limit our view of the patient's liability to nurses who, so to speak, earn their living as "free-lances." Nurses may sometimes go out to attend cases under such conditions that the institution employing them is, and remains, liable to compensate them for accidents. There must, however, be a large proportion of instances in which the nurse may acknowledge the authority of an institution which to some extent controls her conduct and is responsible for her welfare, but in which she is in fact temporarily in the service of a patient who, while engaging her through the institution, becomes her employer quite sufficiently to give her the right to claim against him. In the circumstances we venture the opinion that a thoroughly prudent patient would insure his nurse and that an obliging medical adviser might earn his gratitude by recommending him to do so. We are not aware of any special policies issued for such occasions by insurance companies, but they may exist, and in any case could easily be devised to meet exigencies which so frequently arise. The amount that they would add to the ordinary expenses of medical and nursing attendance in illness would be comparatively small, and they would provide against contingencies which when they occur may be of a serious character.

THE NECROPSY OF NAPOLEON I.

SEVERAL of our correspondents have alluded recently to the pathological conditions which may or may not have largely influenced some of the dramatic events of the career of that superlatively great man, Napoleon. Some, if little, light is thrown on the subject of Napoleon's health by the description of his necropsy in the well-known work of Dr. Arnott, "An Account of the Last Illness, Decease, and Post-mortem Appearances of Napoleon Bonaparte, to which is added a letter to Lieutenant-General Sir Hudson Lowe, K.C.B., etc., giving a Succinct Statement of Napoleon Bonaparte's Disease and Demise" (published by John Murray in 1822). Archibald Arnott, who was an M.D., states in the preface to his little book, that "*no* other English medical person saw him in his death-bed sickness." The ex-Emperor, indeed, would only receive the professional visits of Professor Antomarchi and of Arnott, and he went so far, we are told by the latter, as to extract a promise from his "family," or *entourage*, that if at any time he became insensible no other medical man should be called in. Arnott confesses that his notes had always been written in haste, "not with the most distant view of their ever meeting the eye of the public." Nevertheless, these hasty private notes, which, reprinted, only fill two columns in a small gazette,[1] are now a chief authority on the post-mortem appearances of one of the greatest figures of the last century. We reprint the "Report of Appearances on the Dissection of the Body of Napoleon Bonaparte" and leave our readers to draw what conclusions they may therefrom. "On a superficial view the body appeared very fat, which state was confirmed by the first incision down its centre, where the fat was upwards of one inch thick over the sternum, and one inch and a half over the abdomen. On cutting through the cartilages of the ribs, and exposing the

[1] Reprinted in John Bull, Oct. 13th, 1822.

cavity of the thorax, a trifling adhesion of the left pleura to the pleura costalis was found; about three ounces of reddish fluid were contained in the left cavity and nearly eight ounces in the right. The lungs were quite sound. The pericardium was natural, and contained about an ounce of fluid. The heart was of the natural size, but thickly covered with fat; the auricles and ventricles exhibited nothing extraordinary, except that the muscular parts appeared rather paler than natural. Upon opening the abdomen the omentum was found remarkably fat; and on opening the stomach that viscus was found the seat of extensive disease; strong adhesions connected the whole superior surface, particularly about the pyloric extremity, to the concave surface of the left lobe of the liver, and on separating these an ulcer, which penetrated the coats of the stomach, was discovered one inch from the pylorus, sufficient to allow the passage of the little finger. The internal surface of the stomach, to nearly its whole extent, was a mass of cancerous disease, or scirrhous portions, advancing to cancer; this was particularly noticed near the pylorus. The cardiac extremity, for a small space near the termination of the œsophagus, was the only part appearing in a healthy state. The stomach was found nearly filled with a large quantity of fluid, resembling coffee grounds. The convex surface of the left lobe of the liver adhered to the diaphragm, but with the exception of the adhesions occasioned by the disease in the stomach no unhealthy appearance presented itself in the liver. The remainder of the abdominal viscera were in a healthy state. A slight peculiarity in the formation of the left kidney was observed." Commenting on this report, of which Arnott was one of the signatories, he expresses surprise "that a person of Napoleon Bonaparte's habits should have been affected with schirrus and cancer of the stomach; a man who was noted for temperance, and never in his life indulged in any excess which could tend to produce such an affection." "It is somewhat remarkable," however, "that he [the Emperor] often said that his father died of scirrhus of the pylorus." His son, of course, died from phthisis at an early age. It is to be noted that no examination of Napoleon's brain is recorded by Arnott.

THE SARDINE.

DIETETIC authorities may well praise the sardine, since, for one thing, it encourages the ingestion of oil, which for a reason difficult to find is very commonly excluded from the diet nowadays. A bland fat affords such an excellent physiological balance to nitrogenous foods that its reasonable use will help us to avoid many ills, and especially those associated with wasting diseases and gouty dispositions. It prevents the overloading of the tissues with nitrogenous waste products and a digestible fat favours nutrition considerably. The sardine supplies also an excellent proportion (25 per cent.) of nitrogenous material, and so it becomes a real and economical food. In addition to this serves digestion follows. Luckily, its preservation in the cooked state in oil precludes contamination, even although it is brought to our shores in the tin. We have examined a great number of samples of tinned sardines, but not once have we been able to find the slightest evidence of metallic contamination or of objectionable preservatives. The tins consist of no worse metals than iron and tin, both of which may be regarded as practically outside the pale of poisonous metals. Oil is, besides, an effective guard against these metals being attacked. Physiologically it counts for very little if the sardine proves to be not a "scientific" sardine and the oil is not the oil of the olive. We have a suspicion that a preference would be exhibited for the genuine sardines and *l'huile d'olive*, but the fishes substituted for the real Sardinia pilchards are, generally speaking, still of the herring family, and the cheaper oil used is wholesome, consisting often of pea-nut oil or sesame or cotton-seed oil, which contain to a large extent the same fatty principles as olive oil. This view must not be regarded for a moment as favouring the practice of substitution in general, while obviously in this case the consumer is not injured nor is he seriously cheated. Neither what we know to be a herring or sprat is a true sardine, and cotton-seed oil is certainly not *l'huile d'olive*. Strict ethical teaching, however, would require some declaration as to the exact nature of the goods. But if that demand were enforced there would soon arise an unnecessary prejudice against the substitutes, which after all are very closely related to the genuine articles, and which are equally palatable and nutritious. If the real sardine were as abundant as its congeners the position might be different. As it is we may be grateful for a plentiful and cheap supply of this appetising morsel, whether sardine, sprat, or herring.

ACUTE ANTERIOR POLIOMYELITIS IN THE DISTRICT OF COLUMBIA.

THE occurrence of an epidemic of infantile paralysis in the District of Columbia during the summer of 1910 led to the appointment of a committee by the President of the Medical Association of the District of Columbia to investigate the incidence and general characters of the disease. This committee has recently issued an interesting report (reprinted from *Washington Medical Annals*, Vol. X., No. 2, May, 1911) of which we have received a copy. Information was received in regard to 506 cases, which are believed to include approximately all those occurring in the District during 1910. Among these there were 16 deaths. Reports were obtained of 246 cases, but in only 150 of these was the date of onset noted. The outbreak began in June and reached its maximum in July and August. There was nothing extraordinary about the temperature during the epidemic, but the rainfall was much less than normal, the summer being an exceptionally dry one. In regard to age, the youngest patient was 4 months old, the oldest 64 years. Of the 246 cases, of which records were obtainable, 217 or 88 per cent. were under 10 years of age. In six instances there occurred two cases in the same family. Seventeen cases gave histories of exposure to acute cases of poliomyelitis, and one gave a history of exposure to a recovered case. In one locality prior to the appearance of anterior poliomyelitis in human beings there occurred an outbreak of a disease associated with paralytic symptoms among ducks and chickens, and a man who performed post-mortem examinations on two ducks with this disease shortly afterwards developed poliomyelitis. Careful laboratory investigations, however, failed to show any relation between the two conditions. The report includes a note of the pathological examination of a fatal case by Dr. Gonzalo R. Lafora. He found slight dilatation of the vessels and thickening of the pia mater. The grey matter appeared reddish with small hæmorrhages. Histologically, infiltration of the vessels with lymphocytes and plasma cells, and the disappearance of ganglion cells in certain parts of the cord, or their degeneration in the anterior horns, as described by previous observers, were confirmed in this case by Dr. Lafora. The occurrence of a large number of "Körnchen" (granular) cells filling the grey matter and surrounding the few remaining ganglion cells was also a striking feature. Plasma cells were also found outside the adventitial spaces of the vessels, and many of them showed karyokinetic processes or possessed two or more nuclei. Most of the macrophages, which sometimes filled the entire anterior horn, were of the mononuclear variety. Certain rod-like cells (Stäbchenzellen) of neuroglial origin were

found, but mast cells, though seen, were very few. Some very small diplococci were seen among the cells infiltrating the grey matter, and also certain formations, without nuclei, which morphologically reminded Dr. Lafora of the encapsulated Leishman-Donovan bodies in kala-azar. Hypertrophic processes occurred in the nucleoli of the ganglion cells. In many of these cells very marked neuronophagy was observed, and in others the Altmann granules were greatly increased in number. The results of the examination of the cerebro-spinal fluid in 11 cases are recorded by Dr. William H. Hough and Dr. Lafora. They examined the fluid chemically and studied the cells by many different methods of staining, since they found that important details were brought out by one method which were not shown by others. They found that the cerebro-spinal fluid was generally clear, that in the early stages of the disease there was usually an increase of pressure, though this was not as a rule pronounced, and that there was an increase in the protein content sufficient to give a positive Nonne-Alpelt and Noguchi butyric-acid reaction. In the earlier stages of the disease there was an increase in the leucocytes, especially the polymorphonuclears. These cells diminished after a few days, and a lymphocytosis with some plasma cells and sometimes a few mast cells replaced the polymorphonuclear increase. The disappearance of the polymorphonuclears was brought about through the phagocytic activity of the macrophages. Körnchen cells, altered lymphocytes, and other mononuclear elements were commonly present in the fluid until after the febrile period. Dr. Hough and Dr. Lafora suggest that the similarity of these characters to those of the fluid in some protozoan diseases is an argument in favour of the protozoan nature of the virus, even though other observers claim that the disease is produced by a much smaller organism. This report affords some interesting information concerning some of the features of this serious disease, and is a useful contribution to the study of its special characters in the epidemic form.

SUPRAPUBIC PROSTATECTOMY IN A PATIENT WITH AN OLD SUPRAPUBIC FISTULA.

IN the *Annales des Maladies des Organes Génito-Urinaires* for May a case of much interest is described by Dr. M. Patel and Dr. G. Cotte of Lyons. The patient was a man, 67 years old, and nine years previously a suprapubic cystostomy had been performed for retention caused by prostatic hypertrophy. The immediate results of that operation had been very good, and when the opening had contracted a little micturition had become very regular. The patient passed urine about every four hours, and he did not suffer from either retention or incontinence. No urine was voided by the urethra. Slowly a ventral hernia had developed immediately above the urinary fistula, and at last it had grown to such a size as to interfere seriously with his work, and he asked to be relieved of the hernia. On examination by the rectum a very large prostate was felt, but a catheter could not be introduced by the urethra. A large ventral hernia above and in front of the pubis was present, and the urinary fistula opened about the middle of the swelling, but, so far as could be ascertained, the bladder formed no part of the hernia. As the hernia interfered so greatly with the patient's work, and as the fistula prevented the use of a truss, it was resolved to operate. It appeared to be essential to a satisfactory result that the urinary fistula should be closed, and that urethral micturition should be re-established. It was found to be impossible to reach the bladder without opening the peritoneum; therefore, a large skin incision having been made, the hernial sac was removed and the peritoneum was sutured. With very great difficulty the fistula, which measured 10 to 12 centimetres in length, was followed down to the bladder, which was contracted and lay deep in the pelvis. The bladder was incised, and the prostate was shelled out. A fortnight later urine began to pass by the urethra, and six weeks later the suprapubic fistula was completely closed. Except for slight contraction at the site of the prostatic urethra, which yielded to dilatation, the result was perfect. A little hernial protrusion still existed at the upper part of the scar, but as the fistula was closed a belt could be worn. The great functional value of the suprapubic fistula in this case was probably due to its length and obliquity, and the successful result of the final operation was in great measure due to the fact that no urinary sepsis was present.

LEGISLATION WITH REGARD TO ANÆSTHETICS.

THE question of legislation in regard to anæsthetics has now been prominent for four years. It has been the subject of a Home Office Departmental Committee inquiry and has been thoroughly discussed by (1) the General Medical Council; (2) the Royal College of Surgeons of England; (3) the British Medical Association; (4) the British Dental Association; (5) the Medico-Legal Society; (6) the British Association for the Advancement of Science; and (7) the Anæsthetics Section of the Royal Society of Medicine. All these bodies have reported in favour of legislation, and a draft Bill to protect the public has received the support of the General Medical Council, and is now at the Home Office. We trust that we may be able to report immediately some action upon all this preparation. Not only the medical profession, but a considerable section of the public, have been expecting the Home Secretary to introduce legislation on the lines suggested in the Bill, and the disappointment that this has not been done has been very real. As pointed out in a recent article in our columns, further necessary reforms in anæsthetics are blocked by reason of this delay in legislation. Is it not possible that the Home Office should make an effort to introduce a Bill this session? We are not without knowledge of the stress of affairs at this moment, but the action would be very welcome. If this is impossible, we hope that the beginning of the next session we may see the measure brought forward. Being a question which has been threshed out in so thorough a manner that upon all its essentials there is, practically speaking, unanimity, it is difficult to see why there should be further delay in providing the public with the protection desired.

NEW VIEWS AS TO THE BACTERIOLOGY AND TREATMENT OF LEPROSY.

IN a supplement published with the *Indian Medical Gazette* for May is an interesting article by Captain T. S. Beauchamp Williams, I.M.S., the results of whose researches, if they are confirmed, will modify our view of leprosy. From cases of leprosy he has grown four different types of organisms which he believes are merely four phases of a pleomorphic streptothrix. The first of these phases described in Captain Williams's paper was a Gram-positive streptothrix, not retaining carbol-fuchsin under treatment with acid. It was grown directly from several patients, both in Persia and in Bombay, and also by sub-culture of the second type of organism, a diphtheroid bacillus, which, like the streptothrix, is not acid-fast. Captain Williams believes that the bacillary form is really the result of very rapid division of the streptothrix, favoured by certain cultural conditions. Both of these forms are convertible by suitable methods of sub-culture into acid-fast micro-organisms in which a streptothrix form and a bacillary form can be observed. One interesting method which was employed was the symbiotic culture of the diphtheroid bacillus with pure

growths of amœbæ; the amœbæ ingested the bacilli and thereby rendered them acid-fast. It seems, further, that the acid-fast streptothrix form can be converted into a non-acid-fast bacillus by change in the cultural environment. Captain Williams therefore claims that these four types, the acid-fast and the non-acid-fast streptothrix, may be regarded as four different phases of the same micro-organism. His animal experiments, which are not described in detail, afford reason for the belief that inoculation of the acid-fast forms into guinea-pigs can produce nodular lesions at the site of injection as well as in the lymph glands and omentum. The most interesting section of Captain Williams's paper is that which described the results of inoculating leprous patients with a vaccine prepared from both cultures of the acid-fast streptothrix. Without exception the injection was followed by very distinct local and systemic reaction, which was entirely absent after similar inoculations of healthy persons. In some cases, indeed, the local reaction was so pronounced as to be alarming. Treatment of 15 cases was instituted, and the results are so far encouraging that Captain Williams considers it capable of immunising patients against a further spread of the disease, and hopes that it may be possible to effect a cure in early cases by this means. The article is well illustrated by coloured drawings of the various forms of micro-organisms, and the writer has made it clear throughout that his results are not in conflict with those of other recent investigators.

TREATMENT OF SCARLET FEVER AND DIPHTHERIA AT LEICESTER.

THE annual report of the medical officer of health of Leicester (Dr. C. Killick Millard) contains the statement that during the year experiments were made with eucalyptus oil as recommended by Dr. Robert Milne. The details of the treatment as prescribed by Dr. Milne were faithfully adhered to in every particular and no change was made until 100 patients had passed under the treatment. The conclusions Dr. Millard arrives at are that the extent of infectivity was not shortened to anything like the extent claimed by Dr. Milne; indeed, he is not yet satisfied that it has any very appreciable effect in this respect. Nor could he satisfy himself that complications and sequelæ were appreciably diminished, and there was some reason to believe, he thinks, that the number of albuminuria cases were increased. In regard to diphtheria, Dr. Millard says that Leicester has taken a decided stand in the treatment of this disease in hospital entirely without alcohol. It used to be taught that in this disease, owing to the tendency to heart failure, the use of alcohol in large doses was frequently imperative, and that it was orthodox practice to use it. The discovery, however, that the heart failure in diphtheria was due to nerve degeneration, caused by the diphtheria toxin, rendered it improbable that alcohol would be of any real benefit, while the researches of Sims Woodhead, which showed that in horses alcohol definitely interfered with the acquirement of immunity, which is Nature's method of effecting a cure in the case of all zymotic diseases, made it reasonable to regard alcohol as actually contra-indicated. Added to this there is the undoubted fact that alcohol is a drug in which there is a serious danger of a drug habit being established. For these reasons the use of alcohol in the treatment of diphtheria has been entirely discontinued in the Leicester isolation hospital, and was not employed during 1910. Although scarcely more than half the cases of diphtheria notified in the district were removed to hospital this proportion included most of the serious cases, especially those requiring operation. Antitoxin was used in practically all cases. There were 114 cases of diphtheria in Leicester during the year and 11 deaths, and while not suggesting that Leicester's pre-eminently satisfactory position as regards diphtheria mortality is the result of the fact that alcohol was not used, Dr. Millard says it is certainly satisfactory to find that having boldly departed from the orthodox line of treatment the deaths from diphtheria are so few in number. The ordinary death-rate for Leicester is 12·4, and the zymotic death-rate 0·69, both being the lowest on record.

EXTRAPERITONEAL COMPRESSION OF THE COMMON ILIAC ARTERY FOR THE PREVENTION OF HÆMORRHAGE IN DISARTICULATION OF THE HIP.

ONE of the main causes of the heavy mortality after amputation at the hip-joint has always been the great loss of blood which is liable to occur in this operation, and many methods have been devised from time to time to prevent this serious hæmorrhage. One of the most striking of these methods was that brought forward by McBurney in 1894. This consists in digital compression of the common iliac vessels through a small incision made through the abdominal wall. Dr. R. Martin Gil of Malaga has devised a modification of this, which he considers to be an improvement on the original method. He considers that it is undesirable to run the risk of peritonitis through opening the abdominal cavity, and therefore he advocates an extraperitoneal compression of the common iliac vessels. A curved incision is made from 6 to 8 cm. in length, with its concavity forwards passing from a point 2 or 3 cm. from the middle of the iliac crest to the tip of the last rib. When the muscles have been divided the peritoneum is stripped up and it is possible to feel the common iliac artery, and it may be readily compressed. The method deserves a trial, but it does not appear to us that it is materially less dangerous than the original McBurney method.

ONSET OF TYPHOID FEVER BY MENINGEAL SYMPTOMS.

AT a recent meeting of the Société Médicale des Hôpitaux of Paris Professor F. J. Collet and Dr. C. Lesieur of Lyons reported a case of a very rare form of typhoid fever in which the onset was sudden by meningeal symptoms, suggesting cerebro-spinal meningitis. A nurse, aged 29 years, was admitted into hospital on Sept. 30th, 1910. She suddenly became ill on Sept. 27th, with pains in the head, neck, spine, and abdomen, rigidity of the neck, and loss of strength, so that she could not work. She was constipated; the bowels did not act from Sept. 25th to 30th. For three days before admission she had no appetite, could not take any food, and had several attacks of bilious vomiting. On the 29th the evening temperature was 103·2° F. On admission she complained only of pains in the head so severe as to prevent her from sleeping. The face was a little grimacing, especially when she spoke, and the eyes were slightly congested. Movements of the head were impeded by rigidity of the neck, and pressure on the spines of the cervical and dorsal vertebræ was a little painful. The spleen was not felt. The pulse was 100 and good, and the temperature in the morning was 103·1° and in the evening 103·4°. Vomiting occurred again. On drawing the finger over the abdomen marked dermographia, lasting several minutes, was produced. On Oct. 3rd there was incontinence of urine, and vomiting occurred without nausea; the pulse was 120, and the evening temperature 104·2°. Kernig's sign was present in slight degree. Lumbar puncture yielded fluid of normal appearance which on centrifugalisation showed only a few mononuclear leucocytes. On Oct. 4th the pain in the head was much

less and there was no longer any stiffness of the neck. On Oct. 5th there were slight meteorism and two or three rose spots on the abdominal wall, gurgling was produced by pressure on the right iliac region, and the spleen was palpable. The Widal and diazo reactions were positive. On the 6th the meningeal symptoms had entirely disappeared. After this the disease ran the ordinary course of typhoid fever and the patient was discharged cured on Nov. 21st. Thus during the first week the symptoms were markedly those of cerebro-spinal meningitis, but the want of correspondence between the pulse and temperature should have raised suspicion of the true nature of the affection. The negative result of lumbar puncture with the other symptoms established the diagnosis.

Professor Paul Uhlenhuth, M.D., director of bacteriology in the Imperial Health Institute, Berlin, will deliver the Harben Lectures for 1911, before the Royal Institute of Public Health, on Monday, Tuesday, and Wednesday, July 17th, 18th, and 19th, at 6 P.M., in the lecture room of the Institute, 37, Russell-square, London, W.C. Lecture I. will deal with Experimental Studies on Syphilis; Lecture II. with the Biological Differentiation of Proteids by the Precipitin Reaction, with Especial Reference to the Forensic Examination of Blood and Meat; and Lecture III. with Experimental Investigations on Hog Cholera. All interested are invited to attend.

IN spite of very grave difficulties a British Section has been equipped at the International Hygiene Exhibition at Dresden, and was formally opened on June 29th. The British committee is to be congratulated on the success which has attended its persistent efforts to secure proper representation of this country at this important Exhibition.

A SCHOOL OUTBREAK OF ENTERIC FEVER.

BY R. W. C. PIERCE, M.D., B.SC. LOND.,
MEDICAL OFFICER OF HEALTH OF WOKING, ETC.

THE following outbreak is interesting and somewhat uncommon, as the spread of the infection was apparently due, not to contamination of any article of food, but to the presence of an ambulatory or possibly a carrier case at school.

Briefly the history is as follows. The head teacher of a small infants' school had to relinquish work on Feb. 17th, 1911, and was subsequently medically attended at home during some weeks for bronchial catarrh. The school was closed from Feb. 20th. The assistant teacher, who takes the second class—both classes being in the same room—became ill on Feb. 20th and was admitted to the isolation hospital with well-marked signs of enteric fever on March 2nd. Within the next three days five other cases were admitted, three of them with attacks dating from between Feb. 18th and 20th, and the two others with attacks commencing about Feb. 26th. Three of the six cases had relapses after admission. Some of the particulars are tabulated below.

—	Sex and age.	Class attended	Date of onset.	Temperature became normal.	Duration of relapse.
E.W.	F., 23 (teacher).	Class 2.	Feb. 18th–19th	33rd day.	35th to 49th day.
S.L.	M., 7.	,, 1	Feb. 20th.	21st ,,	24th ,, 37th ,,
W.H.	M., 7.	,, 1.	,, ,,	,, ,,	—
F.S.	F., 33.	Mother of child in Class 1.	,, 19th.	27th ,,	—
W.E.	M., 4.	None.	Feb. 25th–26th.	17th ,,	21st to 32nd day.
E.D.	F., 6.	Class 2.	? Feb. 26th.	18th ,,	—

Characteristic spots were present in each case in the primary attacks and second crops in those who had a relapse. Complete clumping of typhoid bacilli was given by the serum in each case in a dilution of 1 in 50 within half an hour.

It will be seen that three of the cases were connected with Class 1 of the infants' school. The infection of W. E, who did not attend school, and also of E. D.—they being next-door neighbours—is probably to be accounted for by contact with K. D., a sister of E. D., K. D. attending Class 1. The last-named child was absent from school on Feb. 10th, 13th, 15th, and 16th, with headache and giddiness. A specimen of her blood tested for Widal's reaction on March 8th gave fairly complete clumping in half an hour in a dilution of 1 in 50. This child, who had probably suffered from a mild attack of enteric, proved to be the earliest suspicious case that could be traced in connexion with the outbreak, except for three cases of jaundice, which is sometimes associated with enteric fever, amongst the school children.

The school department in question was held in a part of another infants' school owing to their own school premises undergoing reconstruction, and the children were conveyed to and from the temporary school in two vans, respecting the overcrowding of which many complaints were made. As two of the children never rode in these vans, they may be excluded as having no connexion with the outbreak. The school drinking supply, cloak-rooms, lavatories, and closets were also utilised by the children of the other infants' department, who were located in the same building, but these were free from suspicion of having caused the outbreak, because none of the children attending this department were affected. As there was nothing in common between the cases in the matter of food-supply or proximity of dwellings (except the two cases, W. E. and E. D.) the probable sources of infection became narrowed down to the class-room.

Attention was then paid to the articles used in common by the children, such as modelling clay, sticks and cubes, pencils, paint brushes, chalk, felt rubbers, &c. It was found that an object-lesson was given on Feb. 8th and again on the 10th with a lemon and an orange which were cut up and distributed among the children, and that a batch of modelling clay was distributed to Class 1 on Feb. 10th, the assistant teacher taking part on all three occasions. The modelling clay, which was kept in a closed tin, was specially suspected owing to the constant manipulation involved in its use and was taken away for examination on March 6th. Washings from the clay rolls were planted in broth and taurocholate broth and plates made on gelatin, agar, and Drigalski medium from the resulting 24 hours' growth. The plain broth cultures gave a mixed growth in which motile organisms resembling in their appearance and movement those of the typhoid bacillus were present, but with the facilities at hand it was not found possible to isolate them. As an interval of three weeks had already elapsed since the infection had taken place the typhoid bacilli even if present at first may not have survived, although the organic matter on the clay and the exclusion of light and air would tend to make this possible.

It seems probable that the infection was introduced into the class-room by one of the children, either by soiling of the floor (and consequently of the dust of the room) by infected excreta, directly or through wetting of the boots in infected urine, or more probably by the contamination of some article such as the plastic clay, by a child suffering from a mild attack of typhoid fever, who resumed the school work with unwashed hands after visiting the water-closet. The latter supposition appears to be the more feasible, as gross contamination of the hands must have taken place if the infection of the mother of one of the children is to be connected with the school. The possibility that the last-mentioned child was a typhoid carrier was considered, but there had been no history of illness, and a specimen of the urine examined in March failed to show any typhoid bacilli. The child's father had an attack of enteric fever 17 years previously, and the father of E. D. had an attack during the South African War.

The class-room was re-opened on March 13th after thorough disinfection and destruction of all inexpensive articles, and no further cases have since been reported either from that school or from the two infected classes who resumed the tenancy of their own school on March 20th. The precaution was taken on reassembling of insisting on each child washing its hands after using the water-closet before

re-entering the class-room. It would, of course, have been more satisfactory to have found the exact source of the outbreak, but in view of the fact that it had evidently ceased to act as such the search was not prosecuted further.

THE NATIONAL INSURANCE BILL.

GENERAL and acute interest continues to be taken in the National Insurance Bill. As is set out in another column, the London County Council is viewing seriously the situation that may be created by interposing Local Health Committees between the Council and the central authority for public health, a matter which has already been brought to the notice of the Chancellor by the Association of Municipal Corporations. From Ireland and Scotland we chronicle additional evidence of the general feeling aroused by the absence from the Bill of any wage limit for medical beneficiaries, a point upon which, however, the Chancellor appears to be inflexible.

HOSPITAL REPRESENTATIVES AND THE BILL.

On Tuesday, June 27th, Sir William Cobbett presided at a meeting of representatives of the voluntary hospitals of Lancashire and Cheshire, held in the Manchester Town-hall. The meeting was called as a sequel to meetings of Hospital Representatives held in London in June at St. George's Hospital and St. Thomas's Hospital, and resulted in the adoption unanimously of a memorial shortly to be presented to the Chancellor of the Exchequer on behalf of the voluntary hospitals of Great Britain and Ireland. The memorial sets out that the voluntary hospitals must supply as heretofore accommodation for persons who will now be insured under the Bill, and who are suffering from serious conditions or require operative treatment; that their funds are derived from public subscriptions, and that they are the centres of medical education and research; that the Bill contains no provision to increase their resources, while in its present state it will reduce their subscriptions; and that the benefits to be conferred by the Bill should be extended to cover treatment in hospitals, which should be able to recoup themselves for expenses incurred in the treatment of insured persons.

THE DISPENSARIES AND THE BILL.

A CONFERENCE of representatives of dispensaries in London and the provinces was held on June 28th. Letters were read from dispensaries in many parts of the country. The feeling was unanimous that the National Insurance Bill as it stood would be most prejudicial to dispensaries whether they were provident or free, and in many cases would practically destroy them. It was pointed out that in some towns as many as a third or more of the population were members of provident dispensaries. A committee was appointed to communicate with dispensaries throughout the country with a view to their concerting measures for submitting their case to the Chancellor of the Exchequer. The following resolution was passed unanimously:—

That in the interest of many hundred thousands of the working classes who receive medical aid from dispensaries all over the country it is most desirable that these institutions, many of which have existed for very many years and are approved by the medical profession, should be utilised for the administration of medical benefits under a national insurance scheme.

THE CHARITY ORGANISATION SOCIETY AND THE BILL.

The following resolution has been adopted by the Council of the London Charity Organisation Society:—

That in view of the extremely complicated nature of the National Insurance Bill, the immense importance of the interests involved in it, and the fact that it seeks to introduce principles and methods entirely novel in the administration of this country, the results of which it is not easy to forecast, but which may in the gravest manner affect the well-being, character, and independence of the wage-earning classes, it is, in the opinion of the council of the Charity Organisation Society, indispensable that the measure should not be pressed forward until such ample time has been given to inquiry and discussion as cannot possibly be secured in the present session of Parliament.

THE TRADE UNIONS AND THE MEDICAL POSITION UNDER THE BILL.

The following resolution, having reference to the National Insurance Scheme, has been forwarded to the Prime Minister and the Chancellor of the Exchequer by the Management Committee of the General Federation of Trade Unions:—

This Management Committee of the General Federation of Trade Unions views with regret the attempts of the medical profession to exploit the National Insurance Scheme, and it is of opinion that the terms for medical treatment as offered by the Bill and explained by the Chancellor of the Exchequer are generous in comparison with those which medical men have been quite ready to accept in the past. The Management Committee is also of opinion that the proposed contributions from workmen, employers, and the State will be quite inadequate to meet the expenditure of friendly benefits if the demands of the Medical Council are acceded to.

What is the Medical Council to which the General Federation of Trade Unions makes reference?

THE IMPERIAL MEDICAL REFORM UNION AND THE BILL.

The following appeal from the central committee of the Imperial Medical Reform Union has been sent to all Members of the House of Commons:—

GENTLEMEN,—In view of the serious injury to medical men in general practice that must inevitably result from the National Insurance Bill in its present form, should it become law, we venture most earnestly to appeal to you in justice to a profession which has done so much for humanity to propose and support such amendments to the Bill during its passage through the committee stage as will render it more acceptable to medical practitioners generally. Whilst agreeing in the main with the amendments suggested by the General Medical Council and the British Medical Association, we are convinced that they do not go sufficiently far to safeguard the interests of the profession.

Firstly: The wage limit for "employed contributors" has been placed much too high, and we are of opinion from our experience of the working classes that no person whose *income from all sources exceeds thirty shillings a week* should be entitled to claim "medical benefit [Sec. 8 (a)].

Secondly: We suggest that medical officers under the scheme should be paid for actual services rendered and not by capitation allowance. This method of payment has been carried out for many years past by the National Deposit Friendly Society with satisfaction to the members and to the doctors. During the year 1910 this society paid in fees to doctors the sum of £35,251 6*s.* 9*d.*, an average of 3*s.* 2½*d.* for each member of the society. Provision should also be made for payment for operations, long distance visits, and other extra services.

Thirdly: In the interests of the patient as well as of the doctor we urge that the latter should be entitled to supply the necessary medicines.

Fourthly: We submit that doctors should not be expected to attend under the Act patients suffering from venereal diseases or illnesses, such as delirium tremens, directly arising from the excessive use of alcohol, or due to other acts of misconduct.

In conclusion we respectfully submit that if the above suggestions are embodied in the Bill the measure will be decidedly more satisfactory to the public and the whole profession. As this is not a party question and as our suggested amendments in no way infringe any vital principle of the Bill we confidently trust to receive an assurance that you will give them your support.—We are, Gentlemen, yours faithfully,

ROBERT BELL, Chairman.
GEORGE BROWN, JNO. POLLOCK SIMPSON } Hon. Secretaries.

Imperial Medical Reform Union, 17 and 18, Basinghall-street, London, E.C., June 29th, 1911.

THE NATIONAL INSURANCE BILL IN RELATION TO PUBLIC HEALTH ADMINISTRATION IN LONDON.

Report of Parliamentary Committee.

THE London County Council on July 4th received a report from its Parliamentary Committee on behalf of the various committees affected, with regard to the provisions of the National Insurance Bill from a local government point of view.

The report criticised the interposition of an independent authority, such as the proposed Local Health Committee, between the Council and the central authority for public health. The Public Health Committee in particular considered that it was inadvisable to set up a new authority having public health powers in the County of London, and that the duties of the new committee should be performed by the Council, representation being given to approved societies and deposit contributors. The Parliamentary Committee, however, could not support this suggestion, noting the Chancellor's statement to the deputation from the Association of Municipal Corporations that it would be "impossible." Criticising the composition of the Local Health Committees, the report stated that the representation proposed to be given to the Council, consisting of less than one-third, would place upon the Council some responsibility for the committee's administration, though it would be insufficient to give the Council an effective voice. While the representation of the Council on the Local Health Committee might be adequate as regards the administration of the Post Office fund, it was clearly inadequate for the

purpose of the duties in connexion with medical and sanatorium benefits and other public health duties with which the Local Health Committee would be charged. The position of this proposed independent county authority in the scheme of local government was anomalous. It would have powers and duties which either properly belonged to local government authorities or could be conveniently and efficiently performed by them. Its funds, so far as it could have any funds other than those derived from the Insurance Fund, must be obtained from the county ratepayers, whose representatives would be in a minority on the Local Health Committee. The Local Health Committee would depend to some extent upon contributions made by the bodies whose actions in matters of public health it would criticise and stimulate. On these grounds the new committee appeared to be an unsuitable body for the purpose it was intended to serve; the setting up of such an authority would cause overlapping of jurisdiction and duplication of administrative machinery; and if any additional public health powers of the kind in question were required in London they should be entrusted to the County Council. With regard to the provision of sanatoriums, the report observed that the matter was apparently left by the Bill optional to the Council, but it might be anticipated that public opinion would virtually compel the exercise of the powers. The provision in the Bill for the recovery of expenses from a local authority in default added a new complication to an already complicated system of local taxation. The clause stating that the medical officer of health of the county, at the request of the Local Health Committee, might attend meetings of the committee might lead to difficulties of administration.

The Bill in Relation to School Medical Work.

The Council's work in relation to the medical treatment of school children could not but be profoundly though indirectly affected by the Bill, which would entirely revolutionise the conditions of medical treatment and relief existing amongst the whole of the elementary school population. The wage-earning classes would be brought universally into relation with medical practitioners, and the present haphazard methods would be superseded by a definite organisation. The hospital system must be affected. Voluntary funds dependent on workers and employers, like the Hospital Saturday Fund, might disappear. The need of charitable relief for the working population, which was the *raison d'être* of the hospitals at present, would no longer exist. The hospital out-patient departments, so far as adults are concerned, will largely disappear, just as in-patient institutions and hospitals must come eventually under the supervision or control of the Local Health Committees. Under these conditions, on the one hand the out-patient departments would be freed to undertake the work of medical relief of school children; and, on the other hand very serious objections to subsidising charitable institutions which were under no official supervision or control would vanish. The disappearing (voluntary) funds would practically throw much of such hospital provision open to new arrangements and make support from public funds necessary. Under the Bill Local Health Committees were to have considerable powers of subsidising institutions for medical treatment, and under Clause 47 the erection of such institutions by local authorities was foreshadowed. For many purposes clinics must be established locally to deal with special branches of medical relief. As such fundamental changes would take place inevitably under the Bill in the organisation of medical relief amongst the working classes, the Council's position in regard to the treatment of school children could not fail to be seriously affected. To secure unity, economy, and efficiency, it would almost be necessary eventually for the Council to link up its organisation with that of the Local Health Committees, and conjointly with them to arrange for the establishment or subsidy of institutions for medical relief, the Local Health Committees being responsible for that share of the cost which would be expended in the medical relief of workers under the Insurance Scheme, and the Council for that share expended in the medical relief of school children. It seemed, therefore, that the Council would be well advised in avoiding any permanent commitments, and in looking upon all present schemes for medical treatment as provisional until the great reorganisation of the medical relief of the working classes foreshadowed in the Bill had been carried into effect.

The Financial Aspect of the Bill.

The Finance Committee, reporting upon the Bill in its financial aspects, urged that the Council should not be in the position of being forced to make up deficiencies incurred by a Local Health Committee without having some control over the operations that had led up to a deficiency. The clause which imposed a serious potential liability upon the Council and local authorities in the event of excessive sickness due to bad housing or insanitary conditions, even if workable, was inapplicable to London. The ratepayers of the county as a whole might be heavily penalised as a result of the default of a borough council, and the County Council might be involved in large expenditure on account of epidemics which it had no power to prevent. As to the provision that the Treasury and the County Council should each make good one-half of any "reasonable and proper" deficiency resulting from the work of the Local Health Committee, the Finance Committee noted that the Chancellor said to the deputation from the Association of Municipal Corporations that "Local Health Committees had no right to hypothecate either rates or taxes for the purpose of expenditure without the full and unfettered consent of the County Council and the Treasury," but this declaration did not appear to be consistent with the assurance to the medical profession in the Chancellor's speech to the British Medical Association on June 1st. On that occasion he suggested very specifically that the Local Health Committees had behind them the rates and taxes in case their funds for medical benefit were insufficient. It appeared to the Finance Committee to be very doubtful whether, in actual practice, the local authorities would have any real discretion in the matter under the Bill as it now stood. The position would resolve itself largely into making good a deficiency brought about by past action unless the local authorities were consulted at an earlier stage.

The Parliamentary Committee, though unable to adopt the suggestion of the Public Health Committee that the powers and duties of the new committee should be conferred on the Council, advised that amendments in the National Insurance Bill be sought to provide that:

1. The Council shall not be liable to make good out of the county fund one-half of any sums expended on medical benefits in excess of the amount received from the Insurance Fund by the Local Health Committee.
2. The Council shall not be liable to provide or maintain sanatoria.
3. Complaint of default by a local sanitary authority shall be made (in London) in the first instance to the County Council, which shall make any necessary order, the Local Government Board being appealed to only on default of the County Council.

The report was only reached towards the end of a long sitting, and detailed consideration of the proposed amendments to the Bill was adjourned until next week.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office, 37, Soho-square, London, on Friday, June 30th, Sir HENRY MORRIS, the treasurer, being in the chair. Among those who attended were Mr. J. Paul Bush, Dr. Charles Caldecott, Dr. Charles W. Chapman, Sir William S. Church, Mr. Andrew Clark, Dr. W. Collier, Sir Dyce Duckworth, Dr. Arthur Grayling, Dr. F. de Havilland Hall, Mr. Horace E. Haynes, Mr. J. B. Lawford, Mr. J. H. Morgan, Sir Shirley F. Murphy, Dr. F. Needham, Sir R. Douglas Powell, Dr. Guthrie Rankin, Dr. St. Clair B. Shadwell, Surgeon-General Sir Lionel D. Spencer, Dr. Frederick Taylor, Dr. Herbert Taylor, and Dr. J. Roberts Thomson.

The SECRETARY read the list of successful candidates for pensionerships and foundation scholarships as follows:—

PENSIONERSHIPS.	Votes.
1. Agnes Paterson	7827
2. Hermine Armstrong	5778

FOUNDATION SCHOLARSHIPS.	
1. Hugh E. Cutfield	8286
2. Alec F. Watson	7973
3. Colin P. Ledward	7555
4. Francis R. M. Buckell	7446
5. Charles E. Carruthers	5822
6. Thomas H. W. Procter	5644

The SECRETARY stated that Robert E. P. Shearer and A. W. Glover Moore would be appointed foundation scholars, under By-law 24, at the Council meeting which would be held immediately after that meeting.

In moving the adoption of the report for the past year the CHAIRMAN referred to the loss which the College had sustained in the death of Sir Constantine Holman, who for over 30 years as an active member of the Council, and for 19 years of that period as treasurer, had so ably promoted the interests of the College by his energy and wisdom. Although there already existed at the College a memorial of his labours in the Holman Reading-room, the Council was about to place a suitable tablet in the College chapel as a mark of its appreciation of his conspicuous efforts on behalf of the institution. After referring briefly to the salient points dealt with in the report the Chairman drew attention to the decision recently arrived at by the General Medical Council in regard to the recognition of approved secondary schools as institutions in which medical study may be commenced, and mentioned that several members of the General Medical Council paid a visit to the College a few weeks ago and had expressed their gratification at inspecting the well-equipped laboratories for the teaching of science. He said that at the last meeting of the General Medical Council one of these members expressed the opinion that Epsom College ought to be recognised as an institution in which medical study may be commenced, as it was impossible to go round that school without recognising that the whole system of scientific teaching there was of a higher order than that found in the average medical school. At the same meeting another member of the General Medical Council who had visited Epsom College expressed the opinion that the school ought to be on the list of approved institutions in which medical study may be commenced, and stated that he was perfectly willing to propose a motion to that effect.

The report of the Council to the governors stated that in spite of the demands which constantly are being made upon the purses of all classes the receipts from annual subscriptions again showed an increase, this satisfactory feature being in a great measure due to the zealous efforts of honorary local secretaries and other friends of the College. Whilst expressing the cordial thanks of the governors to all who had rendered assistance, the Council earnestly asked for a continuation of their help in view of the fact that a sum of close upon £5000 must be obtained by means of annual contributions in order that the full number of 50 pensionerships and 50 foundation scholarships might be maintained. There were at the present time on the books of the College 49 ordinary pensioners, 8 Pugh pensioners, 10 France pensioners, 14 Da Silva pensioners, 3 Morgan annuitants, 5 Highett pensioners, of whom two receive £30 and three receive £10 a year, 1 R. R. Cheyne annuitant, and 4 Brodie Sewell pensioners. The election that day would bring the number of ordinary pensioners up to 50. The governors would be glad to learn that under the will of the late Mrs. Mary Helen Christie, of Ribsden, Windlesham, Surrey, who died in February last, a legacy of £3200 had been bequeathed to the College to provide two pensions of at least £40 each for medical men. The Council also had pleasure in reporting the receipt of a donation of £50 from Miss Esther Du Bois, the interest thereon to be spent in prizes for boys on the Foundation, in memory of Anne Du Bois. The general work and the discipline of the school had been satisfactory, the various games having been played with the usual enthusiasm, and the school institutions being in a flourishing condition. The study of aeroplanes and the problems of flight had proved to be very popular with the boys. A team again went to Bisley to shoot for the Ashburton Shield and took the thirty-ninth place out of 55 schools. There was an unmistakeable improvement in the shooting and the Officers' Training Corps was doing excellent work.

The report further stated that since the last annual general meeting of the governors the Council had inquired very carefully and exhaustively into the administration of the College infirmary, as well as into the questions of sleep, dress, dietary, and medical inspection of the boys, in order that the governors might rest assured that such matters would be brought into line with modern requirements. An inspection of the whole school was held in June, 1910, under the auspices of the Oxford and Cambridge Schools Examination Board, and the report received by the Council was most satisfactory. The examiners also commented on the efficiency of the masters, and on the fact that they so conducted their classes as to attract the intelligent interest and attention of the boys in their work. Since the last annual general meeting six boys had passed the whole or a part of the first examination for medical degrees of the University of London, 14 boys had passed the matriculation examination of the same University, 9 boys had gained the higher certificate of the Oxford and Cambridge Schools Examination Board, and 25 had gained the lower certificate. Last year the Du Pasquier scholarship was awarded to C. W. S. Davies-Jones, the Stone scholarship was given to W. F. Marshall, and the Jenks Memorial scholarship was awarded by the Royal College of Surgeons of England to G. Gibbons. The hospital scholarships were awarded as follows: St. Bartholomew's, M. S. Beaumont; London, J. N. Deacon; Middlesex, H. Wearne; St. Mary's, R. M. Handfield-Jones; St. Thomas's, G. M. Kendall; and University College, together with the Carr exhibition, which goes with it, H. Ll. G. Hughes.

The report having been adopted, the usual formal business was transacted, after which a cordial vote of thanks to the chairman for his indefatigable labours as treasurer was proposed by Sir WILLIAM CHURCH, and was carried with acclamation.

MEDICINE IN SCANDINAVIA.

No. II.—DENMARK.[1]

Number of Medical Men and their Incomes.

DENMARK, with a population of 2½ millions, has about 1800 medical practitioners, who are, therefore, in the ratio of 1 to 1400 inhabitants. The population is fairly dense, for the area of the country is only 14,553 square miles; but the medical man's lot is not altogether a happy one, for both the cost of living and competition have much increased lately, whereas his fees have remained the same. Medical earnings in some cases do not exceed from 3000 to 4000 kroner (£166 to £222), and incomes ranging from 40,000 to 50,000 kroner (£2220 to £2777) are only made by a few popular specialists. In the period 1908-09 there were 502 medical men in Copenhagen who paid taxes. The income (from all sources) of 220 of these men was rated at less than £277 each. In 1907 the average income for medical men in Copenhagen from the age of 25 to 30 was £98; from 30 to 40, £211; from 50 to 60, £624; and from the age of 60 and over it was £603. These sums represent interest on capital as well as earned incomes, but the average amount of the latter far exceeds that of the former.

Medical Education.—Government Appointments.

Medical degrees are given only by the University in Copenhagen, where the student takes about seven years to qualify. Two examinations are held: Part I. includes anatomy, physiology, chemistry, and physics; Part II. includes medicine, surgery, and midwifery, and it must be taken not more than six years after Part I. Clinical appointments are held at the hospital before Part II. is taken, and after qualification resident hospital appointments may be held for a year. There are no special diplomas corresponding to the F.R.C.S. or D.P.H., but the medical man desirous of specialising in any particular branch of the profession attends at the special hospital department he may choose and holds its appointments. He may also take the degree of M.D., the original contributions to which may be purely surgical.

There are about 100 Government district medical officers in the country, which is divided into 12 areas. Each area is managed by a senior medical officer, who in his turn is under the control of a central "Sundhedsstyrelse" or Sanitary Board, the establishment of which in its present form dates from 1909. For the larger towns there are special medical officers. The system of Government medical officers has been found faulty to such an extent that its reorganisation has been placed in the hands of a special medical commission whose findings have not yet been published.

Organisation of the Medical Profession.

The Danish Medical Association (Den Almindelige Danske Laegeforening) was founded in 1857 by 80 medical men to protect the interests of the profession. In 1910 its membership had risen to about 1600, and its sphere of influence had

[1] No. I. was published in THE LANCET of July 1st, 1911, p. 36.

increased proportionately. One of its most important functions in recent years has been the supervision of contract medical practice, which has assumed enormous proportions. The number of sickness and accident societies recognised by the Government in 1907 was 379, with a total membership of 473,694. The conflicts which have inevitably arisen between these societies and their medical officers have repeatedly proved the value of the Association to its members.

The Association's campaign against quackery and secret remedies has been active and sustained, but its efforts have hitherto been largely ineffectual. Homœopaths and others whose medical practice is not based on scientific principles are excluded from the Association's membership. Although the branches of the Association are subordinate to the central organisation they are allowed considerable latitude in the framing of their own rules, and such restrictions as those with regard to advertising outside the medical press vary considerably in different localities. Disputes of a professional nature arising between members are settled by arbitration, and the refusal to abide by the decision of the arbitrators is punished by loss of membership. Loss of membership (but not of the right to practise) is also incurred if the Association finds a member guilty of unprofessional conduct, or if the executive of a branch of the Association at the request of half its members or if the executive of the Association advocates dismissal of a member, provided that the proposal is supported by a majority of the votes given in writing by the members of the local branch. The disciplinary powers of the Association have also been effectually applied to the price-cutting tactics of insurance companies and other bodies, and members must now charge for their services according to the Association's tariff. Members are also forbidden to issue certificates to insurance companies for a fixed yearly salary. The Association has, moreover, laid down definite rules for the conduct of its members in their mutual relations.

The Association has materially influenced the framing of recent sanitary laws, notably those relating to tuberculosis and prostitution. As an example of the anomalies which meet the medical practitioner in Denmark, and which require the vigorous action of the Association, may be mentioned the unrevoked law of 1825, according to which the district medical officer is bound to treat venereal disease at the rate of 4 kroner per patient, the fee being paid only if the treatment is successful. In practice, however, this law is commonly evaded. Another anomaly the formal removal of which the Association has secured is the surgical part played by barbers, who were eligible to practise surgical first aid in Copenhagen until the end of the last century.

Sanatoriums.—Scientific Contributions.—Medical Literature.

The campaign against tuberculosis has been conducted largely on sanatorium lines, and the number of sanatoriums, public and private, now in existence actually exceeds the demand.

Danish contributions to the science of medicine include those of W. Meyer (adenoids), B. Bang (tuberculosis), J. Petersen (history of medicine), C. Gram (bacteriology and medicine), H. Howitz (gynæcology), C. Rovsing (surgery), C. J. Salomonsen and T. Madsen (bacteriology), G. Dreyer (professor of pathology at Oxford), C. Bohr and V. Henriques (physiology), J. C. Bock (pharmacology), K. Faber (medicine), M. Tscherning (physiological optics), E. Ehlers (leprosy), H. Mygind and E. Schmiegelow (oto-laryngology), S. Saxtorph (surgery), and C. O. Jensen (cancer). The late Dr. Finsen's works on light as a therapeutic agent are known to all, and much original work of a similar character is still being carried on in Denmark.

The medical literature of the country has reached a high scientific standard. The senior journal is *Ugeskrift for Laeger*, the official organ of the Association. The weekly journal, *Hospitalstidende*, edited by Professor Rovsing, usually contains excellent original papers and reviews of recent medical literature. Other journals are *Dansk Klinik*, *Nordisk Tidsskrift for Therapi*, which is a monthly journal, and *Bibliotek for Laeger*, which appears every other month. The majority of text-books in use are German. English and French works are less known, but most Danish medical men read all three languages.

The author wishes to thank Dr. Christopherson, the secretary of the Medical Association, for valuable assistance in providing much of the material for this paper.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to June 30th (total, about £17,500) :—

	£	s.	d.
St. Paul's Cathedral	336	0	0
Westminster Chapel, with additions	296	0	0
St. Peter's, Cranley-gardens	225	0	0
St. Jude's, Earl's Court	225	0	0
"F. G. D."	200	0	0
Theistic Church, Swallow-street, St. James's (Rev. Chas. Voysey)	200	0	0
Holy Trinity, Tulse Hill	155	0	0
Bromley Parish Church with Chapel of Ease and Mission	145	0	0
Aldenham Parish Church	135	0	0
St. Peter's, Vere-street	125	0	0
St. George's, Bickley, and Widmore Mission	120	0	0
St. Mark's, Hamilton-terrace	114	0	0
St. Simon's, Upper Chelsea	114	0	0
Lyndhurst Road Congregational Church, Hampstead	113	0	0
St. John's, Penge	110	0	0
Rosslyn Hill Church	107	0	0
Christ Church, Gipsy Hill	97	0	0
All Saints', Margaret-street	94	0	0
Regent-square Presbyterian Church	87	0	0
Union Chapel, Islington	80	0	0
Kensington Presbyterian Church	77	0	0
Greek Church, Bayswater	75	0	0
Holy Trinity Parish, Eltham	70	0	0
Immanuel, Streatham	64	0	0
Marylebone Presbyterian Church	59	0	0
Stamford Hill Congregational Church	55	0	0
St. Michael's, Blackheath	55	0	0
The Oratory, South Kensington	54	0	0
Chapel Royal, Hampton Court	51	0	0
St. George's, Perry Hill	50	0	0
Christ Church, Lee	50	0	0
Holy Trinity, Upper Tooting	46	0	0
St. John's, Notting Hill	46	0	0
Weybridge Church	46	0	0
St. Saviour's, Paddington	44	0	0
St. James's, Hatcham	44	0	0
St. Stephen's, Portland Town, with Missions	44	0	0
Kensington Congregational Church	44	0	0
St. Stephen's, Westminster	43	0	0
St. Cuthbert's, West Hampstead	39	0	0
Grosvenor Chapel	39	0	0
St. Paul's, Camden-square	36	0	0
St. Mary's, West Kensington	34	0	0
All Saints', Friern Barnet	33	0	0
St. Paul's, Harringay	33	0	0
Heath Green Baptist Church, Hampstead	31	0	0
St. Mary Magdalene, Wandsworth	31	0	0
St. Paul's, Wimbledon Park	31	0	0
Christ Church, Streatham Hill	31	0	0
St. Mary's, Plaistow	30	0	0
Acton Parish Church	30	0	0
St. Andrew's Presbyterian Church, Upper Norwood	29	0	0
St. Michael's, Stockwell	28	0	0
St. Alban's, Streatham	28	0	0
Christ Church, Forest Hill	27	0	0
St. Martin's-in-the-Fields	27	0	0
St. Luke's, West Norwood	27	0	0
St. Andrew's, Alexandra Park	26	0	0
All Saints', St. John's Wood	26	0	0
Ascension, Blackheath	26	0	0
Finsbury Park Wesleyan Circuit	26	0	0
Crayford Parish Church	25	0	0
St. George's, Tufnell Park	24	0	0
Paddington Congregational Church	24	0	0
Epsom Parish Church	24	0	0
Streathill Hill Congregational Church	23	0	0
St. Jude's, East Brixton	23	0	0
Merton Parish Church	23	0	0
All Saints', Leyton	22	0	0
Trinity Church, Wimbledon	22	0	0
Southwark Cathedral	22	0	0
St. Thomas's, Woolwich	22	0	0
St. Andrew's, Whitehall Park	22	0	0
St. John's, Palmer's Green	22	0	0
St. George's, Southwark	21	0	0
St. Jude's, Chelsea	21	0	0
Mr. Francis Reckitt	21	0	0
Vintners' Company	21	0	0
Barnes Parish Church	21	0	0
Charterhouse Chapel	20	0	0
St. Thomas's, Telford Park	20	0	0
St. Mary's, Balham	20	0	0
Holy Trinity, Dartford	20	0	0
Miss Oliverson	20	0	0
Holy Trinity, Kilburn	20	0	0
Miss F. Druce	20	0	0
Miss E. C. Druce	20	0	0
In Memoriam, Crosby Lockwood, S. L., and D. E. L.	20	0	0
Lady Northwick	20	0	0
Miss C. M. Bulkeley	20	0	0
Mrs. Hordern	20	0	0
Upper Clapton Congregational Church	20	0	0
All Saints', Putney Common	20	0	0
Tooting Wesleyan	20	0	0

MEDICINE AND THE LAW.

Murder Committed by a Person under the Influence of Mental Distress.

AT the Old Bailey recently a very painful trial resulted in the conviction of a flower-seller, Margaret Murphy, 38 years of age, for the murder of her seven months old child. Murphy was the mother of six children, three of whom were dependent upon her, as she lived apart from her husband. She was unable to pay her rent, and having gone to Epsom to sell flowers and lost the whole of her money there, after her return, according to her statement, she remained awake all night through worry. In the morning she obtained some spirits of salts, some of which she gave to her baby, causing its death, and herself took the rest, but, although she was found unconscious, she recovered. Evidence was given by Dr. W. C. Sullivan, medical officer at Holloway Prison, to the effect that having had the prisoner under his observation for nearly a week he was of the opinion that she did not fully know what she was doing when she administered poison to the child. She had told him that she was anxious about her rent and afraid that she would be sent to prison, and he considered her to be emotionally unbalanced when she committed the act, but could not say that there was any mental disease discoverable, or that at the time of the alleged murder she was insane. Mr. Justice Darling in summing up dwelt upon the painful nature of the case, but asked the jury to remember that they had a duty to perform, and intimated to them his opinion that the occasion was rather one for the exercise of the clemency of the Crown upon the advice of the Home Secretary than for a verdict of insanity. A verdict of "Guilty" was returned, coupled with a strong recommendation to mercy, and sentence of death was passed in the usual form. The death sentence will not be carried out, and the case is one of those which show the difficulty of distinguishing the varying degrees of mental disturbance which may qualify the guilt of a person charged with "Wilful murder." It is also a case likely to strengthen the hands of those who are seeking to introduce such changes in the procedure relating to trials for this crime as will prevent the solemn death sentence being pronounced when it is extremely unlikely that it will be carried out.

Keeping a Lunatic in an Unlicensed House.

At the Old Bailey recently Jane Mathieson, keeping a boarding-house in Penywern-road, London, was indicted for taking charge of a lunatic for payment in an unlicensed house, and also for unlawfully neglecting and ill-treating her. The lunatic in question was an elderly lady named Blackley, who was found to have purchased annuities amounting to £260 a year, and to have afterwards assigned the whole of this income to the prisoner, in whose house she had for some time resided on the terms that she should be provided in return with board and residence. A lady, who had been employed by the prisoner as a manageress, had had her attention attracted by cries proceeding from the basement and had been told by the prisoner that it was occupied by "a rich old lady who is worth more to me than all the other boarders." The manageress called the attention of the police to the matter, including the manner in which the old lady in question was apparently being fed, and inquiries followed, with the result that Miss Blackley, who was discovered in the basement ill-clad and neglected, was certified as insane and removed to an asylum, summonses being issued against the proprietress of the house. Mathieson pleaded guilty to the first count of the indictment, for unlawfully taking charge in an unlicensed house, and was ordered to pay a fine of £50 and to be imprisoned until the money should be paid. It is desirable that all possible publicity should be given to a case of this kind, as although such incidents may not be common, they occur from time to time. A great deal of unnecessary suffering is endured by the victims, and, as a rule, discovery can only take place through the intervention of some outside person who has to assume the responsibility of interfering. It is well that all should know that the police will interest themselves in such a case, and by taking the necessary steps to inquire into it can secure proper treatment for the afflicted person with punishment for those who have taken advantage of the helpless.

The Proposed Weir Hospital at Streatham.

The Charity Commissioners are about to seal an order establishing their revised scheme for giving effect to the will of Benjamin Weir which was proved in the Principal Registry of the Court of Probate on April 24th, 1902, for the provision of a hospital and dispensary at Streatham. It will be remembered that the original scheme of the Commissioners, disallowed by the Law Courts at the instance of the Wandsworth Borough Council, proposed to hand over the bulk of the Weir bequest to the Bolingbroke Hospital, Battersea. The new scheme provides, *inter alia*, that "the trustees of the charity shall establish on the site of the messuage and tenement known as The Hawthorns, a Cottage Hospital for the benefit of the inhabitants of the parish of Streatham and the neighbourhood, with such a number of beds and such accommodation for the staff, appliances, equipment, offices, and conveniences suitable for the administration of the hospital or the affairs of the charity as having regard to the funds applicable to, or available for, the purposes of the charity, the trustees may think proper. The staff of the hospital shall consist of such resident and other medical officer or officers, matron, dispenser, nurses, servants, and attendants as the trustees may from time to time consider necessary. The hospital shall comprise an out-patient department, with or without a dispensary. For the purpose aforesaid, the trustees may either adapt the existing buildings on the said site, or pull down and erect on the said site and on any site acquired as hereinafter mentioned new buildings in accordance with plans to be approved by the Charity Commissioners. They may also, with the approval of the said Commissioners, acquire by purchase any land and hereditaments contiguous to the said premises known as The Hawthorns which may be required for the enlargement of the said site, so as to render it convenient for the objects of the charity. The trustees shall use the messuage and tenement known as No. 22, Old Devonshire-road, either as a dispensary or otherwise as an adjunct to and as part of the hospital until they shall, with the approval of the Commissioners, otherwise determine. Subject to the provisions of the said will and of this scheme, the hospital shall be administered by a committee of management, constituted as directed by the said will, in accordance with rules to be made from time to time by them." The property of the charity, as shown by a schedule, comprises, besides the two houses known as The Hawthorns (No. 17, Grove-road, Clapham Park) and 22, Old Devonshire-road, Balham, consols and other stocks and shares, &c., of the gross value of about £120,000.

THE MEDICAL EXAMINATION OF DRIVERS OF MECHANICALLY PROPELLED VEHICLES.—The proprietors of mechanically propelled public service vehicles in the metropolis have been notified by the police that in future all applicants for licences to drive public service motor vehicles will have to undergo a medical examination or produce a certificate as to fitness.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—Viscount Portman presided on June 30th at a meeting at 22, Portman-square, London, for the inauguration of a ladies' association in connexion with Queen Charlotte's Hospital, Marylebone-road. He explained that the object of the association was to obtain increased support for the hospital and to spread a knowledge of the excellent work in which it had been engaged for nearly 160 years. Most useful work might also be done by a ladies' association in providing linen for the mothers and infants in the hospital. Sir Samuel Scott, M.P., chairman of the committee of management, referred to the increasing difficulty experienced in obtaining subscriptions for hospitals, and hoped that the ladies' association would be instrumental in increasing the income from this source. The committee wanted ladies to come and see the hospital and become interested in the work. Dr. W. J. Gow (senior physician) spoke of the valuable work done by the hospital, and urged the importance of a ladies' association. At other hospitals they had been most useful. A resolution for the formation of a ladies' association was passed. Viscountess Portman was elected president of the association and an executive committee was formed.

Public Health.

THE PUBLIC HEALTH OF GIBRALTAR IN 1910.

THE annual report on the public health of the civil population of Gibraltar for the year 1910 shows that the inhabitants of this colony (other than military) number 18,134, of whom 15,451 form the "fixed civil population"—that is, British subjects; while "resident aliens" number 2683: there has been a decrease of 217 since the numeration at the end of 1909. Under the exceptional conditions prevailing in this fortress such a decrease is satisfactory; it would indeed be more satisfactory if the heading "resident aliens" were to disappear altogether. The birth-rate, 25·2 per 1000 living, is the lowest but one yet recorded; it is practically the same as that for England and Wales (25·6) in 1909, and contrasts strongly with the rate of 36·7 registered in Malta. The general death-rate was 18 per 1000, which was higher than in any year since 1905. The deaths of children under one year were at the rate of 135 per 1000 births, not an excessive figure considering the peculiar conditions of the place, but a disappointing sequel to the very low rate of 73·4 in 1909. Of the total 53 deaths under one year, inflammation of the stomach and bowels accounted for 24, and inflammation of the lungs for 8. The medical officer of health hopes that classes of instruction may be started for the education of mothers in the rearing of infants and the care of the home. Of the infectious diseases notified, tuberculosis (66 cases), whooping-cough (64), and measles (59) were the most prevalent. The measles outbreak was mild in character, only one death resulting; scarlet fever cases numbered 31, but none were fatal; of diphtheria there were 13 cases, scattered in distribution, and with no definite cause to be traced; five of these were fatal. There were 14 cases of small-pox, 4 being contacts, and 3 others evidently infected in Linea. The origin of the remaining cases is considered to have been due to Spanish workpeople coming into Gibraltar when sickening for the disease or convalescent. It is satisfactory to learn that all the cases were adults not vaccinated since infancy, the revaccination ordinance having protected the children and the young population. There were only three cases of Mediterranean fever, though from 10 to 15 per cent. of the goats still yield a reaction with M. melitensis; their milk is therefore dangerous in the raw state. Enteric fever was notified in 25 cases, of which 20 contracted the disease on the Rock; there were 6 deaths; no definite cause is assigned. Tuberculosis appears to be increasing: 66 cases were notified and 28 deaths occurred, compared with 46 cases and 25 deaths in the previous year. The health officer mentions that compulsory notification was introduced in 1906, but that nothing has been done to ameliorate the lot of those suffering from the disease, or to protect those who live in proximity with them from being infected. Several instances are given in which transmission from one member of a family to another appears to have occurred. It is urged that a tuberculosis dispensary be established, where patients can be treated and educated in the measures necessary to safeguard other members of the household from infection; and that cases of the disease be tracked out in connexion with those under treatment; some such scheme, it is hoped, may be brought into operation before long. For more serious cases a sanatorium would be required. A committee has been appointed to inquire into the whole question.

Perhaps the most important matter as regards sanitation in Gibraltar is the extremely close aggregation of the houses, and the fact that the large majority of them are of the tenement order; many of these consist of single rooms. As the health officer very truly says, it is only by the abolition of the most crowded and insanitary areas that much improvement can be effected in certain parts of the town. It is understood that long leases are not now granted; and if Gibraltar is to be regarded as a fortress rather than a colony the correct policy would be not only to retain, but to recover the power over all property in land in order that it may be dealt with at discretion in the higher interests of the community. A case has occurred in the past year where a plot of ground of 5500 sq. ft. has been acquired by the Commissioners, with the help of the Colonial authorities, on which an open space will be formed. The value of Gibraltar consists in its being an impregnable fortress, and a fortress is not impregnable if it is so overcrowded as to be insanitary. Moreover, the water-supply is by no means unlimited; the summer dry weather of 1910 was prolonged into December, such an absence of rain during September, October, and November not having occurred since 1882; fortunately, heavy rains in the previous wet season had left a full storage-supply and condensing was only required for a few days. It is understood that additional storage for 2,000,000 gallons is to be provided, also an extension of the catchment area. Improvements have been made in the sewerage system, some part of the old deep sewer from St. Jago's barracks, through Queen-street and Town Range, having been relaid; during the present year this work of relaying the most defective sewers will, it is hoped, be completed. Refuse is efficiently disposed of in a destructor, and before long it is expected that night-soil from various War Department premises will also be consumed in this way so as to avoid nuisance in Catalan Bay and at the Eastern Beach.

This report by Major C. E. P. Fowler, R.A.M.C., medical officer of health and sanitary officer to the garrison, shows what a careful watch is kept on all the conditions affecting the public health both of the civil and of the military populations; the position is a difficult one to hold and requires considerable tact and administrative ability on the part of its occupant. The excellent results obtained are most satisfactory.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 9211 births and 3623 deaths were registered during the week ending July 1st. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had declined in the 11 preceding weeks from 16·8 to 11·3 per 1000, did not exceed 11·7 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 13·8 per 1000, and in London during the same period the mean annual death-rate did not exceed 13·2 per 1000. The recorded annual death-rates during last week in the 77 towns ranged from 3·1 in Hornsey, 4·6 in Bournemouth, and 6·9 in Northampton, to 17·6 in Sunderland, 17·7 in Great Yarmouth, and 19·8 in Walsall. The 3623 deaths from all causes in the 77 towns last week showed an increase of 137 upon the low number in the previous week, and included 268 which were referred to the principal epidemic diseases, against 264 and 273 in the two preceding weeks. Of these 268 deaths, 76 resulted from measles, 70 from infantile diarrhœa, 62 from whooping-cough, 35 from diphtheria, 17 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases, which had been equal to 1·2 and 0·9 per 1000 in the two previous weeks, was again last week 0·9. The fatal cases of measles in the 77 towns, which had been 125, 124, and 81 in the three preceding weeks, further declined last week to 76, and were fewer than in any previous week of this year; the highest annual death-rates from this disease recorded in these towns last week were 1·2 in Wigan and in Bolton, and 2·8 in Great Yarmouth. The 70 deaths attributed to infantile diarrhœa in the 77 towns were fewer by 18 than those returned in the previous week; they included 15 in London and its suburban districts, 6 in Birmingham, 13 in Liverpool, and 6 in Manchester and Salford. The fatal cases of whooping-cough, which had been 81, 69, and 63 in the three preceding weeks, further declined to 62 last week, but caused annual rates equal to 1·4 per 1000 in Sunderland and 2·2 in Bootle. The 35 deaths referred to diphtheria exceeded the number in the previous week by 14, and included 11 in London and its suburban districts, 6 in Manchester and Salford, and 2 both in Leeds and in Newport (Mon.). The 17 fatal cases of scarlet fever also showed a slight increase on the number in the previous week; 3 occurred in Birmingham, and 2 each in Bristol, Coventry, and Leeds. The 8 deaths referred to enteric fever corresponded with the low number in each of the two preceding weeks. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the 11 preceding

weeks from 982 to 1223, had further risen to 1226 at the end of last week; 163 new cases of this disease were admitted to these hospitals during the week under notice, against 190 and 159 in the two previous weeks. These hospitals also contained 774 cases of diphtheria, 433 of measles, 278 of whooping-cough, and 33 of enteric fever, but not one of small-pox. The 961 deaths from all causes in London showed an increase of 40 on the exceptionally low numbers in the previous week, and included 117 which were referred to diseases of the respiratory system, against 141, 139, and 111 in the three preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had declined from 177 to 136 in the five preceding weeks, rose again to 169 in the week under notice; 335 inquest cases were registered. The causes of 29, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 55 other smaller towns; the 29 uncertified causes of death in the 77 towns last week included 10 in Birmingham, 5 in Liverpool, and 2 in Bootle.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, with an estimated population of 1,710,291 persons, 945 births and 467 deaths were registered during the week ending July 1st. The annual rate of mortality in these towns, which had declined in the five preceding weeks from 17·7 to 13·3 per 1000, rose again to 14·2 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 16·7 per 1000 of the revised estimate of their population, and exceeded by 2·9 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 10·2 in Aberdeen and 11·6 in Leith, to 16·0 in Perth and 17·4 in Dundee. The 467 deaths from all causes in the eight towns last week showed an increase of 32 on the low number in the previous week, and included 63 which were referred to the principal epidemic diseases, against 64 and 58 in the two preceding weeks; of these 63 deaths, 22 resulted from whooping-cough, 20 from diarrhœa, 13 from measles, 5 from diphtheria, and 3 from scarlet fever, but not one either from enteric fever or small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·9 per 1000, and exceeded by 1·0 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had declined in the four preceding weeks from 43 to 25, further declined last week to 22, of which 13 occurred in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The 20 deaths attributed to diarrhœa showed a marked increase upon the numbers in recent weeks, and included 7 in Glasgow and 5 in Dundee; 16 of the 20 deaths from this disease were of infants under two years of age. The 13 fatal cases of measles were fewer by 3 than those returned in the previous week; 11 occurred in Glasgow and 2 in Perth. Of the 5 deaths referred to diphtheria, 3 were returned in Glasgow and 2 in Perth. A fatal case of scarlet fever was registered in Glasgow, Edinburgh, and Greenock. The deaths referred to diseases of the respiratory system in the eight towns, which had been 49 and 51 in the two previous weeks, declined to 48 in the week under notice, and were 7 below the number returned in the corresponding week of last year. Of the 467 deaths from all causes in the eight towns last week, 157, or 34 per cent., were recorded in public institutions, and 8 were attributed to different forms of violence. The causes of 16, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the recent Census numbers), 836 births and 374 deaths were registered during the week ending July 1st. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 17·1 to 13·5 per 1000, rose again to 17·0 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 17·9 per 1000; the mean rate during the same period in the 77 English towns did not exceed 13·8 per 1000, and in the eight principal Scotch towns was 16·7 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 19·5 in Dublin (against 11·1 in London), 15·7 in Belfast, 18·4 in Cork, 14·1 in Londonderry, 14·9 in Limerick, and 5·7 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 16·3 per 1000. The 374 deaths from all causes in the 22 towns last week showed an increase of 77 upon the low number in the previous week, and included 21 which were referred to the principal epidemic diseases, against 23 and 27 in the two previous weeks; these 21 deaths were equal to an annual rate of 1·0 per 1000, exceeding by but 0·1 the mean rate from the same diseases in the 77 English towns. These 21 deaths from the principal epidemic diseases in the Irish towns last week included 9 from measles, 6 from infantile diarrhœa, 3 from whooping-cough, 2 from diphtheria, and one from typhus, but not one from scarlet fever, enteric fever, or small-pox. The 9 fatal cases of measles exceeded by one the number in the previous week, and included 7 in Dublin, and 1 each in Cork and Newtownards. Of the 6 deaths attributed to infantile diarrhœa (fewer by 4 than those in the previous week) 3 occurred in Dublin and 3 in Belfast. The 3 fatal cases of whooping-cough included 2 in Dublin and 1 in Belfast. Both the deaths referred to diphtheria occurred in Dublin; and the fatal case of typhus was registered in Belfast. The deaths referred to diseases of the respiratory system which had been 64 and 48 in the two previous weeks, rose again last week to 54. Of the 374 deaths from all causes in the 22 towns last week, 113, or 30 per cent., were recorded in public institutions, and 9 were referred to different forms of violence. The causes of 20, or 5·3 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent. in the 77 large English towns, and was equal to 3·4 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: T. H. Vickers, to the *Africa*, additional, for Nore Subdivision, Home Fleet; G. Ross, to the *Victory;* A. Davidson, to the *Cormorant*, additional, for Gibraltar Hospital and for Dockyard duties; and E. F. Ellis, to the *Wildfire*, for R.N. Barracks and Sheerness Dockyard. Surgeons: J. S. Austin, to the *Victory;* L. C. Rowan-Robinson, to the *Victory*, additional, for disposal; and P. M. Rivaz to Devonport Dockyard.

ROYAL ARMY MEDICAL CORPS.

Colonel R. W. Ford, D.S.O., from the Military Hospital at Tidworth Park, Salisbury Plain District, has taken up duty as Administrative Medical Officer in the Woolwich District. Lieutenant-Colonel L. T. M. Nash has been granted six months' leave of absence home from India. Major W. Hallaran has been transferred from the Third (Lahore) Division and posted to the Military Hospital at Jhansi. Major I. A. O. MacCarthy, from Guildford, has taken up duty at Woolwich. Major M. Swabey, from Secunderabad, has been appointed to the Station Hospital at Wellington, Madras Presidency. Major C. T. Samman has been appointed Specialist in Mental Science to the Southern Army, India. Major W. H. S. Nickerson, V.C., has taken up duty as Officiating Sanitary Officer to the First (Peshawar) Division during the absence on leave of Major R. J. Blackham. Major H. G. Walton has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Captain D. T. McCarthy has been transferred from the Seventh (Meerut) Division to the Eighth (Lucknow) Division for duty. Captain E. W. Powell has been granted leave of absence home from India

for four months. Captain A. McMunn, at present doing duty in the Dublin District, has been placed under orders for service in South China. Captain L. F. F. Winslow, from Pontefract, has joined for duty at Lichfield. Captain D. P. Johnstone has been transferred from Seaforth to Liverpool. Captain A. D. O'Carroll, from the Ambala Station Hospital, Sirhind District, Northern India, has been appointed to the Military Hospital at Aden. Captain J. B. Hanafin has been posted to Dehra Dun from Attock. Captain J. E. Hoar, on return from a tour of service in India, has been appointed to the Belfast District. Captain B. Johnson, from Wellington, Madras Presidency, has taken up duty at St. Thomas's Mount. Lieutenant F. H. Somers-Gardner, from Cosham, has joined at Gibraltar. Lieutenant T. H. Dickson, from the Dublin District, has been placed in Medical Charge of the Troops at Birr. Lieutenant R. C. Priest, at present serving at Colchester, has been placed under orders for a tour of service in India. Lieutenant D. E. C. Pottinger, from Glencose, has taken up duty at the Station Hospital, Lucknow.

Lieutenant-Colonel Henry L. E. White is placed on retired pay (dated July 3rd, 1911).

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of Colonel Aylmer Martin Crofts, C.I.E., to Surgeon-General (dated April 7th, 1911).

Lieutenant-Colonel B. B. Grayfoot has been appointed to officiate as Deputy Sanitary Commissioner for the Sind Registration District by H.E. the Governor of Bombay in Council, during the absence on deputation of Captain W. O'S. Murphy. The services of Lieutenant-Colonel F. Crimmin, C.I.E., V.C., have been placed by the Home Department of the Government of India at the disposal of H.E. the Commander-in-Chief. Lieutenant-Colonel D. T. Lane has relinquished charge of the duties of superintendent of the District Jail at Sialkot. Lieutenant-Colonel W. W. White has arrived home on leave of absence from India. Major T. H. Delany, civil surgeon at Shahabad, has been appointed Civil Surgeon at Saran, in succession to Major A. Gwyther, appointed to Howrah. Major H. Bennet has been appointed Civil Surgeon at Dharwar, in succession to Lieutenant-Colonel C. T. Hudson, who has obtained leave of absence. Major L. T. R. Hutchinson has been appointed to officiate as Professor of Pathology and Curator of the Pathological Museum at the Grant Medical College, Bombay. Captain E. C. Hodgson has been confirmed in his appointment as Medical Officer of Health, Simla, by the Home Department. Captain H. M. H. Melhuish, district plague medical officer at Amritsar, has been appointed in charge of plague preventive measures in the Delhi district. The services of Captain W. J. Fraser have been placed at the disposal of H.E. the Commander-in-Chief by the Home Department. Captain E. O. Thurston, Bengal Presidency, has received an extension of his leave of absence from India by the Secretary of State. Captain C. M. Goodbody has been appointed Civil Surgeon at Bikaner by the Foreign Department. Captain G. A. Jolly has been placed on temporary duty in the United Provinces of Oudh and Rohilkhand. Captain F. W. Cragg, on completion of his leave of absence home, has embarked for duty in the Madras Presidency. Captain V. B. Green Armytage has been appointed for duty in the Province of Eastern Bengal and Assam. Captain F. O. D. Fawcett has been granted six months' leave of absence home from India on medical certificate. Lieutenant F. F. S. Smith has been appointed Specialist in Ophthalmology to the Second (Rawalpindi) Division.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Highland Field Ambulance, Royal Army Medical Corps: Alfred John Williamson to be Lieutenant (dated April 21st, 1911).

3rd Home Counties Field Ambulance, Royal Army Medical Corps: James Barkley (late Lieutenant, Royal Army Medical Corps) to be Lieutenant (dated April 8th, 1911).

3rd Northern General Hospital, Royal Army Medical Corps: Captain Stanley Riseley to be Major (dated Jan. 3rd, 1911).

For Attachment to Units other than Medical Units.—Lieutenant Frederick William Kerr Tough, from the 1st West Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated March 8th, 1911). Robert Wilfred Simpson to be Lieutenant (dated March 28th, 1911).

2nd Wessex Field Ambulance, Royal Army Medical Corps: Lieutenant Robert Burnet, from the 3rd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated May 10th, 1911).

1st Northern General Hospital, Royal Army Medical Corps: Frederick George Armstrong, late Lieutenant, 1st Northumbrian Field Ambulance, Royal Army Medical Corps, to be Captain (dated May 12th, 1911).

3rd Western General Hospital, Royal Army Medical Corps: Surgeon-Captain Francis Griffith Thomas, from the 1st Welsh (Howitzer) Brigade, Royal Field Artillery, to be Captain, whose services will be available on mobilisation (dated July 5th, 1911).

For Attachment to Units other than Medical Units.—Percy Reginald Bolus to be Lieutenant (dated June 1st, 1911).

THE CARE OF THE WOUNDED IN A NAVAL ACTION.

What guiding principle will best direct the work of a medical officer in a naval battle? That is the question considered by a writer in the *Marine Rundschau* for June, commenting on a previous article (see THE LANCET, April 8th, p. 966), which detailed a well-thought-out plan for the satisfactory treatment of the wounded in an action on the lines that armies have found best. Here it is urged that that plan is too elaborate, requires too many assistants, and is founded on a misconception of the main duty of a medical officer in action. The conditions on board a ship differ so widely from those on a battlefield that similar measures can hardly be applied. In a ship men of all classes are intermingled, and in the same group of wounded not only must it be noted that some are lightly, some seriously, wounded, but that the loss of some of these means little to the efficiency of the ship, while the loss of others in responsible skilled positions is of grave importance, and these men the medical officer must at once treat if it is at all possible to get them back to their work, even if others more seriously injured have for the time to go unrelieved. In a sea-fight there are no reserves. A turret gun-layer or an important petty officer cannot be replaced if injured, but if he cannot be treated forthwith his training is lost to the ship for the rest of the fight. The case of an admiral wounded will occur to everyone. The medical officer must attend to him at once, and that on the spot where he was wounded, so that if he can be patched up at all the battle may not be lost for want of his directing hand. The principle, says the author, probably a layman, the guiding principle for the medical officer, as for every other officer and man on board, is to do all he can to help the ship to come out of action victorious. Interpreted for the medical officer, that means that it is the men who can be got back to their duty who are to be his first care, particularly those with great responsibilities and usefulness in the ship. This aim he must not allow to be clouded by his humane and professional instinct to devote himself especially to the most seriously wounded. By sending those others to duty, and so increasing the ship's power of damaging her enemies, he will be doing his best to ensure for the seriously wounded a more probable return to harbour and the benefits of hospital treatment by and by.

DEATHS IN THE SERVICES.

Brigade-Surgeon Thomas Edwin Burton Brown (Bengal Army, retired), C.I.E., late principal and professor of medicine at the Lahore Medical College, and chemical examiner in the Punjab, on June 28th, at his residence in Brondesbury, at the age of 78. He joined the Indian Medical Service in 1860, and retired in 1889, when he became medical tutor at the Ayherst Hostel, Cambridge.

LONDON HOSPITAL.—His Excellency the Hon. Whitelaw Reid will distribute the prizes to the students of the London Hospital in the library of the Medical College on Thursday next, July 13th, at 3 P.M.—The annual dinner for old students of the hospital, a function which has been increasingly popular during the past few years, will be held on Oct. 3rd at the Hotel Cecil, W.C. The chairman will be Mr. Douro Hoare. The secretaries are Dr. Lewis A. Smith and Mr. Frank S. Kidd.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—Your weighty but, from my point of view, much too moderate an expression of the views relative to National Insurance will, I trust, lead to the rejection of the principles upon which the Chancellor has based his Bill.

An enigma it certainly is, that so astute a politician should have introduced a Bill without the sanction of one of the most important of the parties concerned. There can be no doubt as to the objection of the members of our profession to contract practice, which was undertaken from motives of philanthropy in the first place and which has been forced upon us of late years as as objectionable necessity. The spirit of the age is one of compromise; the spirit of the medical profession has for many years past always been such. In connexion with the present legislative action valuable time has been wasted by the British Medical Association. The managers of this society accepted the principle upon which the legislation is based, and in so doing have jeopardised the cause. There appears to be little use in haggling over the details of a crazy structure, but there appears to be a great opportunity in fighting for the great principles which you in your leading article enunciate. The principle, which Sir Alfred Pearce Gould recently advocated, of payment for work performed is the right one for which to fight.

I have referred to our objections to contract practice. There is no doubt that the Bill rivets the shackles of it irrevocably upon our shoulders, however much its details may be varied. It is a matter of certainty that now is the time to fight for a principle, and if the opportunity is lost no recurrence can ever be expected. May I suggest that your efforts should be directed towards the formation of an effective fighting force; compromise must be thrown overboard. I am, Sir, yours faithfully,

Hatfield, Herts, June 30th, 1911. LOVELL DRAGE.

To the Editor of THE LANCET.

SIR,—It is within my knowledge that certain members of the medical profession are inclined to sympathise with Socialism and to regard with approval the Socialist proposals for the nationalisation of the medical profession. I think these gentlemen get their ideas of Socialism from a comparatively small section of the Socialist movement, consisting mainly of members of the Fabian Society and of the Church Socialist League—people who do not really represent in the least the sentiments of the great body of Socialists. It may interest some of your readers to see what a prominent Socialist, really representative of the Socialism of the masses—Mr. Ben Tillett—has to say with regard to the medical profession in relation to the State Insurance Bill. These comments show the bitter class prejudice which Socialist agitators foster among those who would be masters of the learned professions if a system of nationalisation were ever established. I am, Sir, yours faithfully,

Hammersmith, June 28th, 1911. WILLIAM BULL.

[ENCLOSURE.]

Extracts from a signed article by Mr. Ben Tillett appearing in *Justice* on Saturday, June 11th, 1911:—

I should sum up the dangers from the standpoint of the workers to be the dominance of the doctors, who in practice have been greedier extortionists than the worst of the grabbing lawyers so far as the Compensation Act is concerned. There should be a check on the doctors, and their malpractices should be punishable under similar conditions as the restrictions imposed by the Incorporated Law Society. This failing, the Board of Trade or Home Office should have power to withdraw the right to practise from those doctors who abuse their powers.

We should find some malingering under the Insurance Bill of the employers, insurance companies, doctors, and lawyers.

The "Won't Works" among the four groups of persons I have named from the standpoint of conscientious duty are many more than are the poor, wretched, half-starved creatures who may be termed "malingerers" by the sleek crowd of harpies and slugs of the social system. .....

The doctor class are making a sordid fuss over the present measure, but they have had the gain of the public charities, and have had victims to experiment on. They will have to be put in their place, and not to be the professional harpies as well as the licensed slaughterers of the human race. The maternity benefits are too small, and will merely pay the doctor's bill. .....

Already the gang of thieves in the shape of insurance touts, medical extortionists, employers' leagues and federations are "on the make." It is to be hoped the Labour Party will not be bullied or coaxed to relinquish a single benefit for the capitalists and their servants.

To the Editor of THE LANCET.

SIR,—I have received from the British Medical Association a form of pledge with regard to service under the Insurance Act. How can men be expected to pledge themselves when they know nothing of the conditions of service they will be offered? The Association should, I think, wait till at any rate the Bill is through Committee before talking about pledges. On these grounds I have declined to sign.

So far as one can see at present, the Bill will pass substantially in its present form. What will follow? Appointments on a contract basis (we may dismiss measured rate systems as too absurd for consideration—*vide* Dr. Pye-Smith's letter) will be offered by the larger Friendly Societies or by groupings of the smaller societies, or we may succeed in the Committee stage in getting this department of the Bill transferred to the local insurance committees. These appointments will be paid at a rate between 6*s.* and 8*s.* 6*d.* per annum. The men who have signed this pledge will, if they are men of honour, refuse to accept any such appointment. But the same considerations that have induced men to accept clubs at 2*s.* 6*d.*, and moreover to keep them when they have got established in practice—namely, the knowledge that if they did not take them someone else would—will force them to take these new appointments. In my own case—an industrial district with a population of about 3000 and no opposition of consequence—the appointment at 8*s.* 6*d.* would be worth £400 per annum. Is it possible to suppose that an appointment yielding a certain £400, with also the certainty of some private practice, would not soon be taken up? Think of the numbers of men working as locums and assistants, laboriously getting together a little capital before making their plunge into practice on their own account, think how they would jump at such an offer. And where should I be? I should see half my income gone at one stroke and the remainder following it in a year or two.

I ask, What can we do in anticipation of this catastrophe? There must be many thousands of doctors exactly in my position, each one considering how hard he will be hit by the new conditions, and whether he can afford to stand out or whether he must bend to the storm. To enable us to stand firm we must be assured that we shall not lose by it; we must know that if our practices are the ones to be split asunder by "blacklegs" we shall have the support, not merely the moral support but the financial support, of our fellows; in fact, we must establish a substantial fund to guarantee men against loss. Failing this, we shall be jockeyed out of our position by the various forces opposed to us. I am prepared to pay £5 5*s.* if 1000 other medical men will do the same for the expenses of a preliminary investigation into the feasibility of such a scheme. We should want a canvass of the whole Register; in many cases a personal canvass would be needed to ascertain the precise views of every man on the subject and what he would be likely to lose or gain under the Bill; and thus we could get some idea what amount of financial backing our fight would need. My idea is that if it were known that we had collected £20,000 to boycott the Bill we should hear very little further of it. I enclose my card, but for obvious reasons I do not wish my name and address published at present.

I am, Sir, yours faithfully,

July 1st, 1911. M.B. LOND.

INSTRUCTION OF SCHOOL CHILDREN IN HYGIENE.

To the Editor of THE LANCET.

SIR,—The executive councils of the National League for Physical Education and Improvement and of the National Health Society have had under their consideration Dr. Addison's Bill, which provides for instruction in hygiene and in the care of infants, and they have authorised us to express their earnest hope that the Bill may be allowed to become law.

If the health of the people is a great national asset provision for the due care of that h[illegible] is an act of national

insurance. To neglect the conditions which secure health is perilous, but the neglect which is so prevalent is due, not to heartlessness, but to ignorance. Due instruction therefore in the laws of health should not be a casual subject, but a necessary subject of education in our schools.

It is therefore in our judgment fitting that, to quote the terms of the Bill: "Each local education authority shall arrange, as hereinafter provided, that during each school term simple instruction in hygiene and the care of health, suitable to the age and understanding of the children, shall be given to all children attending public elementary schools, and, in particular, shall arrange that each girl of the age of 12 years or more shall be adequately instructed in the care and feeding of infants."

We therefore cordially welcome Dr. Addison's Bill and trust that it may receive the unhesitating support of all who desire national well-being.

Signed on behalf of the executive councils of the above societies,

W. B. RIPON.	HENRY KENWOOD.
LAUDER BRUNTON.	F. N. KAY MENZIES.
JOHN TWEEDY.	A. WELLESLEY HARRIS.
MARY SCHARLIEB.	F. LANKESTER.

Tavistock-square, London, W.C., June 28th, 1911.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—On previous occasions we have felt it incumbent upon us to reply to communications in your columns and elsewhere from the pen of Major H. C. French. Hitherto our difference of opinion has centred in what we regard as the unreasonable antipathy of Major French to the intramuscular injection of insoluble salts of mercury in the treatment of syphilis. We may say that since April 1st, when we observed a note from his pen in the *British Medical Journal*, chronicling at second-hand a death at Cairo, we have expected to see an article by him containing all the evidence that can be collected against salvarsan. In your issue of June 24th, p. 1691, our patient anticipation was rewarded.

It is not our intention to deal exhaustively with Major French's long and discursive criticism, but we feel we must take exception to a few of his statements. Like other opponents of salvarsan, he has something to say about the commercial aspects of the matter, but this by the way. His statement that the remedy was placed on the English market shortly after August, 1910, at which date "under 1000" cases had been treated by it, is grossly inaccurate. Salvarsan was not placed on the English market till after Dec. 8th, 1910, upon which date Professor Ehrlich delivered an address in Frankfort, and summed up the results obtained from the many thousand injections which had been administered during the preceding 10 or 11 months.

We have rarely come across a more egregious example of *suggestio falsi* than is contained in the following sentences: "I have previously emphasised the fact that atoxyl used in the treatment of sleeping sickness caused total blindness in 54 and partial blindness in 136 cases. Soamin and arsacetin ..... have also caused epileptiform seizures, atrophy of the optic nerve, and blindness in treating syphilis. I am not aware, however, of any fatal results as is the case with salvarsan." Now, these sentences are calculated to produce an impression upon the minds of the uninitiated that in addition to producing fatal results salvarsan is responsible for many cases of blindness. That such an idea is absolutely without foundation anyone who has studied the literature knows. The opponents of salvarsan write as though optic neuritis and optic atrophy did not occur in the course of ordinary cases of syphilis. During the last few months we have seen two cases of optic atrophy and one of optic neuritis, which had been treated throughout with mercury. If these cases had received an injection of salvarsan what a hue-and-cry their publication would have caused among the opponents of Ehrlich's remedy. As for disturbance of the sense of hearing, it is a common symptom of syphilis even when no arsenic has been exhibited. The question of fatalities is one of extreme importance, and with much effort Major French has collected 31 cases, 14 in infants and 17 in adults. Our study of the literature has led us to the opinion that some of the infants would have died in any case, whatever remedy had been employed. We do not regard the remedy as a suitable one for direct administration to young children. As for the fatalities in adults, some of them were due to errors in judgment in the choice of cases and others to a faulty technique.

If Ehrlich's careful instructions not to use the remedy in cases of degeneration of the circulatory system and brain syphilis had been followed, some of these deaths would have been avoided. It is very hard on any remedy, and on its discoverer, that it should be made the scapegoat for the errors of its administrators. One more statement we must take exception to, and that is that "syphilis, unlike cancer, sleeping-sickness, and kala-azar, is not a fatal disease." We wonder in what fool's paradise Major French has been living. Judged, of course, by the Registrar-General's returns, syphilis is not a fatal disease, for many a death directly due to it is certified euphemistically by another name. But surely Major French knows of the long series of life-destroying sequelæ that follow close in the footsteps of syphilis. It is because we regard syphilis as a most formidable disease that we advocate the administration of such a powerful remedy as salvarsan.

If Major French will for a few months make a careful use of it in suitable cases of syphilis we are confident he will be well pleased with the results, and will regret having written such an alarmist article, and one so calculated to create prejudice in the minds of those who, like himself, have had no personal experience of salvarsan.

We are, Sir, yours faithfully,

G. STOPFORD-TAYLOR.
R. W. MACKENNA.

June 26th, 1911.

To the Editor of THE LANCET.

SIR,—THE LANCET of June 24th contained a paper on the above subject by Major H. C. French, R.A.M.C. In my opinion his conclusions are erroneous, and appear to be based on a very small personal experience and an inaccurate interpretation of second-hand evidence.

In the first paragraph he states that "the drug apparently acts very much in the same manner that iodide of potassium does, and in early syphilis is not an actual curative agent." It has, however, been frequently shown that potassium iodide has little or no action on the Wassermann reaction on the treponema pallidum, whereas salvarsan produces a negative Wassermann in a large percentage of cases[1] and causes a very rapid disappearance of the treponema pallidum. On what practical experience does Major French base his opinion that "injections of salvarsan are not of greater value than administration of arsenic by the mouth"?

In the fourth paragraph Major French writes: "Up to August, 1910, there were under 1000 cases treated (by salvarsan), and it was placed on the English market very shortly afterwards." The foundation for this statement is based on an extract from an article by Bohac and Sobotta which was reproduced in Bresler's book in which these authors state that they have not found records of some effects that they have related "in the 1000 or more cases *published*." Now Ehrlich definitely states in "Die experimentelle Chemotherapie der Spirillosen" (p. 139), which was written before Oct. 5th, 1910: "I have before me the reports on over 9000 cases treated with salvarsan," and the drug was not placed on the the market till more than two months after this statement was written. Major French then calls to his aid the "31 deaths within a year"—a ghost which has been laid for many months and which might, I think, be permitted to rest in its dishonoured grave. Most of the cases quoted by Major French are discussed in the review of the subject by A. Manuel and myself.[2] In most of the few fatal cases either the technique was faulty or the contra indications were not observed. Some were desperate cases in which death occurred in spite of and not because of salvarsan.

Major French complains that Gibbard and Harrison were vague as to the period that elapsed between the injection of salvarsan and the disappearance of lesions in their cases. These authors reported the average length of time for disappearance of symptoms in 97 cases of primary or secondary syphilis, besides referring to 33 cases intractable or intolerant to mercury in which salvarsan produced a rapid change for the better. On carefully reading through their paper[3] it

[1] Manuel and Bayly: Practitioner, June, 1911.
[2] Ibid.
[3] Gibbard and Harrison: THE LANCET, March 18th, 1911.

will be seen that practically all their cases are accounted for, and I am therefore at a loss to understand what Major French has to complain of in their valuable contribution.

Regarding Major French's remarks on the injection of 0·2 grm. at fortnightly intervals, entailing a stay in hospital for six weeks, the paper in question gives no authority for his deduction that the patients remained in hospital during the whole of their treatment. I have since inquired on this point of the officers concerned, and find, in fact, that the detention in hospital was for only 24 hours after each of these small doses. Major French infers that Gibbard and Harrison confused the diagnosis by local treatment of the sores, but these officers state[4]: "In all cases of primary sore T. pallida were found in great numbers previously." I have been unable to find any justification for the statement that Gibbard and Harrison "claim 90 per cent. cures." On the contrary, these officers merely stated the number of relapses up to date and refrained from any comment.

As regards the "ocular casualties" and "labyrinthine disturbances" mentioned by Major French, Ehrlich categorically states[5] that no case of blindness has been reported to him, and that, despite penetrating research, it has not been possible for him to run one of these rumoured cases to earth. Professor Neisser in the Cavendish lecture (June 26th) stated that in his opinion the rare auditory symptoms were due to the disease and not to salvarsan.

It is impossible in a short letter to fully criticise Major French's paper or to reply in detail to all his arguments and conclusions. Dr. Alexander Manuel and myself have reviewed the matter at some length in the June number of the *Practitioner*, where I think that answers will be found to most of Major French's arguments. May I here point out that through a printer's error the percentage of fatalities was in the *Practitioner* placed at 2 per cent. instead of 0·2 per cent.? I cannot see the force of Major French's references to atoxyl, soamin, &c., in connexion with this subject, as these preparations differ as essentially from salvarsan as chloral does from chloroform.

Will Major French produce evidence that half a dozen workers have definitely abandoned the routine use of salvarsan after intravenous administration in 100 cases? I am still waiting for definite opposition to salvarsan based on practical experience of its use in a considerable number of cases. So far the English critics of salvarsan (Mr. Ernest Lane, Dr. C. F. Marshall, and Major French) appear to have relied either on very slight experience of the intramuscular method or on the careful gleanings from the reports of the few opponents and the remarkably small casualty list. As time passes even this very short list of casualties and serious after-effects is rapidly becoming proportionally less and less, and Professor Neisser is convinced that salvarsan should be given as a routine treatment in every case of syphilis and parasyphilis that does not present well-marked contra-indications. He considers salvarsan less harmful and dangerous than a prolonged course of mercury. Major French's conclusions, therefore, that salvarsan "is far inferior to mercury" and that "it is quite unjustifiable to use salvarsan in place of the judicious use of mercury in average cases of syphilis" appear to have been arrived at on insufficient data, and are not borne out by the large mass of evidence now at our disposal.

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY,
Pathologist to the London Lock Hospitals, &c.

To the Editor of THE LANCET.

SIR,—Referring to the paper by Major H. C. French, R.A.M.C., entitled, "Salvarsan ('606') and Mercury in the Treatment of Syphilis," which appeared in THE LANCET on June 24th last, we wish to correct an inaccuracy appearing on p. 1691—viz., "I understand that it was originally stated that 'salvarsan' would not be placed on the market until 20,000 cases had been treated by it. Up to August, 1910, there were under 1000, and it was placed on the English market very shortly afterwards."

The true facts of the case are as follows: "Salvarsan" was only placed on the market generally (not only on the English market) on Dec. 15th, 1910, by the Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany, after 60,000 doses had been supplied free of charge for testing purposes, with which about 40,000 cases were treated.

We beg to add that we have the authority of his Excellency Professor Dr. Paul Ehrlich for making the above statement, and remain, Sir, Yours faithfully,

Pro MEISTER, LUCIUS, AND BRÜNING, Limited,
St. Mary Axe, London, July 5th, 1911. ERNEST SCHOLL.

[4] Ibid., p. 729.
[5] Ehrlich and Hata: Chemotherapy, 1910.

BRIGHTON SCHOOL CLINIC: THE ACTION OF THE HOSPITALS IN RESPECT OF DENTISTRY.

To the Editor of THE LANCET.

SIR,—In your annotation on the Brighton School Clinic on June 24th you remark on the subscriptions to hospitals for the purpose of obtaining letters to be given by the school doctor to school children requiring medical or surgical treatment. The honorary medical officers of all the hospitals have objected to this course, and the boards of management have all passed the following resolution:—

> That after the year 1911 the hospitals shall, except in special cases, decline to treat school children attending the primary schools of the Brighton and Hove education authorities, and found, on medical inspection by the medical officers of the said authorities, to be suffering from otorrhœa, enlarged tonsils, adenoids, errors of refraction, skin diseases, or defective teeth.

The Brighton education authority will thus have to arrange to have these cases dealt with in future without making use of charitable institutions. It is hoped that the honorary medical officers of hospitals in London and other towns will also refuse to do the Government's work for nothing.

I am, Sir, yours faithfully,

WALTER BROADBENT, M.D. Cantab., M.R.C.P. Lond.
Brighton, June 29th, 1911.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—I am greatly interested in Dr. Edward Mellanby's very illuminating article on this subject which you publish in your last issue under the title "A Short Chemical Study of a Case of Cyclic Vomiting, with Some Remarks on Creatinuria and Acidosis." It deals with matters of considerable importance and beyond the scope of this communication, but there are one or two points which may well be commented upon at this stage. I think Dr. Mellanby is mistaken in believing that the general trend of opinion is in favour of ascribing to acid intoxication the symptoms which characterise cyclic vomiting, and, one may add, post-anæsthetic vomiting, the pernicious vomiting of pregnancy, and the other members of this closely allied morbid group. In recent years this view has been opposed in many articles and discussions. Rochford in 1904 attributed cyclic vomiting to an auto-intoxication due to incompetence of the liver, and strongly expressed his opinion that the presence of acetone, diacetic acid, and β-oxybutyric acid was in no way connected with its etiology. Leonard Guthrie at the Sheffield meeting of the British Medical Association in 1908, and again in discussion on a case shown before the Royal Society of Medicine in March, 1911, was of opinion that the symptoms of this condition could not be attributed entirely to acid intoxication, and Bainbridge, in the discussion which followed Guthrie's paper at the British Medical Association's meeting, pointed out that there was no proof available to show that acid intoxication was concerned in the production of any condition ascribed to it except diabetic coma. Hunter, in his article on delayed chloroform poisoning in Allbutt and Rolleston's "System of Medicine," also states his belief that the toxæmia in these conditions is due to something more than the products of fat katabolism. These are only a few examples from the recent literature on the subject, and I think they show that there is an increasing tendency to disparage the importance of acid intoxication as a cause of cyclic vomiting and allied conditions. Dr. Mellanby does me the honour of quoting my suggestion that the alimentary canal may be the source of a toxin or toxins which cripple the liver, weakening its powers of dealing with fats and so producing an acid intoxication. His article certainly helps to strengthen the first part of the hypothesis—namely, that the alimentary canal is the source

of the toxin or toxins. With regard to the second part, which ascribes to acid intoxication the symptoms of the condition, I should like to take this opportunity to say that I have long thought it untenable, and am quite prepared to accept the conclusion which Dr. Mellanby has arrived at as the result of his investigation, that cyclic vomiting is in no sense an acid intoxication. The presence of the acetone series in the urine is no more than a somewhat unreliable indication of a more profound lapse from metabolic rectitude in which the liver plays the chief part.

Even in diabetic coma it is quite legitimate to doubt the importance of the acidosis, since diabetic patients will gradually sink into coma and die, even when enough alkali has been administered previously to render the urine strongly alkaline for several days before death, and experimental injection of each of the known bodies of the acetone series fails to reproduce the symptom-complex known as diabetic coma.

I am, Sir, yours faithfully,

Queen Anne-street, July 3rd, 1911. FREDERICK LANGMEAD.

THE DECLINING BIRTH-RATE.

To the Editor of THE LANCET.

SIR,—In Mr. F. E. Fremantle's Edward Jenner lecture on "The Declining Birth-rate," published in THE LANCET of April 22nd, we read (p. 1061): "The chief factors, then, in the decline of the birth-rate are mechanical and logical. The mechanical factors just named are in reality only methods. It is the following logical factors that are the ultimate cause." Mr. Fremantle then gives as the logical factors (though what he quite means to connote by "logical" is not very obvious) three conditions of married life which may be shortly summarised as: 1. Child-bearing at long intervals in the interests of health. 2. The interferences to child-bearing caused by social or conjugal obligations. 3. The desire for economy.

Surely, to any honest and impartial student of the present-day conditions of married life the most potent cause of the decline in the birth-rate of Great Britain, except perhaps among the very rich and the very poor, is *compulsory barrenness*. If Mr. Fremantle will pardon me for saying so, I think he might have made his lecture more illuminating and no whit less scientific if he had first read and considered the remarkable preface to Mr. George Bernard Shaw's play *Getting Married*. Therein he would have had the opportunity of learning the indubitable fact that the class of women from whom the nation has perhaps most to expect—i.e., that class generally termed the "middle classes"—is from a variety of causes, all of which are fully discussed by Mr. Shaw in his inimitable style, opposed to the law which involves "the saddling of the right to a child with the obligation to become the servant of a man."

The medical profession can do all that Mr. Fremantle suggests, but until the medical profession throws its influence on the side of those who are striving to attract public attention to the lamentable state of the English marriage and divorce laws very little hope can be reasonably entertained that the fall in the birth-rate in the British Isles is going to stop. Mr. Fremantle also advocates that all aids to the prevention of conception "should be relentlessly pursued and checked by the law." Does he propose that a married couple should cease from sexual relationship if for any reason, and indeed there are many, conception should be highly undesirable? If Mr. Fremantle does propose that, and it is difficult to construe any other meaning to his remark, does he reflect on all that is almost sure to follow upon such procedure? It is inconceivable that he should not have come across many cases of chronic mental disorder which are directly attributable to sexual repression, especially so in married persons separated from each other either through the rough calls of duty or business, as well as among men or women who have recently lost either wife or husband.

Further, I venture to believe that Mr. Fremantle greatly overrates the disorders which are indubitably referable to the prevention of conception; the production of abortion is another thing altogether, and no doubt under this heading many disorders can be enumerated. An absolutely impartial investigation of data on the dangers attributable to the prevention of conception would lead one to suppose that there is only one serious disorder to be feared from the practice of preventing conception—i.e., hysteria in certain forms.

In conclusion, I would venture to assert that the propagation of a sound systematic instruction in sexual hygiene, coupled with a thorough revision of the laws connected with marriage and divorce, will do more to correct the decline in our birth-rate than any of the suggestions put forward by Mr. Fremantle in reference to the suppression of the mechanical means of preventing conception or the *modi operandi* of producing abortion.

I am, Sir, yours faithfully,

OWEN A. R. BERKELEY HILL, M.A., M.B., Ch.B. Oxon.

Saugor, Central Provinces, India, May 11th, 1911.

ANÆSTHETICS IN INTESTINAL OBSTRUCTION: THE VALUE OF GASTRIC LAVAGE.

To the Editor of THE LANCET.

SIR,—The possibility of immediate or gradual suffocation or of ensuing broncho-pneumonia in these cases is well known, but I have some reason to think the extent of the danger is not always realised. Unless special measures are taken there is this dilemma—that under a light anæsthesia rigidity and straining make the operation prolonged and difficult, and tongue retraction and laryngeal spasm entail asphyxia and cardiac dilatation; whilst under a deep one ejection of the stomach contents may still go on, and as cough reflex is abolished the patient is likely quietly to be drowned.

It is, of course, necessary for the anæsthetist to be very watchful, and it is the usual practice to keep the head low and on one side, with the opposite shoulder raised, the mouth open, and sponges ready. As Mr. Colt in his letter in your columns on June 17th also mentions tongue forceps, I would point out that it is a common and disastrous mistake of nurses and others to push the lower jaw forwards or pull out the tongue whilst a patient is in the act of vomiting. By so doing the natural closure of the larynx is interfered with and the risk of inhalation of fluid increased. This should not be done until ejection has ceased and after clearing the pharynx. If breathing should be dangerously arrested during ejection it would, I believe, be safer to perform laryngotomy. It would certainly be hazardous to leave a deeply anæsthetised patient in charge of a nurse under such circumstances. If the Trendelenburg position be adopted during operation fluid is apt to run down continuously, forming a pool in the pharynx, which cannot be kept clear even by frequent sponging.

Preliminary lavage of the stomach, as remarked by Mr. Colt, often proves a failure, but I can hardly agree that if properly done it is a severe strain on the patient and causes much pharyngeal irritation. This should at least be carried out, even when vomiting has not been a marked symptom. I have recently drawn attention[1] to the importance of doing so, at any rate when the operation has been concluded. Sometimes a stomach-tube may be left in and connected to a long tube for syphonage, but it may interfere with respiration or fluid may well up around it, so there is no complete security against inhalation.

In a paper contributed to one of your contemporaries in 1908 I suggested the advisability of preliminary laryngotomy or tracheotomy to obviate these difficulties, and Dr. Dudley Buxton[2] has described the method at length and urged its employment. Laryngotomy can be done very quickly under local or light anæsthesia; it should cause little bleeding and no shock; the wound should heal in a few hours. The pharynx and upper larynx are cocainised and well packed with gauze all round the stomach-tube.

There are no further difficulties and dangers in regard to the respiration or the anæsthetisation, and the operator is not hurried and disturbed. In short, the advantages of the proceeding are as great as in such operations as removal of the tongue, and I trust it may be more generally adopted than is the case at present.

I am, Sir, yours faithfully,

Chelsea, S.W., June 19th, 1911. J. D. MORTIMER.

[1] THE LANCET, June 17th, 1911.
[2] Brit. Med. Jour., April 23rd, 1910.

THE EYESIGHT OF SAMUEL PEPYS.

To the Editor of THE LANCET.

SIR,—I have read with interest the address of Mr. D'Arcy Power to the Samuel Pepys Club. As a literary achievement it shows both industry and ingenuity, but the arriving at a definite prescription for Samuel Pepys, Esq., seems to suggest that the modern quack method of "diagnosis and treatment by correspondence" need no longer be viewed with professional disfavour. The ease with which a specialist, on hearing Pepys' symptoms, at once prescribed "+2 D. or +2·5 D. convex glasses" is very striking, as is also the facility with which Mr. Power himself added +0·50 cylinders axis 90°. Of course, Samuel Pepys cannot try these spectacles, and there is therefore no means of bringing home to the prescribers any possible error arising out of the "correspondence" method, but the whole episode casts a somewhat lurid light on the specialist and his work. I am not well enough versed in optics to criticise the theoretical accuracy of the prescription, but it would really be interesting to know on what grounds the "axis 90°" was arrived at in the unavoidable absence of the patient; it seems "uncanny," if it is not a little joke.

I note that Mr. Turlington advised Pepys against using "reading glasses which do magnify much," and that Mr. Power characterises this advice as "superlatively bad, for he was clearly recommending Pepys to use concave glasses when in reality he needed convex ones." On the face of it this is not so clear. I understand that concave glasses do not magnify at all, but rather diminish the size of an object. There is surely significance in Turlington's word "much," and it might be more fair to interpret his advice as a wise recommendation to use the lowest convex glasses that the patient could read with, rather than indulge in the luxury of much magnification. The literal terms of the advice can hardly be said to suggest concave glasses.

Incidentally, it does seem a pity, as Mr. Power suggests, that Mr. Pepys did not "sit upon his tubes and crush them," seeing that a revolution of the laws of dioptrics was so imminent, and depended with a fair amount of certainty on such a likely accident. It looks as if Providence had missed a splendid opportunity.

I am, Sir, yours faithfully,

Liverpool, June 22nd, 1911. A. ROSS CARMICHAEL.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—In your annotation in THE LANCET of May 13th with reference to "M.B.'s" letter *re* the Indian Medical Service you rightly state that it is Lord Morley's disastrous suggestion to cut down the civil appointments at present held by the Indian Medical Service that has so harmed the service, but at the same time you seriously underestimate the bad pecuniary emoluments of the Indian Medical Service. As an example of the small opinion the Indian Government have of the worth of their medical men, the Royal Engineers at home draw less pay than officers of the Royal Army Medical Corps of corresponding ranks at home. In India the reverse is the case, and not only this, but the R.E. officer draws more than an I.M.S. officer of corresponding rank. You must remember that an R.E. gets his professional education at Government expense. An officer of the Royal Army Medical Corps draws actually *less* pay in India than while serving at home (officers of the Indian Medical Service draw slightly more pay than the Royal Army Medical Corps). Eighteen months ago the pay of the Indian army officers was raised and not the Indian Medical Service, so that now these officers draw practically the same pay as the Indian Medical Service in spite of not having had the previous long expensive education a doctor has to undergo.

When an R.E. officer goes into civil, he draws considerably more pay than in military employ. An I.M.S. officer, on the other hand, draws 50 rupees less. For many years a civil surgeon will make practically nothing in private fees. Also, there is such a block in civil now, that one cannot get in under about eight years' service.

Another crying grievance of the Indian Medical Service is that the cadre is kept so small that leave is extremely hard to get. One is entitled to two months' privilege leave every summer, but, as a matter of experience, one is lucky to get it on an average every other year. Leave home, too, is extremely hard to get. Officers who have been serving for over five years find they are unable to get leave owing to the shortage. Then again the number of transfers a junior officer gets is nothing short of a scandal. One constantly hears of junior officers having 12 or 13 transfers in his first three or four years.

I am afraid I have sent rather a long letter. You seemed surprised that "M.B." should state that living has gone up 100 per cent. and the purchasing power of the rupee down 50 per cent., but this is well recognised out here. Polo, shooting, &c., are rapidly becoming the rich man's sport as in England.

I am, Sir, yours faithfully,

May 31st, 1911. I.M.S.

THE BUBONIC PLAGUE IN EGYPT IN 1911.

To the Editor of THE LANCET.

SIR,—The apparent indifference of the authorities and of the public to the ravages of the plague in Egypt is very singular. From the commencement of this year to June there have been more than 1400 cases, compared with some 700 in the corresponding period of 1910. For the week ending June 3rd the returns indicate a slight diminution in the number of cases, perhaps owing to the weather, but the innumerable rats in the villages are probably becoming more universally affected. The provinces which this year have suffered most severely are Assouan, with 491 cases, of which 307 proved fatal; Keneh, 505 cases, 392 fatal; and Assiout, 186, of which 93 terminated fatally. The type in some places is most virulent. Last December a native sanitary officer, despatched to endeavour to combat an outbreak in a village in the Delta, caught the infection the day after his arrival and died within 24 hours. This failure to wage successful warfare against the plague is due to the attempt to try natives in posts previously assigned to Europeans. In the sanitary department in country districts, unless British officials are augmented in number and authority, and thus certain necessary precautions and cleansings enforced upon the fellahin, a recrudescence of the plague, with its attendant misery and injury to the tourist season, is much to be dreaded.

I am, Sir, yours faithfully,

June 24th, 1911. TRAVELLER.

A YEAR'S COST OF RUNNING A MOTOR-CAR LIMOUSINE COMPARED WITH THAT OF A BROUGHAM.

To the Editor of THE LANCET.

SIR,—A year ago I changed my brougham for a motor-car. The brougham, two horses and a coachman, and all other expenses, including all renewals, cost on an average £210 a year. The mileage was estimated at 4000 = 1*s.* 0½*d.* per mile. The carriage was used for the purposes of the practice only, one horse in the morning and the other in the afternoon. The initial cost of a 15 h.p. Daimler Limousine, ready for the road, with spare wheel and all accessories, was £543; the initial cost of brougham, two horses, harness, &c., would be nearly £300. The first year's expenditure on the car, including chauffeur (£90), insurances, rent, rates, petrol, new tyres, and all other expenses, amounted to £201 2*s.* 1*d.*, to which £108 12*s.* 2*d.* must be added for depreciation (i.e., 20 per cent. of initial cost); the total expenses for one year were, therefore, £309 14*s.* 3*d.* The miles run in the year were 5203, of which 1128 were for pleasure and 4075 for professional purposes. The cost of running per mile works out at 1*s.* 2¼*d.* Therefore £241 19*s.* may be stated as the cost of the car for one year to the practice as compared with £210 for the brougham. The total petrol used for all purposes was 294 gallons, or 17⅝ miles to the gallon. As 500 miles were run with a defective carburetter which gave only 10 miles to the gallon in the town with frequent stoppings, and only 13 miles in the open country, and as on a holiday 816 miles were run on 35 gallon

(= 23½ miles to the gallon), it is obvious that the mileage per gallon of petrol now will be about 20 in the town, in which the motor runs about 14 miles a day and stops and starts about 30 times.

The tyres on the steering wheels are an expensive item. The four wheels of the car and one spare wheel were fitted with Continental tyres with the following results:—One front wheel plain tyre is still running at 5293 miles; one front wheel plain tyre burst at 5160 miles; one rear wheel studded tyre split at 1851 miles; one rear wheel studded tyre ran only 2565 miles when most of the studs were out and the cover was worn through. Avon tyres were then tried. One rear wheel studded tyre ran only 2245 miles when most of the studs were out; it was then retreaded and put on a front wheel. A rear wheel cross-grooved Avon has run only 1300 miles and is now off for repairs, it having a big cut in it as well as a patch of the canvas exposed. Other tyres of the same makes gave like results. Many of the streets of my town are paved with rough cobble setts, which I think pull out and wear the studs quickly. I am therefore using now plain tyres on the back wheels as well as on the front. Altogether I spent £30 6*s*. 7*d*. on tyres in the twelvemonth.

The only mechanical breakdown in the year was caused by the breaking of a ball race which prevented the use of the car for a day and a half. It occupies the chauffeur two to three hours each day to keep the car smart and in running order. The great advantages of the car are obvious—viz., greater speed, and therefore saving of more time each day for either leisure or study. Ease and comfort in travelling, and also more light in a Limousine. The rapid motion through the air is exhilarating, whilst trundling along in a brougham is somewhat depressing. The car never tires as horses do. Long journeys do not upset the day's work as formerly, since they can be taken in so short a time.

The advantages of a Limousine over a landaulette or open body are: No need to alter one's dress nor to wrap up in cold or wet weather; with the windows down between the body and the chauffeur, no draught, yet more air and more light than in a brougham. All the parts being fixed, they do not rattle loose as in a landaulette, nor does dust blow into the body or on to the occupant. Then there is the pleasure and health derived from touring and the advantages of having a rapid mode of travelling at one's command at any time during the day or night. With a silent Knight engine the absence of vibration and noise is a great advantage to a doctor and his patients. I should say that to a busy man an experienced, steady, and trustworthy chauffeur is a *sine quâ non*.

I am, Sir, yours faithfully.

June 30th, 1911. F.R.C.S. ENG.

MEETING OF CANADIAN MEDICAL ASSOCIATION IN MONTREAL.

(FROM A SPECIAL CORRESPONDENT.)

THE forty-fourth annual meeting of the Canadian Medical Association opened on May 7th. All the sessions were held in the Anatomical Laboratory of the new medical building of McGill University, Montreal, except that the address in medicine was delivered in the gallery of the Art Association.

At the general meeting the President-elect, Dr. GEORGE E. ARMSTRONG, of Montreal, was installed, and addresses of welcome were given by Dr. GUERIN, mayor of Montreal, himself a medical man, and by Dr. PETERSON, Principal of the University. Some business matters were attended to and the report of the Milk Commission of the Canadian Medical Association was read.

On the afternoon of Wednesday the section meetings began. The meetings of the section on Preventive Medicine were especially interesting, and it may be said that a symposium in this section on Typhoid Fever and Water-supplies was a conspicuous success. On Thursday morning a general meeting was again held in the Department of Anatomy, when the address of the President, Dr. G. E. Armstrong, was read. Unfortunately, Dr. Armstrong had had to leave the meeting on the previous day on account of illness, and was not sufficiently recovered to deliver his own address, which was therefore read in his absence by Dr. A. HUTCHINSON, of Montreal.

Presidential Address.

The address was largely concerned with a retrospect of the history of the rise and development of the association in Canada. A portion was devoted to a consideration of the Roddick Bill for Dominion registration, which Dr. Armstrong characterised as the most forward medico-political question before the profession in Canada to-day. He hoped that with the adoption of the Act before long the English-speaking provinces would unite on a uniform standard of matriculation, although Quebec would have to remain outside on account of different educational methods. Referring to the value of research work Dr. Armstrong declared that English researches of a century ago were the profitable milch cows of foreign nations to-day. In discussing the pure water problem Dr. Armstrong stated that in his opinion in such a country as Canada, with its abundant water-supply, it was a reproach to any municipality, great or small, to have water-borne diseases. The housing problem was next dealt with, and it was pointed out how much it had been intensified in Montreal and other cities by the introduction of swarms of immigrants, many with low standards of living and general habits which did not tend to healthy bodies, sound minds, or good citizenship. There ensued slum life and an inevitable degeneration amongst the third and fourth generations of city dwellers, with the result that a large proportion of people became charged upon the State. He therefore urged that the Canadian Medical Association should work to demonstrate to municipalities that money expended in providing the working classes with better houses, wider and better aired and lighted streets, would be infinitely well rewarded in a lesser expenditure for police-courts, prisons, asylums, and hospitals, thus inverting the principle that "The means to do ill deeds makes ill deeds done." Canadians had no excuse for repeating the mistakes of older civilisations and in this way they could best aid the churches and the temperance and moral reformers.

Address in Surgery.

Dr. A. PRIMROSE of Toronto delivered the address in surgery. The speaker said that being a young country something of the spirit of the pioneer settlers had been inherited, and thus Canadian medical men were more ready to develop along lines which might be new and revolutionary in character. The consequence of this adaptability and willingness to learn had been that nowhere was work done in surgery with more general efficiency than could be found in the hospitals of Canada to-day. Dr. Primrose, like Dr. Armstrong and all the principal speakers, both at the McGill celebrations and at the meeting of the Canadian Medical Association, paid heartfelt tribute to the memory of Dr. James Bell of Montreal, who died somewhat suddenly a few weeks ago. His great merits as a surgeon, a man, and a citizen were referred to in fitting terms. Dr. Primrose, while allowing that conservatism in surgery was good, said that pure prejudice often passed as conservatism, and therefore care should be taken that no prejudices were harboured and that conservatism should in no way be allowed to hinder better judgment. The speaker pointed out that in all ages the advance of science had been hampered by prejudice, and that even in these enlightened times prejudice was not dead. The technique of Lister, for example, did not make the headway that was its due, on account of the opposition of some of the distinguished medical contemporaries, and it was a remarkable circumstance that foreign surgeons had been more quickly convinced of the great value of antiseptic treatment than had those of his own country. Dr. Primrose eulogised Lord Lister as the almost perfect type of the logical scientific mind. He urged that medical students should have a prolonged and efficient course of instruction in preliminary science, and opposed the view held by many that such training was unnecessary. Reverting again to the question of conservatism in surgery Dr. Primrose said that although a conservative attitude was to be commended it should be that type of conservatism which was tempered with ability to use calm and deliberate judgment in determining what was best for the patient; and when new light was thrown on some obscure problem medical men should be ready to abandon any erroneous ideas which might hitherto have been held, and be prepared to advance, looking for no finality in present-day methods, but always endeavouring to attain the ideal.

Gall-stone Disease.

A paper on the Surgical Treatment of Gall-stone Disease was contributed by Dr. WILLIAM J. MAYO of Rochester, Minn., U.S.A. Dr. Mayo said that in reviewing 4000 operations performed by him and his brother he had been impressed with the fact that the mortality was due to the complications incident to the disease rather than to the removal of gall-stones from the otherwise normal gall-bladder. It was in the early period that operation furnished an easy, safe, and efficient cure. Cholecystostomy with temporary drainage of the gall-bladder to the surface was the operation preferred, because it saved this valuable organ for future functioning. The danger of re-formation of gall-stones after this operation was exceedingly small. In the class of cases in which the gall-bladder was contracted down upon a mass of stones secondary carcinoma was likely to develop. The danger of carcinoma alone was five times as great as the mortality following operations for the relief of simple gall-stone disease. So long as the stones were confined to the gall-bladder the trouble remained localised in an organ which was not essential to life, but with the entrance of stone and infection into the deep duct of the liver two fundamental organs which were essential to life were liable to be involved in the process—namely, the liver and the pancreas. Stones in the common duct not only impaired the health of the patient, but complications directly threatening life might arise at any time. In the Mayo brothers' 4000 operations the average mortality was 2·75 per cent. In 2920 of these the disease was local and confined to the gall-bladder and cystic duct. The operative mortality was 1·8 per cent. In 2165 of these cystostomy was performed, with a mortality of 1·5 per cent. In 755 cases cystectomy was performed, with a mortality of 2·4 per cent. In 492 cases in which the common duct was involved operation resulted in an average mortality of 8 per cent., a mortality which depended not so much upon the operation itself as upon the extent of involvement of the liver and pancreas, and the bad general condition of the patient. Pancreatitis as a complication occurred 359 times in the 4000 cases.

Address in Medicine.—Work in the Sections.

The address in medicine was delivered by Sir JAMES BARR.

Three symposia were held, one on acute poliomyelitis, one on temperature in the puerperium, and one on typhoid fever and water-supplies. The latter was very interesting and instructive, and its initiation was due to Dr. T. A. STARKEY, professor of hygiene at McGill University, and chairman of the Section of Preventive Medicine. The subject of typhoid fever was discussed from every standpoint, and the important point urged by the chairman was generally conceded, that in epidemics of typhoid fever there are usually, if not always, many cases of typhoid-like infections which are not true typhoid fever—that is, do not react to the Widal test. Nevertheless, such cases constitute a menace to a community, because if not looked after they will spread. This recognition of the typhoid-like infections is important. Mention might be made of many other excellent and valuable papers read in the different sections did space permit. As with the opening of the new medical building of McGill University, the hospitality of those responsible for the arrangements of the Canadian Medical Association was bounteous. Garden parties, teas, receptions, and excursions were the order of the day and evening, and as the weather was fine were thoroughly appreciated by the medical visitors, some four hundred in number. An especially pleasing feature of the general meeting was the presentation of a bound illuminated copy of the first issue of the *Journal* of the Canadian Medical Association to Dr. Andrew Macphail for his energy and great assistance in establishing this publication.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh and the National Insurance Bill.

THE following resolutions with reference to the National Insurance Bill were passed by the Royal College of Physicians of Edinburgh at a meeting held on June 27th:—

1. That the medical profession should be adequately represented on—(*a*) the Insurance Commission; (*b*) the Advisory Committee; (*c*) the Local Health Committees.

2. That "medical benefit" and "maternity benefit" should be administered by the Local Health Committees and not by "approved societies."

3. That in respect of the administration of "medical benefit" the "arrangements with duly qualified medical practitioners" made by the Local Health Committees should be such as to admit of free choice of the medical practitioner on the part of the insured person; and that in respect of the administration of "maternity benefit" the like free choice of medical practitioner or midwife on the part of the person receiving "maternity benefit" should be admitted.

4. That it be enacted, that the drugs and medicines supplied shall be of the standard required by the British Pharmacopœia, and that the dispensing of prescriptions shall be carried out by legally qualified persons.

5. That in respect of the grant of subscriptions and donations to hospitals and other charitable institutions, contemplated in Clause 17 of the Bill, power should be given to Local Health Committees to grant subscriptions or donations to hospitals or other similar institutions.

6. That in "maternity cases" attended by a midwife, the Local Health Committee should be empowered to pay for the attendance of a medical practitioner should such attendance be called for by the midwife in accordance with the rules governing her practice.

7. That the capitation sum of 6*s*. which has been suggested for "medical benefits" is inadequate to secure the standard of medical attendance and drugs which is essential.

8. That in respect of the deposit contributor class, which will consist of members other than the picked lives of the friendly societies, a higher remuneration for medical attendance should be provided than in the case of those insured through Friendly Societies.

9. That the "medical benefits" under the Act be limited to persons whose average income from all sources does not exceed £2 per week.

Aberdeen Asylums.

In the annual report of the General Board of Commissioners in Lunacy for Scotland, the comparative absence of tuberculous disease in the causation of death in the Aberdeen Royal Asylum is specially referred to, and is ascribed to the satisfactory hygienic conditions in which the patients are placed, and to a suitable and abundant diet. During the year an old man of 90 died, who had been an inmate of the asylum for 68 years, probably a record residence. A considerable reduction has taken place in the use of restraint in the treatment of patients, and the efficiency of the medical treatment is commented on in the report in laudatory terms. In the Aberdeen City Asylum the cleanliness and brightness of every section of the institution are noted. The boarding-out of patients who no longer need the expensive and elaborate provisions of asylum care is receiving the attention of the Aberdeen parish council. As a result of reluctance on the part of relatives to consent to such examinations, post-mortem verification of the cause of death is in extremely low proportion. Provision of cottages for married attendants, it is hoped, will result in the retention of a trustworthy and well-behaved class of men. This is a most desirable aim, as three nurses and two attendants have recently been dismissed for ill-treatment of, or roughness to, patients. The management of the institution is regarded as capable and conscientious. In the Aberdeen county district there has been an increase of 19 insane persons, in Inverness an increase of 13, and in Shetland of 17. None of these increases can be attributed to increase in population, and the last constitutes an unusual increase in a small county with a falling population. Possibly some change in local administration may explain the increase.

July 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Bill: a Deputation to the Local Government Board.

THE committee of the Irish Medical Association appointed to wait upon Mr. Lloyd George reported to the meeting of practitioners held in Dublin on June 30th that the Chancellor of the Exchequer had referred it to the Irish Local Government Board, which would report to him its demands. Accordingly, on June 30th, the deputation met the three Commissioners of that Board in Dublin, and a long discussion took place. Apparently the Irish Board advised the Chancellor in reference to the Irish portion of the Bill and the Commissioners evidently supposed that all that was to be done was to increase the salary of the dispensary medical officers working the insurance scheme by the simple expedient of adding 2*s*. or 3*s*. per insurance patient per annum to the pay of the dispensary officers. They seem to have overlooked the fact that in Ireland, out of the 2724 members of the medical profession, about 810, or less than one-third, are dispensary

medical officers, and that in the towns, especially the industrial ones, such a scheme would be hopeless, for it would be an impossibility for the dispensary medical officers to do all the work; it would be grossly unfair to the other medical men in these towns, and in the sparsely populated poorer districts no more patients would be added to the dispensary medical officer's list, for practically he has to attend them all at present. Further, it must appear that the Local Government Board in Ireland thinks that if the scheme passes it would itself be the controlling authority, a policy that would be resisted. Finally, the Commissioner who presided admitted that they had never thought of the question of the voluntary hospitals in relation to the scheme.

The Medical Profession of Ireland and the National Insurance Bill.

A mass meeting of the medical profession in Ireland was held on June 30th in Dublin to discuss the relation of the National Insurance Bill to the interests of medical men. Although less than a week's notice had been given of the time and place of meeting, medical men attended from all parts of the country. The resolutions proposed and passed were based on the results of a referendum undertaken by the Irish Medical Association. They were as follows:—

1. That this mass meeting of the medical profession in Ireland approves of the following: (1) A total income limit of £2 a week for those entitled to medical benefit; (2) free choice of doctor by patient, subject to consent of doctor to act; (3) medical and maternity benefits to be administered by Local Health Committees and not by Friendly Societies; (4) the method of remuneration of medical practitioners adopted by each Local Health Committee to be according to the preference of the majority of the medical profession of the district of that Committee; (5) medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.
2. This mass meeting of the medical profession in Ireland approves—(*a*) That at least one-fourth of the Committee be medical practitioners, and statutory recognition of a local Medical Committee representative of the profession in the district of each Health Committee; and (*b*) that a special Insurance Commission be instituted for Ireland.
3. That in the event of a satisfactory settlement not being arrived at under the main conditions suggested by the above, we are prepared to refuse to administer the medical and maternity benefits under the National Insurance Bill.
4. That the Committee of Council of the Irish Medical Association and the Irish committee of the British Medical Association be appointed an executive committee to look after the interests of the medical profession in Ireland in connexion with the National Insurance Bill.

A resolution urging the total rejection of the medical clauses of the Bill was proposed and cordially received, but it was ruled out of order by the chairman.

Speech by Mr. Joseph Devlin, M.P.

On the evening of June 30th Mr. Joseph Devlin, who is the head of the Ancient Order of Irish Hibernians and who represents a thoroughly working-class division of Belfast, addressed his constituents in praise of the Bill. He pointed out, however, that it must be modified for the special circumstances of Ireland, and that in order to amend it to Irish needs a committee of the Nationalist Members had been appointed, and they were making satisfactory progress in their work.

Congress of the Royal Institute of Public Health.

It is expected that the Congress of the Royal Institute of Public Health, to be held in Dublin, will be one of the largest and most successful held. Matters relating to public health, the prolongation of life, and the prevention of diseases will occupy a good portion of the time, yet the social part will be well catered for. Garden parties will be given by the Countess of Aberdeen, Sir Christopher Nixon, Dr. H. Benson, and Mr. Stanley Cochrane. A reception and conversazione will be held in the Museum, and excursions to various places of interest have been organised. Ample accommodation will be provided in the centrally situated premises of Trinity College, and all the sectional meetings will be held there. Lady Aberdeen will deliver the Presidential address on the morning of Tuesday, August 15th, when it is expected that the President, Vice-President, and honorary secretaries of the different sections and others connected with the Congress will attend in their academic and municipal robes.

Congress of the Royal Sanitary Institute.

The twenty-sixth Congress of the Royal Sanitary Institute will be held in Belfast from July 24th to 29th. In the various sections and conferences the following subjects will be considered:—Sanitary Science and Preventive Medicine: "The Prevention of Typhoid Fever" and "Sewage Purification"; Engineering and Architecture: "The Planning of a Modern City, from an Engineer's Point of View," and "Model By-Laws in Relation to Architectural Practice"; Municipal Representatives: "Municipal Lodging Houses" and "Municipal Hospitals"; Port Sanitary Authorities: "Plague Precautions in Reference to the Destruction of Rats" and "The Importation of Unsound Food"; Medical Officers of Health: "The Notification and Treatment of Non-notifiable Infectious Diseases" and "The Medical Officer of Health in Ireland"; Engineers and Surveyors: "The Discharge of Sewage into Tidal Waters" and "The Dust Nuisance, its Evils and Abatement"; Veterinary Inspectors, "The Hygiene and General Arrangements of a Modern Slaughterhouse" and "Meat Branding and the Uniformity of Meat Inspection; Sanitary Inspectors: "The Smoke Nuisance and its Abatement" and "Dairies and Milk-supply from a Sanitary Inspector's Point of View"; Women in Hygiene: "The State Endowment of Mothers" and "The Reduction of Infant and Child Mortality from Measles"; and Hygiene of Childhood, "The Hygiene of School Life" and "Infant Mortality in Towns." By an error, a sentence referring to this congress was inserted in the programme published last week of the August congress in Dublin of the Royal Institute of Public Health.

Diphtheria in Belfast.

At the monthly meeting of the Belfast city council, held on July 3rd, it was stated that in an area having its centre at Chichester Park, and a radius of about half a mile, there were 17 cases of diphtheria, 16 of which received their milk from the same dairy, and that in "swabs" taken from the family of the dairyman diphtheria bacilli were found. Between May 14th and June 17th 92 cases of infectious disease were notified—3 of typhus fever, 4 typhoid fever, 42 scarlet fever, 2 puerperal fever, 29 diphtheria, 1 membranous croup, and 9 erysipelas. There were also 60 cases of pulmonary tuberculosis. There is a marked increase in the notified cases of diphtheria.

An Irish Medical Man's Presence of Mind.

Mr. William Ormsby, while recently motoring from Ballina to Limerick, in attempting to pass a flock of sheep struck a low wall on the edge of a cliff some 50 or 60 feet above the underlying rocks. Just as the car was about to fall Mr. Ormsby jumped clear and escaped with a severe shaking.

Death of Mr. J. C. Woodside.

I regret to announce the death on June 29th, in the Royal Victoria Hospital, Belfast, after a lengthened illness, of Mr. J. C. Woodside of Ballycastle, co. Antrim, who was coroner for Ballymoney, and who for several years practised successfully in Ballycastle.

Sir George Plunkett O'Farrell, M.D.

The death of Sir George Plunkett O'Farrell on June 22nd, which was briefly announced in this column last week, has followed closely on his retirement from office as Lunacy Inspector in Ireland, as it was only in July of last year that he gave up this post. Sir George O'Farrell was the son of a medical man enjoying a good practice in Boyle, county Roscommon. He was educated at Trinity College, Dublin, where he won many distinctions, of which the chief were a moderatorship in natural science and the travelling studentship in medicine. Having finished his medical studies he joined his father in practice in his native town. In 1885 he was offered and accepted a medical inspectorship under the Local Government Board. Four years later he became Inspector of Reformatories and member of the General Prisons Board. This office he held for only a brief time, as in the following year he became one of the two Inspectors of Lunatics in Ireland. It was in this post that his most important public work was done. At the time of his appointment he was not an expert in insanity, and his lack of experience led to some difficulties in his intercourse with the more experienced heads of asylums. As time went by, however, O'Farrell became at home in his work, and his reports showed a thorough grip of the many problems arising in connexion with the care of the insane. It is not too much to say that much of the improvement in Irish asylums in the past 20 years is due to the wise advice and supervision of O'Farrell and his colleague, Dr. E. M. Courtenay. In particular they were active in removing the insane from workhouses to

asylums, a reform of great importance. They strove, too, for the betterment of the conditions of services of asylum attendants. In 1899 Dr. O'Farrell received the honour of knighthood. Last year, on his retirement from office, the officials of the Irish asylums joined in a presentation to Sir George O'Farrell in token of their appreciation of his work as Inspector of Lunatics.

The Water-supply of Belfast.

As is well known, all water undertakings are maintained by the amount of rainfall available in each during the six wet months—October to March, inclusive. The remaining six months—from April to September, inclusive—are known as the six dry months, during which very little water is available. Previous to the present extraordinary year, the lowest rainfall on record during the six wet months was from October to March, inclusive, of 1886–87, and amounted to 17·20 in. rainfall; the next driest was during the same wet months in 1892–93, when the amount of rainfall was 18·21 in.; while during the six wet months 1910–11 the rainfall was only 16·01 in., and this constitutes—as far as the Belfast water-supply is concerned—the lowest rainfall on record. But even since the end of March there has been very little rain, hence the Belfast Water Commissioners have wisely advised that all water consumers should exercise the greatest economy in the legitimate use of water for all purposes in order to avoid inconvenience at the end of the present summer.

July 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Classical Studies in the Preliminary Course for Medicine.

THE medical syndicates are protesting vigorously against a decision announced last year by the Minister of Public Instruction. Up to now, in order to enter as a student in the Faculty of Medicine it has been necessary to obtain a special diploma, the certificate in physics, chemistry, and the natural sciences—commonly known as the P.C.N.—which is obtainable after a year's work in a university faculty of science. The possession of a Bachelor's diploma, however, was a pre-requisite to beginning these studies. Now there are four kinds of baccalaureate, according to the greater or less requirements respectively in Latin and Greek, the pure sciences, and living languages. The admission to the course for the P.C.N. as a step towards the study of medicine thus necessitated the acquirement of one or other of the three baccalaureates of which Latin and Greek form a component part; for the possessors of the fourth baccalaureate, obtainable on a curriculum of science and living languages, without Latin, Greek, or philosophy, and established for students on leaving the superior primary schools without any training in classical studies, were excluded. By a decree of April 16th, 1910, it was decided to admit the holders of this reduced baccalaureate to the course of the P.C.N., and consequently to throw open to them the medical curriculum, so that in future it will be no longer necessary to have undergone a classical course in order to enter on the study of medicine. This decision, prompted apparently by the political motive of throwing open to the proletariat the liberal professions, by removing the barrier hitherto interposed by the necessity for a preliminary classical education, has given rise to the most lively protests. The various medical societies of the Arrondissements of Paris, the Syndicate of Physicians of the Seine, and even the Association of Students in Medicine, have passed resolutions protesting against this decree, and demanding the restoration of Latin and Greek to a compulsory place in the medical curriculum. A communication on this point has been presented by Dr. Blondel to the Société d'Enseignement Supérieur, which has been widely republished by the lay press. It is insisted therein that a satisfactory course of medical studies cannot be constructed or a good medical practitioner trained except on the basis of a solid classical education. An acquaintance with Latin and Greek is indispensable for comprehending and retaining the terms of medical nomenclature, formed for the most part from one or other of these languages, and adopted bodily into the vocabularies of foreign tongues, thus facilitating at least a superficial comprehension by physicians of books and journals written in languages other than their own. It is further asserted that even the mentality of the medical man in relation to the practice of his art would suffer from the absence of a classical education. For the making of a diagnosis is accomplished by an intellectual operation which is in effect a hypothesis—that is to say, the medical man has to arrive at a conclusion from a part only of the elements of the problem. It is therefore necessary that his mind should have previously undergone a training in reasoning such as the philosophic studies alone can give. In practice the medical man of classical education is endowed, says Dr. Blondel, with faculties superior to those of his *confrères* not similarly favoured. His general culture, derived from familiarity with the ancient authors who have moulded the mental faculties of all preceding European generations, is certainly superior; and for the developing in him of the qualities of tact, discriminating compassion, and solace to those who suffer, nothing can replace them. The well-known surgeon, Dr. Labbé, president of the Academy of Medicine, and Senator, will lay before the Senate a *résumé* of the views of the medical syndicates and the medical press, and will call upon the Minister to restore the former condition of things.

The Services of Public Assistance.

M. Mirman, Director of Public Assistance and Hygiene, has presented to the Conseil Supérieur de l'Assistance a report covering his entire services. The labours in puericulture, maternal assistance, and the protection of children of tender age have lowered the infant mortality below one year. The mean yearly death-rate in communities with a population of more than 5000 inhabitants was 258 from 1892–95; 229 from 1896–1900; and 164 from 1901–05. In 1906, 145 died; in 1907, 129; in 1908, 129; and in 1909, 117. The number of people receiving gratuitous medical aid increases constantly. The total of those so assisted, either in their own homes or in hospitals, which in 1905 amounted to 615,872, rose in 1909 to 996,539 by a continuous and almost regular increase of 27,000 per annum. The increase in expense mounts by an even more violent progression. Starting at 3,696,000 francs in 1895, it attained in 1909 the figure of 18,416,000 francs. Under the law of 1905 for the assistance of the aged, the infirm, and the incurables, the number of beneficiaries does not cease to increase, though the rate of increase is receding, for since the third quarter of 1908 this figure, which was then 515,480, has increased in succeeding quarters by 25,000, then 7000, and 6000, until at the end of the first quarter of 1911 the increase was only 77. The annual expense of the administration of the law of 1905 is about 100,000 francs.

The Transformation of the Hôtel Dieu.

The Public Assistance proposes to devote to the work of transforming the Hôtel Dieu a part of the funds that have been allotted to it out of the municipal loan of 900,000,000 francs. The chief feature of the plan consists in the installation of a maternity department, of which the Hôtel Dieu has been deprived since the demolishing of the annex in the Rue de la Bucherie. The new maternity will be situated in the eastern portion of the buildings overlooking the Quai aux Fleurs. The plan contemplates also a consolidating of the ophthalmologic services at present disseminated through the hospital, as well as the construction of a new linen department and of two operating rooms furnished with modern apparatus and instruments, and equipped according to the desiderata laid down by the surgical staff. The greater part of the other services will be reinstalled under better conditions, and a radiographic service will be established, so as to allow the patients to be examined at the Hôtel Dieu itself, instead of their being sent to the central radiographic service at the Salpêtrière. Finally, the Hôtel Dieu will be fitted throughout with electric light and steam heat. The estimated expense will be about 1,810,000 francs. The plan prepared by the Administration of Public Assistance will doubtless come before the Municipal Council during its present session.

July 3rd.

NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.—The Princess Christian's Farm Colony will be opened by H.R.H. Princess Christian of Schleswig-Holstein on Tuesday next, July 11th, at 3.30 P.M., at Hildenborough, Kent.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Question of a Statutory Compulsion of Medical Practitioners to Attend Patients.

AT a recent meeting of the Parliamentary Committee which is considering the Bill for the suppression of medical practice by unqualified persons some members moved that qualified medical men should be liable to punishment if they declined to attend patients who sought their advice, exceptions being admitted only under the law. The supporters of this view said that if this Bill became law qualified medical men would have a monopoly of treating certain diseases to the complete exclusion of unqualified persons, and this being so they must not be allowed to decline attendance on patients desirous of consulting them, as otherwise great inconvenience may arise for the public. The Secretary of State replied that statutory provisions in this sense had existed until about the year 1867; they could not be re-enacted now, and would, moreover, be quite useless at the present time, when qualified medical men were so numerous and competed with one another so that the public was nowhere without opportunities of obtaining proper medical attendance. He stated that he had no knowledge of the existence in any country of such compulsion of medical men to attend every patient, but he would request the medical chambers to communicate with him on the subject. This proposal has caused great indignation throughout the profession, although it is very unlikely that it will be adopted. The editor of the *Zeitschrift für Ärztliche Fortbildung*, a journal for post-graduate study, has made inquiries for the purpose of ascertaining whether anything of the nature of such compulsory attendance exists in foreign countries, and the results of that investigation, which included the United States of America, Belgium, Denmark, Great Britain, France, the Netherlands, Norway, Austria, Russia, Sweden, Switzerland, and Hungary, were published in a recent issue of that journal. It was stated that a similar provision exists in only one of the above-mentioned countries—namely, in Russia. According to the Russian law a medical man is obliged to see a patient in the latter's residence when asked to do so, and this obligation is specially binding when he is requested by a midwife to attend a confinement; the fines for failure to comply with the law are 10 roubles (about £1) for the first contravention, 50 roubles for the second, and 100 roubles for the third. In the case of a confinement the medical man is even liable to punishment if he leaves the woman before the end of the labour. No other country has such draconic legislation, but in certain countries, as, for instance, in Sweden and in Norway, the governmental and municipal medical officer must attend patients when requested to do so; in Switzerland and in Hungary there is a statutory obligation on medical practitioners to give first aid to injured persons and to those who are taken suddenly ill; but in the majority of the countries there is no law at all of that kind. The answer received from France in reply to the query was very characteristic, being to the effect that medical practitioners in that country were not under any compulsion to attend patients even in urgent cases; the question was one of humanity, and it has not yet been found necessary to enact laws compelling the medical profession to be humane. Undoubtedly the medical chambers will give a unanimous opinion adverse to the proposed innovation, but the incident makes it obvious that the Bill in question has many Parliamentary opponents who are doing their utmost to hinder its adoption.

The Wassermann Reaction in Lead Poisoning.

Dr. Dreyer of Cologne, writing to the *Deutsche Medizinische Wochenschrift*, states that he has obtained a positive Wassermann reaction in certain cases of lead poisoning. Of 35 cases examined, 4 showed the reaction, although the men had never been syphilitic. In 25 of them the sera were, moreover, examined according to Stern's modified method, the result being that a positive reaction was obtained in 12 cases. Dr. Dreyer considers that the lead poisoning itself and not the anæmia of the patients was very likely the cause of the reaction being positive, as it was always negative in cases of anæmia from other causes. He has further investigated the question whether poisoning by other metals has the same effect; he found that three cases of chronic mercurial poisoning in men employed in factories where mercury was much used had an absolutely negative reaction. Dr. Dreyer's statements are confirmed by Dr. Schnitter of Offenbach, who examined the blood serum of 16 workmen presenting symptoms of lead poisoning; 4 of the men showed a positive reaction; 1 of them had suffered from syphilis three years ago, although no symptoms of the disease existed at the time of the examination. It was worthy of notice that in the blood of the cases giving a positive reaction a great quantity of basophilic erythrocytes was present. The men giving a positive reaction had been engaged in the lead work for various periods from 18 to 40 weeks, and the others for periods from two days to seven weeks; it was therefore probable that the positive reaction in lead poisoning depends on the degree and the duration of the poisoning.

July 3rd.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

South African Memorial to King Edward.

IN order to test the general feeling of the South African public on the question of the form to be taken by a memorial to King Edward, the committee, instituted as described in THE LANCET of Feb. 4th, addressed communications to the different local and health authorities and to the medical societies throughout the Union, inquiring whether they were in favour of an order of nurses, of the establishment of sanatoriums, or of any other plan of a similar character equally appropriate as a memorial and more likely to be acceptable to South Africa as a whole. The replies received, which were almost without exception cordially in support of the movement, favour in the proportion of 4 to 1 the establishment of an order of nurses—the Viscountess Gladstone's own proposal—in preference to sanatoriums. The larger towns were mostly in favour of sanatoriums, but in these the need for trained nursing assistance is not so pressing as in up-country villages, owing to the fact that the former are mostly provided with hospitals. The smaller towns were unanimous in favour of the nursing scheme, while the medical societies were fairly evenly divided on the two proposals. An appeal has just been made by the committee for a minimum capital sum of £100,000, which it is estimated will be required to place the nursing scheme on a sound footing.

The New Order of Nurses.

It is proposed that branches of the new Order of Nurses should be established at appropriate centres in each province, selected with particular regard to facility of railway communication. Each branch is to be under the supervision of a matron. The nurses will be required to possess such certificates in general nursing and midwifery as are requisite for registration in any part of the Union, and to have as far as possible experience of South African conditions. They will receive fixed salaries, the money received from fees being paid by the matron into the central fund. Except in urgent cases the services of the nurses will be available only on requisition by a medical man, on whose certificate and subject to instructions from the central committee, the matron will decide whether full fees are to be charged or whether part or total remissions shall be made. The expenses of the order will be met in part from fees and in part from donations and subscriptions. As the needs of the Europeans and the natives are distinct, it is proposed that the contributions of the coloured and native population should be devoted to the training of coloured and native nurses at Lovedale and similar institutions, and in order to give effect to this that the contributions from the coloured and native population to the memorial should be kept distinct. In an otherwise excellent scheme this appears to be likely to prove unsatisfactory, for the difficulty is at present for the few coloured or native trained nurses in South Africa to obtain work, and to increase the number of these nurses without finding them situations will not be of much benefit. It would probably have been better to provide for the funds to be utilised in employing salaried and native nurses at centres where there

are large coloured and native populations, but if the appeal is successful this will doubtless be done. It is to be trusted that Lady Gladstone's endeavours will be successful and that her appeal to the generosity of South Africans will not be made in vain. The Association for the Prevention of Tuberculosis, an association established some years ago in Cape Town, has tried in recent years as a main objective to induce the Government to establish a number of sanatoriums; and apparently when the memorial committee was sounding the public as to the form of proposed memorial its council took steps to impress upon the committee its views. The public, as already stated, were against this proposal, and the committee had no option but to reject it accordingly. Some of the council, including the Mayor of Cape Town, however, have handed in their resignations in indignation at what is held generally to have been an unwarrented protest.

Prevalence of Tuberculosis.

The memorial committee has considered very carefully the question of the memorial taking the form of sanatoriums, and published a letter addressed by it to the Prime Minister on the subject. In this letter it was stated that in the course of its inquiry the committee had been deeply impressed by the evidence from all parts of the Union of the need of some provision for the treatment and prevention of consumption, and that it desired to direct his attention to the magnitude of the evil and the state of public feeling on it. In commending it to the attention of the Government, the committee expressed the earnest hope that the Government might find it possible to take measures without delay to remedy what is indisputably a serious danger in the future of South Africa. The tuberculosis menace has been strenuously impressed upon the Government recently from other directions. The recent Medical Congress passed the following resolution on the subject:—

That this Congress, recognising the serious prevalence of tuberculosis among the European and coloured races of this country, and the inadequacy of the present means of coping with the disease, respectfully requests the Government to appoint a Commission to investigate the amount of tuberculosis among the white and coloured races of the Union, what steps are being taken in the different Provinces to deal with the disease, and what provisions exist for research and for the treatment of tuberculosis according to the best methods known to modern science.

A few weeks ago a deputation from the Standing Committee of Congress waited upon the Minister for the Interior to present this and other resolutions. General Smuts informed the deputation that he thought a Commission might perhaps serve a useful purpose and that the Government would give the matter due consideration. Recently, also, a joint deputation from the Association for the Prevention of Tuberculosis and the Western branch of the British Medical Association waited upon the Cape Administrator with a view to urging upon the Government of that province the necessity of providing adequate hospital accommodation for consumptives. The Administrator explained that the providing of sanatoriums might be considered a public health measure, and, if so, the Provincial Government could not very well do anything in the matter without the sanction of the Union Government. He, however, stated that as hospitals were under the provincial governments it was possible sanatoriums might also be held to be under the local administrations, in which case he would bear their representations in mind. He explained that a new chronic sick hospital was shortly to be erected in the vicinity of Cape Town, and said that he proposed to ask the Provincial Council to sanction expenditure for a special consumptive block to be used for cases that were beyond hope of recovery and which if left in their homes were considered to be a menace to the public. The subject of tuberculosis was also recently discussed in the Cape Provincial Council, when on the motion of Dr. B. Hewat, Member for Cape Town, a select committee was appointed to consider the matter. The select committee, however, after taking some evidence, is understood to have brought up merely an interim report recommending that it should be reappointed the following session. It is understood that in view of the pressure that has been brought to bear on Ministers the Government is seriously considering the appointment of a commission to go into the whole question. It is not quite easy to realise what there really is for a commission to investigate, for no new facts or figures are likely to be elicited. But, of course, the recommendations of a commission would carry weight, particularly if its members were medical experts. If such a commission is appointed no doubt the Standing Committee of Congress and the various medical societies in South Africa will take action to ensure that the views of the profession in South Africa are represented to the Commissioners, and that the Commissioners impress upon the Government that this national danger cannot be adequately dealt with except under the guidance of a properly organised health department under its own expert head. Dr. P. Murison, medical officer of health of Durban, has induced the council of that town to appoint an experienced medical officer to work under his direction in connexion with a municipal dispensary that is to be opened in Durban for the treatment of any tuberculous pauper requiring medical treatment. Care is to be taken to prevent the possibility of abuse of the dispensary. The medical officer who has been appointed will, it is understood, also be available to assist Dr. Murison in other directions, but he is expected to concentrate mainly on the tuberculosis problem. The experiment will be watched with interest by workers in public health in South Africa, and if it appears to be a success doubtless an effort will be made to induce some of the other large municipalities to follow the example of Durban.

June 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Administrative Control of Consumption.

THE complete list of recommendations made by the recent conference of heads of State public health departments for the administrative control of consumption was published on May 6th. The most novel were the following:—

12. Legal power should be given to examine medically contacts of consumptive patient.

18. Legal power should be given to the central health authority to regulate the conditions in which home-dwelling consumptives live. The object of notification being the control of the consumptive as a possible disseminator of infection, there should be power not merely to visit his and inquire into the circumstances in which he lives, not merely to advise him what he should do for the safety of others, but power to direct him to take the few and simple precautions which are necessary to safeguard his housemates. The penalty for persistent disobedience, the consequence of the physical impossibility of taking these simple precautions, is but one, and is mentioned in the next resolution.

19. Legal power should be given to the central health authority to remove dangerous consumptives into segregation on the order of police magistrate given after private hearing on application of the central health authority. This is but a corollary to the preceding resolution. It would very rarely be necessary to exercise this power but possession of it is indispensable. It would be applied (*a*) to the small number of persons who persistently decline to take the precautions enjoined upon them for the safety of others; (*b*) to the somewhat larger number of persons whose circumstances, either of poverty or of advanced illness combined with small means, render observance of the necessary precautions by them physically impossible. This form of control should be applicable not merely to persons in dwelling institutions, and the like places, but also to those frequenting work shops and places of public resort.

20. The duration of the legal detention of persons compulsorily segregated should be determined only by order of the court on recommendation of the central health authority, any patient to have the right to apply for release. Any permit of release must be obtained on application to the court.

These proposals were at once adversely criticised and it is unlikely they will be proposed in the House.

Imperial University Congress.

The Senate of the Sydney University has nominated Sir Beauchamp (formerly Governor of New South Wales), Professor Anderson Stuart, Professor Warren, Dean of the Faculty of Engineering, and Mr. Burff, Registrar of the University, as delegates to the Imperial University Congress.

New South Wales Country Hospitals.

A deputation of medical men have waited on the acting Chief Secretary to protest against the following circular with regard to the appointment of honorary medical officers to subsidised hospitals outside the metropolis:—

A place on the medical staff shall be open to every reputable practitioner of the district who desires to occupy one, the roster to be settled by the committee after consultation with the medical men who have been appointed on their application, all appointments to be effected the title of "honorary surgeon" to be abolished as a distinct designation, but retained if preferred on condition it applies to members of the medical staff alike.

The payment of Government grants was made conditional the acceptance of this proposal. The main objection of deputation was that no choice was left to the controll

bodies of hospitals, and that in small hospitals a chaotic condition would ensue if the staff was over-manned. The Chief Secretary promised that the matter would be reconsidered, but stated it had been adopted on the advice of the chief medical officer to the Government.

Royal Prince Alfred Hospital, Sydney.

The twenty-seventh annual meeting of this institution was held in Sydney on April 26th. The strain on the hospital resources had been greater during the past year than at any previous period, the daily average of occupied beds being 372. Operations totalled 3901. Professor Anderson Stuart, who was in the chair, stated that the financial position was unsatisfactory, and that the debit balance would be increased unless Government assistance was forthcoming. Unless some relief were obtained it would be necessary to consider reducing the number of beds, a step the committee were loth to take. The expenditure was £28,764.

The Use of Hospital Funds.

The Acting Premier of Victoria has criticised adversely the action of the Melbourne Alfred Hospital authorities in devoting £50 from the general hospital revenue to the payment of portion of salary of a clinical pathologist. One of the physicians to the hospital has replied in the daily press that such a position must be filled in the interests of the patients and hospital at the same time.

Care of Children.

The report of a committee appointed by the Child-saving Council of Melbourne strongly urges that the boarding-out system should be extended. The committee were struck with the irresponsive demeanour of institutional children as compared with those in the care of foster parents. Institutions should be limited as far as possible to: (1) receiving homes; (2) homes for wayward children; (3) homes for mentally defective children; and (4) for those requiring technical training. There was evidence of overlapping among existing institutions. All homes should be subject to regular medical inspection. Surprise was expressed that so few of the homes maintained trained nurses on the staff.

The Richmond Railway Accident.

The Minister for Railways for Victoria has handed to the press a list of the medical men who were paid by the department for their attendance on sufferers in the Richmond railway accident which occurred in July, 1910, and resulted in alleged injury to some 480 persons. The total amount paid in medical fees was £16,699 13*s.* 6*d.*, besides £982 for private hospital accommodation. The individual amounts varied from £2 2*s.* to £1984. It has been generally felt that some better system will have to be put in force in the future. Although such a list makes no mention of the actual work done, in many cases the fees charged appeared excessive in amount. It is not intended to convey that this is brought about except by a needless number of visits being entered against the department. It is calculated that on a basis of 10*s.* per visit over 32,000 visits were paid for.

Health of Miners.

A Royal Commission has been appointed by the Queensland Government, consisting of Mr. Murphy, M.L.A., Mr. Jackson, M.C.E., and Dr. J. S. C. Elkington, to inquire into the health and conditions of work of miners in various parts of Queensland. The incidence of pulmonary diseases and the regulation of employment of persons suffering from tuberculosis as miners are to form part of the inquiry.

New Brisbane Hospital.

The Mater Misericordiæ Hospital, which has been established in Brisbane by a nursing sisterhood of the Roman Catholic Church, is now open for patients, and appears to be very complete as regards building and equipment. The honorary staff as at present constituted comprises four surgeons, four physicians, and there are special departments for dermatology, ophthalmology, pathology, and dentistry.

Obituary.

The death of Alexander Lawrence, M.D. Edin., L.R.C.S. Edin., is announced from Adelaide, in which city he practised for many years past. The late Dr. Lawrence was a native of Brechin, Forfar. He had an intimate acquaintance with small-pox and was frequently consulted as an expert in quarantine cases. He originally came to South Australia on account of his health, having been in practice in the old country. Personally, he was very popular and enjoyed the confidence of a large circle of patients. He leaves one son and daughter, the latter having married Dr. Lionel Hayward some years ago.

June 5th.

Medical News.

UNIVERSITY OF OXFORD.—The following candidates have been approved in the undermentioned examinations:—

FIRST B.M.

Organic Chemistry.—H. E. Bamber, J. N. L. Blarney, L. G. Burford, A. Jackson, T. L. Price, J. A. G. Sparrow, and A. Traill.

Human Anatomy and Physiology.—H. E. A. Boldero, L. G. Brown, F. B. Chavas e, W. T. Collier, V. T. Ellwood, R. C. Fairbairn, R. J. Inman, M. R. Laurence, G. A. Maling, T. S. Nelson, O. B. Pratt, G. S. Robinson, C. P. Sells, J. A. G. Sparrow, N. A. Sprott, C. P. Symonds, and H. A. B. Whitelocke.

SECOND B.M.

Medica Materia and Pharmacology.—W. J. Hart, H. M. Pope, E. Scott, and J. A. Wood.

Pathology.—J. L. Birley, A. Booth, C. H. Budd, A. A. M. Davies, H. T. Evans, R. A. Faucus, J. R. Kay-Monat, D. P. M'Donald, W. H. Ogilvie, R. C. Ozanne, H. M. Pope, J. Sainsbury, W. W. Wagstaffe, and R. O. Ward.

Forensic Medicine and Public Health.—H. C. Bazett, J. L. Birley, A. Booth, N. S Lucas, H. W. Scott-Wilson, P. T. Spencer-Phillips, C. J. G. Taylor, W. W. Wagstaffe, and W. C. Wigan.

Medicine, Surgery, and Midwifery.—H. C. Bazett, A. R. Chavasse H. J. B. Fry, A. D. Gardner, J. A. Noble, E. R. Pearce-Gould J. F. Penson, P. T. Spencer-Phillips, and W. W. Wagstaffe.

The following degree has been conferred:—

D.M.—Charles Singer.

UNIVERSITY OF LEEDS.—At a Congregation of the University held on June 30th the following pass lists were issued:—

SECOND M.B., CH.B. EXAMINATION.

Part I.—C. M. Gozney, E. Hesterlow, W. D. A. King, and J. Wright

Part II.—W. D. Anderton, R. H. Chadwick, D. A. P. Clarke, S. N. Cohen, J. J. Digges la Touche, H. Foxton, A. S. Hebblethwaite, E. Hesterlow, F. King, W. D. A. King, H. S. Lockwood, K. Menon, H. W. Robinson, C. H. Seville, H. Shochet, J. Wilkinson, and C. Wilson.

FINAL M.B., CH.B. EXAMINATION.

Part I.—H. Angel, J. H. Blackburn, T. Elliott, J. Ferguson, G. W. L. Kirk, G. P. Mellis, J. C. Metcalfe, N. V. Mitton, M. Peto, S. Samuel, and H. W. Symons.

Part II.—C. S. Brown, J. B. Fisher, A. Riley, and T. L. Walker. Mr. Fisher has been awarded first-class honours.

Diploma in Public Health.—C. N. Smith.

Diploma in Dental Surgery (First Professional Examination).—H. V. Waddington.

ROYAL SOCIETY OF ARTS.—The annual general meeting of the Royal Society of Arts took place recently, Sir John Cameron Lamb, C.B., C.M.G., chairman of the council, presiding. The annual report shows that the office of president has now been accepted by H.R.H. the Duke of Connaught. Up to the death of King Edward VII. it was occupied by H.R.H. the Prince of Wales (King George V.), and, on his accession to the throne, it was temporarily held by the Lord Chief Justice. During the year 22 papers were read at the ordinary meetings of the society, six in the Indian, and five in the colonial section. There has been, as usual, an increase in the entries for the society's examination, the total number of papers worked this year being 34,260. Under the Fothergill Trust, as has been announced in THE LANCET, the council has made the following awards for life-saving apparatus for use in mines and places where the air is noxious: gold medals to Mr. H. A. Fleuss and Mr. W. E. Garforth, and silver medals to Mr. Richard Jacobson and the Mining Engineering Company. The society's Albert medal has been awarded to the Hon. Sir Charles A. Parsons, K.C.B., F.R.S., for his experimental researches into the laws governing the efficient action of steam in engines of the turbine type. The council has awarded silver medals

for papers read during the past session to Dr. Leonard Hill for his paper on "Caisson Sickness and Compressed Air," and to Mr. James Cantlie for his paper on "Plague."

THE MIDWIVES ACT, 1902.—It is officially notified in the *London Gazette* that the Privy Council has approved of revised rules, for the period of five years commencing on July 1st, submitted to it by the Central Midwives Board.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY'S GOLD MEDAL.—The gold medal of this society, which in awarded every three years for distinguished work is medical science, was presented to Professor A. Neisser on June 27th at the Kensington Town-hall, after he had delivered the Cavendish Lecture.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on June 16th. There were present Dr. F. de Havilland Hall (in the chair), Dr. St. Clair B. Shadwell, Dr. F. C. Martley, Dr. F. S. Palmer, Dr. J. Pickett, Dr. H. A. Sansom, Mr. J. Brindley-James, Mr. H. P. Symonds, Dr. R. Hutchison, Dr. F. J. Allan, Dr. W. Knowsley Sibley, and Dr. J. B. Ball. The business of the society during the last few months has been very satisfactory. Although fairly numerous, the sickness claims have been for the most part of short duration, and the total sickness pay disbursed has been well under the amount expected and provided for in the rates of contribution. With the view of mitigating the hardships of some of the cases of distress which come under the notice of the committee it was resolved to subscribe 100 guineas a year to the British Medical Benevolent Fund. The funds of the Medical Sickness and Accident Society cannot be directly used for charitable purposes, but the committee trusts that this subscription will enable it in some cases to be of use to members of the society in temporary distress. Prospectuses and all further information may be had on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of this association was held at the Holborn Restaurant on June 15th, Dr. Rashell T. Davison being in the chair. Mr. D. A. Belilios, the honorary secretary, reported that the following associations and societies had appointed delegates to the Joint Permanent Committee of General Practitioners who hold public appointments under central or local bodies: Poor-law Medical Officers, Public Vaccinators, Postal Medical Officers, Metropolitan Police Surgeons, Certifying Factory Surgeons, and the Association of Medical Officers of Health. The council appointed Dr. Rashell Davison, Dr. F. G. Crookshank, and Mr. Belilios to represent the association.—A meeting of the Joint Permanent Committee of Medical Officers was held later, when the temporary honorary secretary reported that the following representatives had been appointed by the respective bodies: Dr. A. E. Cope, Mr. V. A. Jaynes, and Mr. G. W. Brabyn by the Public Vaccinators; Dr. C. Owen Fowler, Dr. G. Nicol Henry, and Dr. A. Dumville Roe by the Metropolitan Police Surgeons; Dr. J. H. Keay, Dr. W. A. Atkinson, and Mr. W. H. F. Oxley by the Certifying Factory Surgeons; Dr. Major Greenwood, Mr. A. Withers Green, and Mr. T. L. Brown by the Poor-law Medical Officers; Dr. R. R. Giddings, Dr. John Matheson, and Dr. George A. Mason by the Postal Medical Officers; and Dr. Crookshank, Dr. Rashell Davison, and Mr. Belilios by the Association of Medical Officers of Health. Dr. Rashell Davison was elected to the chair, and he proposed that Mr. Henry Bott of Brentford be asked to be the chairman of the committee for the ensuing year. This was seconded by Dr. Giddings and carried unanimously. It was proposed by Dr. Mathieson, seconded by Dr. Mason, and carried, that Mr. Belilios be appointed honorary secretary and treasurer. The proposed rules of the committee were discussed and passed. A resolution was unanimously carried that the objects were to conserve the interests of all medical practitioners who hold appointments under local and central authorities. The medical provisions of the National Insurance Bill were discussed, and it was unanimously agreed that in order to preserve an unbroken line the policy of the British Medical Association as outlined in its recent circular to the profession be supported. It was further decided to bring to the notice of the British Medical Association the clause (Clause I., Part II., Schedule IV.) of the Bill which contemplates bringing women and children into medical benefit when funds become available. It was recommended that the clause be deleted. Mr. Withers Green proposed and Mr Brown seconded—

That the medical representation on the Local Health Committee and the Advisory Committee equals at least the representation of the Friendly Societies and Post Office contributors combined. The local profession in each district to elect representatives on these committees

It was pointed out that while the profession was unanimous in its insistence to be freed from the control of the Friendly Societies, it was not by any means clear that the control of the medical practitioners by a Local Health Committee would be any improvement unless the term "adequate" representation of the profession be defined in the Bill itself. It might mean the case of falling from the frying-pan into the fire. A vote of thanks to Dr. Rashell Davison was carried by acclamation.

THE FIFTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.—The Fifteenth International Congress on Hygiene and Demography will be held in Washington, D.C., from Sept. 23rd to 28th, 1912, under the honorary presidency of the President of the United States. Dr. Henry P. Walcott, President of the State Board of Health of Massachusetts, will be the active president. Twenty-two Governments have already accepted the invitation to participate, issued by the Government of the United States, and in addition each of the States of the Union which for health purposes is an independent self-governing body, has received an invitation which includes its cantons and cities. The committee on organisation created by the U.S. Department of State consists of 53 members, and includes Dr. Hermann Biggs, Dr. John S. Billings, Professor R. H. Chittenden, Professor Irving Fisher, Colonel Gorgas, Professor Theobald Smith, Surgeon-General Sternberg, Professor W. H. Welch, and Surgeon-General Wyman, with other well-known medical men, sanitarians, and social economists. The secretary-general is Dr. John S. Fulton, Army Medical Museum, Washington, D.C. The official languages will be English, French, and German. The work of the Congress falls into two branches: first, an exhibition of the recent progress and of the present condition of the public health movement in the coöperating countries; secondly, the scientific meetings, for which purpose the Congress will be divided into the following nine sections each of which will meet daily and may propose resolutions regarding matters of practice or lines of desirable investigation. These resolutions will come before the closing session of the Congress. The sections are:—I. Hygienic Microbiography and Parasitology—President: Professor Theobald Smith, Harvard Medical School, Boston. II. Dietetic Hygiene, Hygienic Physiology—President: Dr. Russell H. Chittenden, Yale University, New Haven, Conn. III. Hygiene of Infancy and Childhood and School Hygiene—President: Dr. Abraham Jacobi, College of Physicians and Surgeons, New York. IV. Industrial and Occupational Hygiene—President: Dr. G. M. Kober, Georgetown University, Washington, D.C. V. Control of Infectious Diseases—President: Dr. Hermann Biggs, Department of Health, New York. VI. State and Municipal Hygiene—President: Dr. Frank F. Wesbrook, University of Minnesota, Minneapolis. VII. Hygiene of Traffic and Transportation—President: Dr. W. Wyman, U.S. Public Health and Marine Hospital Service, Washington, D.C. VIII. Military, Naval and Tropical Hygiene—President: Dr. H. G. Beyer, Medical Director, U.S. Navy, Washington, D.C. IX. Demography—President: Professor Walter J. Willcox, Cornell University, Ithaca, N.Y. Notice of a desire to present a paper or demonstration should be sent to the president of the appropriate section, enclosing an abstract of the paper. Each member will receive a report of the Transactions and of the Protocol to be published after the adjournment of the Congress. Membership in the Congress is open to those interested in public health or vital statistics, on payment of the membership fee of $5 (about £1). Inquiries and applications for membership should be addressed to the Secretary-General of the Fifteenth International Congress on Hygiene and Demography, Army Medical Museum, Washington, D.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Men and the National Insurance Bill.

WHEN Parliament reassembled after the Coronation festivities the negotiations between the Chancellor of the Exchequer and a special committee of the British Medical Association were resumed as to the position of medical men under the National Insurance Bill. The interval that has elapsed since the measure was introduced has revealed the united opposition of the profession to the terms which its members were offered, and in meeting Mr. LLOYD GEORGE the medical representatives had precise and definite demands to make. It is essential to the scheme of the Bill that the coöperation of medical men should be enlisted. There is every reason to believe that the Chancellor of the Exchequer was alive to this aspect of the situation when the negotiations were resumed, and was anxious, if possible, to secure an understanding with the medical profession before the House of Commons began the consideration of the Bill in Committee; in fact, it has been part of his general policy on the Bill as far as possible to adjust differences with various interests affected by it before Parliament sets to work on the details. Negotiations on these matters, however, are delicate and sometimes difficult. Those with the representatives of the medical profession have been conducted in private. On June 29th it was unofficially stated that a tentative agreement on several points at issue had been reached. According to this statement the Chancellor of the Exchequer had conceded free choice of medical men by insured persons and medical representation on the bodies which are to administer the Bill when it becomes law. It was further stated that the question of Friendly Society control might by consent be left to the House of Commons. The question of the income limit, which it is contended should confine the benefits of medical attendance and treatment to the less highly remunerated classes of the community, seems to have proved a very serious obstacle in the way of agreement. It is understood that the medical representatives and Mr. LLOYD GEORGE discussed the matter at length on Friday, but no settlement was reached. However, the negotiations were postponed until this week.

The PRIME MINISTER in the afternoon of Wednesday relieved general apprehension by moving that the proceedings on the National Insurance Bill, if under discussion at 11 P.M., should not be interrupted under the Standing Order.

Mr. LLOYD GEORGE, in the course of a speech on the National Insurance Bill in the House of Commons on Wednesday afternoon, let fall the remark, "substantially the opposition of the doctors has been met." The Chancellor of the Exchequer has been in negotiation with the representatives of the medical profession, and at the beginning of this week the important point of the income limit remained to be dealt with. Inquiry in a responsible quarter elicits the information that Mr. LLOYD GEORGE is now giving close consideration to the precise terms of a scheme which is designed to replace the provisions of the Bill in so far as the question of medical benefit and income-limit is involved. The representatives of the medical profession were immovably opposed to any plan under which persons who could reasonably be expected to pay fees should obtain medical attendance on the terms which the Bill gives to insured persons. It is understood that the Chancellor of the Exchequer has recognised the force of these contentions. The precise detailed terms of the new scheme have not transpired. However, it is understood that it is to proceed on the principle that persons who can pay fees to medical men for attendance but who would claim medical benefit under the National Insurance Bill are to continue to pay fees, but their medical benefits are to be accumulated. When illness comes these accumulated benefits will be set towards paying the medical man, and after they are exhausted the patient will pay from his own resources. A concrete case will illustrate the working of the scheme. A person who is in a position to pay medical fees becomes an insured person and his medical benefit is calculated at, say, 7*s.* per annum. He has no illness for five years. At the end of that period he has to call in a medical man. 35*s.* of medical benefit have accumulated to the credit of this patient and may be expended on paying for medical attendance on him before he has to fall back on his own resources. That is the general idea which is understood underlies the scheme to which Mr. LLOYD GEORGE is giving his mind.

It is understood that the amendments to carry out any arrangements which come to with the medical profession on the National Insurance Bill will, when adjusted, be placed on the notice paper by the Chancellor of the Exchequer. There will be one exception. The amendment to give the control to the Health Committees will be brought forward by a private Member.

Medical Men and the House of Commons.

Medical men have taken ample care that their claims for fair treatment under the National Insurance Bill shall be impressed on the minds of Members of Parliament. The committees and organisations in the country have been active both by lobbying at Westminster and by letter in bringing to the notice of Members the points in the measure which will operate with hardship on the profession. Undoubtedly the resolute front taken up in the country by medical men towards the Bill has produced a notable impression at Westminster, as it is recognised that their united hostility to the measure would strike a most serious blow at its usefulness.

Amendments to National Insurance Bill.

A very large number of amendments to the National Insurance Bill have been tabled. Dr. HILLIER has given notice of a series to Clause 14 (administration of medical benefit). The effect of these would be to give to the Local Health Committees the duty of making arrangements with medical practitioners for insured persons to receive attendance and treatment. By this proposal the Local Health Committees would entirely supersede the approved societies for this purpose.

Dr. HILLIER further proposes that for the purposes of this medical treatment the Health Committee shall—

"(*a*) prepare and keep a list of registered medical practitioners who have entered into arrangements with the committee for giving medical treatment and attendance to insured persons entitled to medical benefit;

"(*b*) include in the list every registered medical practitioner practising within the county or the county borough who applies to be included, unless in respect of any such practitioner the Insurance Commissioners are satisfied, after due inquiry, that his appointment would be prejudicial to the efficiency of the service, and the Insurance Commissioners may, on due inquiry and after notice to the registered medical practitioner concerned, remove from the list of registered medical practitioners for any county or county borough any medical practitioner whose conduct is prejudicial to the efficiency of the medical service or insured persons."

Dr. HILLIER also brings forward an amendment to this effect:—

"Every insured person entitled to medical benefits shall be entitled to select from the list of medical practitioners kept by the Local Health Committee a medical practitioner, and unless that medical practitioner forthwith after receiving notice of the desire of an insured person to be attended by him notifies in writing the Local Health Committee and the insured person concerned that he is unwilling to comply with the desire of the insured person it shall be the duty of that medical practitioner to attend the insured person under this part of this Act."

The honourable Member also proposes that words shall be introduced into Clause 41 to provide that amongst the Insurance Commissioners "the medical profession shall be adequately represented." He also asks that on the Advisory Committee there shall be representatives of "registered medical practitioners who have had personal experience of general practice amongst the classes from which the insured are drawn."

Sir PHILIP MAGNUS has placed upon the notice paper amendments identical to those put forward by Dr. HILLIER.

Mr. NEEDHAM has given notice of an amendment to Clause 14 similar to one which already stands on the paper. Its terms are as follows:—

"(1) All arrangements of the Local Health Committee with medical practitioners for attendance and treatment of insured persons shall be subject to the approval of the Insurance Commissioners.

(2) The Local Health Committee shall prepare a list of registered medical practitioners who have entered into arrangements with the committee for giving attendance and treatment to insured persons whose medical benefit is administered by the committee.

(3) In the list of registered medical practitioners from whom insured persons shall make their selection the Local Health Committee shall include all registered medical practitioners who apply to be included, unless in respect of any such practititioner the Insurance Commissioners are satisfied after due inquiry that his appointment would be prejudicial to the efficiency of the service.

(4) The Insurance Commissioners shall have power at any time after due inquiry to remove from the list of registered medical practitioners for any district any practitioner whose conduct is deemed by them to be prejudicial to the efficiency of the medical service of the insured.

(5) Every insured person shall be entitled to select from the list so prepared a medical practitioner, subject to the consent of such practitioner, to attend him when required."

An amendment to Clause 8 standing in the name of the Earl of RONALDSHAY is designed to meet the demand of the medical profession that no insured person shall be entitled to medical benefit who is in receipt of an average income from all sources exceeding £2 per week.

Mr. ROWNTREE, in an amendment to the same clause, proposes that "medical benefit" shall include "such medical and surgical appliances as may be prescribed by the regulations to be made by the Insurance Commissioners."

A series of amendments relating to "maternity benefit" stand in the name of Mr. BEALE. One of these provides that in the administration of this benefit under Clause 16 the conditions "shall, as far as possible, leave to the mother the choice of being attended by a registered

medical practitioner or a duly certified midwife, and the selection of the medical practitioner or midwife from among those who according to the conditions shall be available." Another of Mr. BEALE'S amendments proposes that "maternity benefit shall not deprive the mother of the child from medical benefit so far as regards the attendance of a medical practitioner when such attendance is called in by a midwife in accordance with rules governing her practice."

Mr. WALTER ROCH has given notice of a new clause, which he puts forward as a substitute for Clause 43 (appointment of Local Health Committees). The proposed clause is in the following terms:—

"The Local Health Authority shall be—

(*a*) In a county borough and in a non-county borough or urban district entitled to be a pensions authority under the Old Age Pensions Act, 1908, or an authority for the purposes of Part III. of the Education Act, 1908, the Health Committee under the Public Health Acts who shall, for the purposes of this Act, add to their number by co-opting five non-members to be chosen from among members of approved societies resident within the area of their council after nominations have been invited from such societies and three women; also resident within such area and chosen by the Local Health Authority;

(*b*) In an administrative county, except as hereinbefore provided, the county council, who shall appoint a Local Health Committee for the purposes of this Act consisting of not less than twelve or more than twenty and made up as follows:—

(1) As to one-half by members of the county council;

(2) As to one-quarter by members of the local sanitary authorities, appointed by the council;

(3) As to one-quarter by members chosen by the council from among members of approved societies resident within the area of their council, after nominations have been invited from such societies;

(4) And such Health Committee shall co-opt women in addition, if necessary, to the maximum number to which it is limited as hereinbefore mentioned."

Asylum Officers (Superannuation) Bill.

Evidence is now being heard by the Select Committee of the House of Commons which has been set up to deal with the Asylum Officers (Employment, Pensions and Superannuation) Bill. The first clause of this measure lays down that male attendants and nurses in asylums shall not be employed for more than 60 hours exclusive of meal times in any week, except in case of emergencies. The secretary of the Union of Asylum Workers gave evidence strongly in support of this proposal. On the other hand, some diversity of opinion was revealed in the evidence tendered on behalf of the Asylum Workers' Association. It was stated that 110 schedules of inquiry had been sent out by this body. Replies to the number of 58 had been received, and of these 28 were in favour of the provision limiting the hours to be worked by male attendants or nurses to 60 hours a week. On the other hand, 30 pronounced against an absolute limitation of 60 hours, and some of these replies stated that members would be quite willing to work 70 hours a week if they saw a prospect of retiring after 25 years' service with a fair pension. The views of the Home Office were put before the committee in reference to the question of superannuation. Twenty-five years was looked upon by it as too short a qualifying period of service as that might lead to a man retiring on pension at 45. The Home Office suggested that the age should be at least 50.

Public Health (Ireland) Bill.

The Public Health (Ireland) Bill has received a third reading in the House of Commons. It provides that any urban district council in Ireland may, in addition to any existing powers, make by-laws providing for the inspection of all meat intended to be sold within the urban district for human consumption, and prohibiting the sale of meat within the urban district for human consumption except after inspection in accordance with the by-laws.

University of Wales (No 2) Bill.

Sir DAVID BRYNMOR JONES made an unsuccessful attempt at the time of unopposed business on Monday, July 3rd, to obtain a second reading for the University of Wales (No. 2) Bill.

HOUSE OF COMMONS.

THURSDAY, JUNE 29TH.

National Insurance Topics.

Mr. ASTOR asked the Chancellor of the Exchequer whether a woman confined in a hospital or other institution would receive maternity benefit under the provisions of the National Insurance Bill; and, if so, would any portion of it be given to the institution.—Mr. LLOYD GEORGE replied: The answer to the first part of the question is in the negative and the second does not arise. I am in communication on this matter with persons responsible for the management of homes which receive maternity cases.

Mr. ASTOR also asked the right honourable gentleman how soon after the commencement of the National Insurance Bill after it had passed into law an insured person would be entitled to sanatorium benefit.—Mr. LLOYD GEORGE answered: An insured person, if a Local Health Committee considers the case one suitable for sanatorium treatment, may be entitled to sanatorium benefit as from the commencement of the Act.

Mr. CASSEL asked the right honourable gentleman what was the average number of days of sickness or invalidity under the German insurance law in the last year for which the figures were published, and what was the average number of days allowed for in the actuarial calculations under the National Insurance Bill; and whether the average number of days of sickness and invalidity under the German law had shown any tendency to increase, and, if so, at what rate.—Mr. LLOYD GEORGE said in reply: The average number of days' sickness recorded for persons insured under the German Sickness Insurance Law in 1908 (the latest year for which complete returns have been published) was eight and a half. As compared with 1904, when sickness benefits were extended from 13 to 26 weeks, there was in 1908 an increase of about half a day per head of all persons insured. These figures cannot be used without qualification for comparative purposes inasmuch as many of the German sickness funds exercise their right to grant sickness benefits up to 52 weeks. No record is kept of the duration of sickness or disablement continuing beyond the period for which the sickness funds are liable. The number of days sickness assumed by the actuaries at each age separately for the purposes of their calculations for the National Insurance Bill is shown on p. 40 of their report. The average number per head of persons of all ages insured would require a fresh calculation.

Mr. CASSEL: Do the figures which the right honourable gentleman gave for Germany include invalidity as well as sickness or sickness only?

Mr. LLOYD GEORGE: Will the right honourable gentleman put down that question? I am not quite sure of that point.

In answer to Lord BALCARRES, Mr. LLOYD GEORGE said that on Wednesday the Government would submit a motion allocating time to the remaining stages of the National Insurance Bill.

Mr. NEWMAN asked the right honourable gentleman whether, in view of the pronouncement recently made by the Irish Bench and Bishops, in addition to the resolutions passed by the public bodies, it was the intention of the Government to withdraw the National Insurance and Unemployment Bill in the case of Ireland; and, if so, whether a general recasting of the actuarial figures on which the Bill had been based would be necessary.—Mr. LLOYD GEORGE replied: The Government have no present intention of excluding Ireland from the advantages of the National Insurance Bill.

Vaccination in Halifax.

Mr. JAMES PARKER asked the President of the Local Government Board what were the number of births, of successful vaccinations of infants, and of declarations of conscientious objection to vaccination in the borough of Halifax in the years 1905, 1906, 1907, 1908, 1909, and 1910 respectively.—Mr. BURNS furnished the following written reply: The registration subdistricts of North and South Halifax are not exactly coincident with the borough, as they contain a small area outside. The figures for these districts, so far as they are available, are as follows:—

Year.	Number of births registered.	Number of these births entered by the vaccination officer as successfully vaccinated.	Number of successful primary vaccinations at all ages.	Number of certificates of conscientious objection
1905 ...	2168	1287	No information.	
1906 ...	2165	1190	1528	235
1907 ...	2038	858	1143	275
1908 ...	2207	754	894	1067
1909 ...	1966	474	721	1002
1910 ...	1994	Not yet known.	509	1132

MONDAY, JULY 3RD.

The Sale of Milk.

Replying to Mr. BARNSTON, Sir EDWARD STRACHEY said: The Board of Agriculture has under consideration the existing provisions of law relating to the sale of milk, and inquiries are being made as to the manner in which it is at present administered by local authorities. The existing regulations are based upon the very complete inquiry made by a Departmental Committee some few years ago, and the minutes of evidence were presented to Parliament.

National Insurance Topics.

Mr. DAVID DAVIES asked the Chancellor of the Exchequer whether the sum set apart for sanatorium benefit in the Insurance Bill was to be confined exclusively to the relief of insured persons, or whether it was to be applied in such a way as to make provision for uninsured persons as well.—Mr. LLOYD GEORGE replied: The annual sum set apart for sanatorium benefit being derived mainly from the contributions of insured persons and their employers will be confined exclusively to the relief of insured persons. But the sanatoriums which receive grants of the capital sum set apart from last year's realised surplus will be able to take other patients.

Mr. DAVID DAVIES further asked the right honourable gentleman whether the scope of sanatorium benefit in the National Insurance Bill was limited to the treatment of tuberculosis in sanatoriums and similar institutions, or whether it included provision for education, tuberculosis exhibitions, early diagnosis, after care, and other means for the prevention and cure of this disease.—Mr. LLOYD GEORGE answered: It is not intended to confine the treatment of tuberculosis to sanatoriums, but the words of the Bill are intended to make it possible for the disease to be treated at clinics which could be established locally and in which the proper means to be taken for the prevention and cure of the disease could be taught. The Bill also provides that a portion of the fund available for the benefit can be applied to research.

Sir PHILIP MAGNUS asked whether demonstrators and assistant lecturers in universities and university colleges who, in consideration of the educational advantages they secured by acting as assistants to distinguished professors, were content to accept salaries of less than £160 per year, would be compelled to insure under the compulsory schemes of the National Insurance Bill; and whether the universities and colleges, as employers, would be obliged on behalf of such persons

to contribute to the insurance fund.—Mr. LLOYD GEORGE said in reply: The answer to both parts of the question is in the affirmative.

Major WHITE asked whether the Chancellor of the Exchequer had received any communications from associations of medical herbalists with regard to the National Insurance Bill, and whether he was prepared to give any facilities under the Bill to those insured persons who preferred to undergo herbalist treatment rather than that of the ordinary medical practitioner.—Mr. LLOYD GEORGE answered: I have received such communications, and they are receiving my consideration.

Mr. JAMES THOMAS asked the right honourable gentleman whether Section 13 of the National Insurance Bill, which provided for fines and suspensions of benefit for cases of misconduct, was intended to cover persons who refused to be vaccinated, even if ordered by a medical man; and, if such provisions were intended, whether he would so amend this section as to give every right to all those holding conscientious objections to vaccination.—Mr. LLOYD GEORGE replied: The rights of all conscientious objectors will, of course, be safeguarded under the Bill.

Sir W. P. BYLES asked the Prime Minister whether he had any communication to make to the House as to the Government's intentions with reference to the time to be allocated to the National Insurance Bill.—Mr. ASQUITH answered: It was proposed to have a special resolution which would give what the Government conceived to be a very liberal arrangement of time for this Bill. However, inquiry justifies us in the hope that we may secure the passage of the Bill in an equal time, or in less time, under the ordinary Standing Orders of the House. We shall be guided in our future action by the rate of progress which the Bill makes.

TUESDAY, JULY 4TH.

Vaccination Statistics.

Colonel RAWSON asked the President of the Local Government Board to state the number of births registered for the years 1903 to 1906, the number recorded as successfully vaccinated, and the number of certificates of exemption received in respect of such births; also the number of births registered for the years 1907 to 1910, the number recorded as successfully vaccinated, and the number of certificates of exemption received in respect of such births.—Mr. BURNS wrote in reply: The information which the honourable Member desires has not yet been received in respect of the year 1910, but the following statement gives the figures in respect of each of the years from 1903 to 1909, inclusive:—

Year.	Births.	Vaccinations.	Exemptions.
1903	948,271	714,637	37,675
1904	945,389	711,504	40,461
1905	929,293	705,040	44,369
1906	935,081	686,992	53,828
1907	918,042	651,060	76,709
1908	940,383	594,792	160,350
1909	914,472	547,251*	197,326*

* These figures are approximate and liable to correction.

Vaccination Officers.

Captain FABER asked the President of the Local Government Board whether vaccination officers had to send to parents a notice, Form Q, which put these parents in the way of obtaining exemptions from vaccination; whether exemptions were rapidly on the increase, seriously affecting the position of vaccination officers in a pecuniary sense; and whether he would consider the advisability of rewarding vaccination officers whether exemptions were granted or not.—Mr. BURNS furnished the following written reply: Vaccination officers are required, in the case of each child who has attained the age of three months and seven days without their having received a certificate of a kind with respect to its vaccinal condition, to send a notice known as Form Q to the parent, the object of which is to ascertain whether the parent intends to do as to the vaccination of the child, and so save the vaccination officer the trouble of visiting the home for this purpose. Exemptions have increased, and in such cases the vaccination officer does not, of course, receive payment in respect of the registration by him in his register of the successful vaccination of the child. Where a vaccination officer has suffered loss of income in consequence of the increase of exemptions I have approved proposals of boards of guardians to award him compensation.

The Teaching of Hygiene.

Mr. FERENS asked the President of the Board of Education how many of the education authorities were using the syllabus issued by the Education Department for the teaching of hygiene and temperance, and how many individual schools was the syllabus regularly used.—Mr. RUNCIMAN wrote, in reply: The syllabus of lessons on temperance for scholars attending public elementary schools issued by the Board of Education in 1909 is in use in the areas of 214 of the local education authorities of England and Wales. It is not to be inferred that in the case of the remaining 108 authorities no lessons on temperance are given. The Code commends the instruction of the older children in hygiene, particularly in relation to food and drink, including alcohol. Lessons on this subject as are not based on the new official syllabus of 1909 will be found as a rule to follow the suggestions for the teaching of hygiene and temperance which were issued in 1905. I am unable to obtain information as to the actual number of schools in which the syllabus is used. Such information could only be obtained by an inquiry addressed to each of the public elementary schools in the country, which number more than 22,000.

WEDNESDAY, JULY 5TH.

National Insurance Bill.

The House went into Committee, and after deciding not to deal with the Bill in two parts under its heading of Invalidity and Unemployment, proceeded with Clause I., which defines the persons to be insured. Two far-reaching amendments were approved of, especially securing that the class of voluntary contributors shall be limited to persons whose income does not exceed £160. The compulsory character of the insurance was maintained, and extension of benefits to married women refused, with the understanding that later the possibility of including married women, formerly contributors, will be considered, while Clause 34 is under debate.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.
Bibliothèque de Thérapeutique. Publiée sous la Direction de A. Gilbert et P. Carnot. Thérapeutique des Maladies Respiratoires et de la Tuberculose Pulmonaire. Par les Docteurs Ed. Hirtz Rist et Ribadeau-Dumas, Tuffier et J. Martin, Kuss. Price Fr.14.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.
On Writing Theses for M.B. and M.D. Degrees. By H. D. Rolleston, M.D., F.R.C.P., Senior Physician, St. George's Hospital. Price 1s. net.

HIRZEL, S., VERLAG VON, Leipzig.
Lehrbuch der Pathogenen Mikroorganismen. Die Pathogenen Bakterien. Für Studierende und Aerzte. Von Dr. Paul V. Baumgarten, Professor der allgemeinen Pathologie und der pathologischen Anatomie an der Universität Tübingen. Price, paper, M.24; Halbfranz, M.26.50.
Handbuch der Hygiene. Herausgegeben von Prof. Dr. M. Rubner, Geh. Medizinalrat, Berlin; Prof. Dr. M. v. Gruber, Obermedizinalrat, München; und Prof. Dr. M. Ficker, Berlin. II. Band, 2. Abteilung. Wasser und Abwasser. Price, paper, M.15; Halbfranz, M.18.

JAMES AND SONS, Thakurdwar, Bombay.
Physiology of the Central Nervous System and the Special Senses. (For the Use of Students.) By N. J. Vazifdar, L.M. & S. Price Rs.2, post free, or 2s. 8d.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, 64, West 56th Street, New York.
Nervous and Mental Disease Monograph Series No. 8. Mental Mechanisms. By William A. White, M.D., Author of "Outlines of Psychiatry," Superintendent, Government Hospital for the Insane, Washington, D.C. Price $2.00.

KARGER, S., Berlin.
Psychiatrische Vorträge für Aerzte, Erzieher und Eltern. (Zweite Serie.) Prof. Dr. G. Anton, Direktor der Klinik für Geistes und Nervenkranke in Halle a. S. Price M.2.
Die Pathologie des Wachstums im Säuglingsalter in ihren Beziehungen zu allgemein biologischen Problemen und in ihrer Bedeutung für die Klinik. Von Dr. Ernst Schloss. Price, paper, M.5; bound, M.6.20.
Kurzgefasste Chirurgische Operationslehre (Operationskurs). Für Studierende und Aerzte. Von Dr. Ad. Oberst, I. Assistent an der Chirurg. Klinik und Privatdozent für Chirurgie an der Universität Freiburg i. Br. Price, paper, M.6.20; bound, M.7.
Die palpablen Gebilde des normalen menschlichen Körpers und deren Methodische Palpation. Nach eigenen Untersuchungen an der Leiche und am Lebenden. Von Dr. Toby Cohn, Nervenarzt in Berlin. III. Teil: Hals und Kopf. Price M.8.
Uber Scharlach (der Scharlacherkrankung zweiter Teil). Von Dr. Dionys Pospischill, k.k. Primararzt und Dr. Fritz Weiss, gew. Assistent der Abteilung. (Aus dem Kaiser Franz Josef-Regierungs-Jubiläums-Kinderspitale der Gemeinde Wien. (Injektionsabteilung für Kinder im k.k. Wilhelminenspitale.)) Price M.5.
Beiträge zur Technik und dem klinischen Werte der Rektoromanoskopie. Von Dr. Ludwig v. Aldor in Karlsbad. (Sonder-Abdruck aus Band XVII. (1911), Archiv für Verdauungs-Krankheiten.) Price not stated.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.
Scots in Canada. A History of the Settlement of the Dominion from the Earliest Days to the Present Time. By John Murray Gibbon. With Twelve Illustrations, by Cyrus C. Cuneo and C. M. Sheldon. Price 1s. net.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)
A Treatise on Diseases of the Eye. By John Elmer Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University). Price 30s. net.

MASSON ET CIE, Paris.
La Méningite Cérébro-Spinale. Par MM. Arnold Netter, Professeur agrégé à la Faculté de Paris, Médecin de l'Hôpital Trosseau et Robert Debré, Ancien interne-lauréat des Hôpitaux de Paris. Price, Fr.8.

MURRAY, JOHN, London.
The Reduction of Domestic Mosquitoes. Instructions for the Use of Municipalities, Town Councils, Health Officers, Sanitary Inspectors, and Residents in Warm Climates. By Edward Halford Ross, M.R.C.S. Eng., L.R.C.P. Lond., Liverpool School of Tropical Medicine, late Health Officer, Port Said and Suez Canal District. Price, 5s. net.

REBMAN, LIMITED, London.
The Human Atmosphere or the Aura Made Visible by the Aid of Chemical Screens. By Walter J. Kilner, B.A., M.D. Cantab., M.R.C.P., &c., late Electrician at St. Thomas's Hospital, London. Price 30s. net, complete, including the necessary chemical screens in a box and book of 36 Perforated Diagnosis Charts.
Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. A Concise Introduction to the Principles of Clinical Localisation in Diseases and Injuries of the Central Nervous System. By Robert Bing, Privat-docent for Neurology in the University of Basle. Translated by F. S. Arnold, B.A., M.B., B.Ch. Oxon. Price 10s. 6d. net.

SCHOETZ, RICHARD, Wilhelmstrasse, 10, Berlin.
Die Röntgenstrahlen in der Gynäkologie mit einem Ausblick auf ihren künftigen Wert für soziale und sexuelle Fragen. Von Dr. med. Manfred Fraenkel, Charlottenburg. Price, paper, M.7.50; bound, M.8.50.

WERNER UND HÖRNIG (Inh. OTTO LYCHENHEIM), Lübeck.
Zwanzig Jahre Kranken- und Invalidenfürsorge der Landes-Versicherungsanstalt der Hansestädte. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARTLETT, C. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tintern District of the county of Monmouth.

CROWE, J. T., L.S.A. Lond., L.M.S.S.A. Lond., has been appointed Medical Officer to the P. F. Collier Dispensary for the Prevention of Tuberculosis, Charles-street, Upper Ormond Quay, Dublin.

LAWSON, G. G., M.B., B.S. Vict., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hebden Bridge District of the county of Yorks, West Riding.

RENNET, D., M.D. Aberd., D.P.H., has been appointed Medical Officer of Health of Chester.

THOMSON, GEORGE, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Royal Hospital for Diseases of the Chest.

WALLIS, B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Helston District of the county of Cornwall.

WINCKWORTH, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Taunton District of the county of Somerset.

YEOMAN, J. B., M.D. Edin., F.R.C.S. Edin., has been appointed Medical Officer of Health to the Wirrall Rural District Council and six combined Urban District Councils.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDARE EDUCATION COMMITTEE. — Medical Inspector of School Children. Salary £250 per annum.

ABERDEEN PROVINCIAL COMMITTEE FOR THE TRAINING OF TEACHERS.—Medical Officer and Lecturer on School and Personal Hygiene. Salary £400 per annum.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer and Pathologist. Salary £150 per annum, with board, apartments, and laundry.

BIRMINGHAM EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

CAMBERWELL, GORDON-ROAD WORKHOUSE, Peckham.—Assistant Medical Officer. Salary £120 per annum, with apartments, board, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, unmarried. Salaries £80 and £70 per annum respectively, with board, lodging, and washing.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, attendance, &c.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four or six months. Salary at rate of £50 per annum, with board, lodging, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. —Resident Medical Officer, unmarried. Salary £200 per annum, with board, and residence. Also House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon and House Physician, both unmarried, for six months. Salary in each case £30, with board, residence, &c.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—House Surgeon. Salary £50 per annum, with board and laundry.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LONDON HOSPITAL, E.—Six Honorary Dental Surgeons.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms attendance, board, and washing.

NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £100 per annum, with residence and board.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Two House Surgeons Salary £80 each per annum. Also Casualty Officer, unmarried Salary £60 per annum. All with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, un married. Salary £160 per annum, with apartments, attend ance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salar £100 per annum, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Resident Assistant Medic Officer, unmarried. Salary £130 per annum, with apartments board, washing, and attendance.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, f six months. Salary £60 per annum, with board, residence, an washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E —House Surgeon and Two House Physicians, all for six month Salary in each case at rate of £80 per annum, with board, re dence, and washing.

RICHMOND (SURREY) ROYAL HOSPITAL. — Locum Tenens (Assistan House Surgeon) for eight weeks. Salary 3 guineas per week, wi apartments, board, &c.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third Hou Surgeon. Salary at rate of £50 per annum, with board a residence.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E. Assistant Resident Medical Officer, unmarried, for six month Salary at rate of £80 per annum.

ST. MARY'S HOSPITAL, London, W.—Ophthalmic Clinical Assistan Salary at rate of £50 per annum.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Offic Salary £60 per annum.

SHROPSHIRE EDUCATION COMMITTEE.—Medical Inspector in the Pub Elementary Schools. Salary £250 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL House Physician. Salary £100 per annum, with rooms, board, a washing. Also Junior House Surgeon. Salary £60 per annum, w rooms, board, and washing.

SOUTHEND-ON-SEA, BOROUGH OF.—Assistant Medical Officer of Hea and Assistant School Medical Officer. Salary £250 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for months. Salary £75 per annum, with board, washing, attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Med Officer, unmarried. Salary £140 per annum, with apartmen board, washing, &c.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary per annum, with board, lodging, and laundry.

WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assist Medical Officer. Salary £140 per annum, with board, &c.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Ju House Physician. Salary £75 per annum.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—H Surgeon. Salary £80 per annum, with apartments, board, laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—H Surgeon for six months. Salary £80 per annum, with b rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., notice of a vacancy as Certifying Surgeon under the Factory Workshop Act at Bexhill-on-Sea, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

APPLEYARD.—On July 3rd, at 2, Marlborough-road, Bradford, the of William Appleyard, F.R.C.S., of a daughter.

SPRAWSON.—On June 27th, at Crouch Hall-road, Crouch End wife of Francis E. Sprawson, M.R.C.S., L.R.C.P., L.D.S., daughter.

MARRIAGES.

DAVIS—RUSSELL.—On July 1st, at Balham Congregational Chur the Rev. H. H. Carlisle, Edward David Davis, M.R.C.S., L.R of 81, Harley-street, to Mildred, daughter of H. C. Russell, and Mrs. Russell, Red House, Streatham Hill.

HURTER—ROME.—On July 1st, at St. Michael's-in-the-H Liverpool, by the Rev. R. Lorimer Rome, M.A., Rector of H (uncle of the bride), assisted by the Rev. Canon Grenside, V Melling, Carnforth, and the Rev. A. F. Thornhill, M.A., V the Parish, Herbert Richard Hurter, M.D., son of the late Fer Hurter, Ph.D., M.A., and of Mrs. Hurter of Cressington P Dorothy Edith, eldest daughter of Thomas Rome of Liverpoo

MASSY-MILES—INGLE.—On July 5th, at Zion Church, Rathgar, by Rev. Canon Miles, M.A., Rector of Pangbourne, Berks (f the bridegroom), assisted by the Rev. W. J. Clarke, D.D., R the Parish, Harry Godfrey Massy-Miles, L.R.C.P. & S. Irel Marlborough-road, St. Albans, to Charlotte Elizabeth Jos eldest daughter of the late Arthur F. Ingle, Inspector of Post Offices, and of Mrs. Ingle of 24, Grosvenor-place, D Dublin.

DEATHS.

BROWN.—On June 28th, at his residence, Willesden-lane, N.W., Surgeon Thomas Edwin Burton Brown, M.D., C.I.E., aged 7

LOWDELL.—On June 26th, at Hampstead, Edward Lowdell, M in his 88th year.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL SPECIALISTS IN ANCIENT ROME.

A LATIN inscription discovered in Rome affords a further proof of the existence of medical specialists under the Roman Emperors, for in referring to a certain Secundus it bestows upon him the title of "medicus auricularius." He was a freedman of Tiberius. Another specialist with the same appellatives may be found in the Corpus of Latin Inscriptions, Volume VI., text 8908, and a passage in the Digest of the celebrated jurist Ulpian plainly indicates the medical specialist as flourishing in his era: "Medicos fortassis quis accipiet etiam eos, qui alicuius partis corporis vel certi doloris sanitatem pollicentur: ut puta si auricularius, si fistulæ vel dentium." Of course, the medici oculorii are familiar not only for their epitaphs but for their seals. It is not perhaps so well known that "medici chirurgi" are mentioned in at least three inscriptions in the Corpus of Latin texts.

CARBON DIOXIDE SNOW AS A SKIN ANÆSTHETIC.

To the Editor of THE LANCET.

SIR,—Whether we be physicians or surgeons, workers in vaccines or electro-therapeutists, none of us can in these days afford to ignore the hypodermic syringe. Yet some nervous patients dread the needle almost as much as a major operation. Considering the formidable appearance of some of these instruments, and their oftentimes more than doubtful sharpness, this alarm is not altogether unreasonable. In the past pure carbolic acid and the ethyl-chloride spray have been much used as a means of dulling the pain of the needle-prick. To rely on them absolutely, and to promise a patient that no pain will be felt, is, however, to risk being subsequently told that the truth is not in you. But if the skin be first frozen for from 5 to 10 seconds with a pencil of CO_2 snow, the immediate insertion even of a large needle produces no sensation whatever. In the case of healthy skin and subjacent tissues the method is infallible, but it should be remembered that, say, in the case of an abscess, the mere *pressure* necessary to effect ingress will cause some amount of pain. By this means sera, vaccines, radium-emanation, and the like, can be injected into the most cowardly; had I no other use for my CO_2 apparatus I should consider it well worth the money as an adjunct to hypodermic medication.—I am, Sir, yours faithfully,

Bishop Auckland, June 27th, 1911. FRANCIS HERNAMAN-JOHNSON.

CRUSADE AGAINST CONDENSED MILK.

IN THE LANCET of June 24th, 1911 (p. 1737), it was stated that the Bureau of Chemistry of the United States Department of Agriculture has recommended the prosecution of certain manufacturers of condensed milk, and that the Bureau finds that much of this milk is dangerous as a food for infants. The Nestlé and Anglo-Swiss Condensed Milk Company informs us that the "condensed milk" in question is what is known in this country as "condensed machine-skimmed milk"—a product which has small right to the title of "milk."

DIET DURING MERCURIAL TREATMENT.

To the Editor of THE LANCET.

SIR,—I will thank you or some of your readers to inform me whether the old view that meat ought not to be given during an acute course of mercury still holds the field. I have chiefly in my mind mercury given for syphilis. Animal food during a prolonged chronic course of mercury is not, I take it, prohibited.

I am, Sir, yours faithfully,

June 20th, 1911. SENEX.

*** We are not aware of any such restriction, nor can we find any mention of it in the principal text-books on diet and on the treatment of syphilis. Care should, of course, be taken that the diet is plain and simple in character.—ED. L.

NEW INFANTS' WEIGHT CHART.

WE have received an infants' weight chart designed by Henry D. Kelf and published by S. Maw, Son, and Sons. This chart is for family or institutional use; it is simple and well designed. It contains spaces for the registration of the daily weights for the first fortnight and after that for weekly weighings up to the end of the first half year. This chart, numbered 4, follows the same idea as Nos. 1, 2, and 3 weight charts published by Mr. Kelf in 1902.

WARWICK X RAY PLATES.

WE have received from the Warwick Dry Plate Company of Warwick specimens of their plates for trial and report. They were first subjected to the test of keeping power, and in this respect they were in every way satisfactory. All workers in medical radiography require great speed in the plates they use, and the statement can be made in regard to the examples sent for inspection that the period of exposure was particularly short. Another very important consideration in radiography is the question of density; and here, again, the Warwick X ray plates were found to satisfy all requirements. In regard to brilliancy and detail these plates can be safely recommended to practitioners.

F. G. M. R.—1. We understand that "Spirone" has been tried in some chest hospitals and sanatoriums and that it sometimes gives relief to the cough of chronic respiratory affections. It is given as an inhalation in cases of pulmonary tuberculosis, asthma, and chronic bronchitis. It cannot, however, be regarded as a specific treatment, but may be given for the relief of symptoms. 2. In regard to the suitability of South Africa for patients with bronchitis, the high uplands of the veldt country are suitable for most pulmonary complaints, since the summer months are dry and warm and the winter is temperate, but the coast regions are not good for these patients.

"*Spes*" wants information as to the preparation (French) "dioradin"; the proprietor claims that the preparation contains terpin and iodin with radium and that it can be subcutaneously injected with good results in pulmonary tuberculosis.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 13th and 14th (Oxford).—Oxford Ophthalmological Congress.
,, 13th and 14th (Dublin).—Seventieth Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland.
,, 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 24th–August 2nd (Belfast).—Health Exhibition in connexion with above Congress.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th–29th (London).—Universal Races Congress.
,, 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Études Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th–7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–15th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.

Sept. 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th–23rd (Rome) Seventh International Congress of Dermatology and Syphilology.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Rome).—Seventh International Congress on Tuberculosis.
,, 25th–29th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 28th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.

September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
,, (London).—Bakers' and Confectioners' Exhibition.
,, (Manchester).—Second Conference of the British Hospitals Association.

September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Oct. 1st–4th (Liége).—Second Congress of Alimentation.
,, 2nd–5th (Turin).—International Congress of Pathology.
,, 2nd–6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
,, 2nd–7th (Dresden).—Third International Housing Congress.
,, 2nd–7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
,, 3rd–6th (London).—Dairy Show.
,, 5th–8th (Turin).—Fourth National Congress of Hygiene.
,, 9th–12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
,, 9th–13th (Cologne).—Seventh International Congress of Criminal Anthropology.
,, 22nd and 23rd (Lyons).—Twelfth French Congress of Medicine.
,, 25th–27th (New York City).—Annual Conference of Sanitary Officers of the State of New York.

October (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
,, (Paris).—First Congress of the International Medical Association for the Prevention of War.

November (London).—Motor Exhibition.
,, (Manchester).—Smoke Abatement Exhibition.

Dec. 4th–9th (Havana, Cuba).—American Public Health Association.

December (Moscow).—Third Pan-Russian Therapeutical Congress.

In 1912:—
Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Spring (London).—Second Optical Convention.
May 31st–June 2nd (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
May (London).—International Horticultural Exhibition.
July (Liverpool).—British Medical Association, Eightieth Annual Meeting.
Sept. 23rd–28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
September (Prague).—International Congress of Radiology and Medical Electrology.
(Budapest).—Tuberculosis Exhibition.
(Stockholm).—Olympic Games.

In 1913:—
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Chicago).—Congress of the International Association of Refrigeration.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 5th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 29	30·21	S.W.	...	117	70	60	59	63	Cloudy
,, 30	29·83	S.W.	0·17	92	63	55	56	58	Cloudy
July 1	29·67	S.W.	...	107	64	56	56	61	Cloudy
,, 2	29·85	W.	...	123	68	51	52	57	Cloudy
,, 3	30·28	N.W.	...	121	69	51	51	58	Cloudy
,, 4	30·47	S.W.	...	123	73	55	55	62	Fine
,, 5	30·44	S.W.	...	118	79	61	60	66	Overcast

Medical Diary for the ensuing Week.

SOCIETIES.

NEW LONDON DERMATOLOGICAL SOCIETY, Cavendish Rooms, Mortimer-street, W.

THURSDAY.—4.30 P.M., Meeting.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens will be shown by Mr. Lawford, Mr. F. Moxon, Mr. Roll, Mr. Greeves, Mr. Cruise, and Mr. McMullen. Paper:—Mr. W. H. Jessop: Monocular Lid-wink as a Diagnosis of Long-standing Amblyopia. The Annual General Meeting will follow immediately after the Ordinary Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. J. B. R. McDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Lupus and its Treatment.
TUESDAY.—4 P.M., Dr. R. A. Young: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Hadley: Prognosis in Heart Disease.
WEDNESDAY.—4 P.M., Mr. H. S. Pendlebury: Clinique (Surgical). 5.15 P.M., Lecture: Dr. F. W. Price: Some Newer Conceptions of Cardiac Disorders (illustrated by the polygraph).
THURSDAY.—4 P.M., Dr. W. P. S. Branson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. C. Fox: The Erythemata.
FRIDAY.—4 P.M., Mr. C. J. Heath: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: The Use of Solid Carbon Dioxide.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Simson: Acute Conditions of the Fallopian Tubes.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture VI.)
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture V.)
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Pyuria as a Symptom of Urinary Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Dr. H. Pirie: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Mr. S. Boyd: The Surgical Treatment of Empyema.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Ear.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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The Lumleian Lectures

ON

A CLINICAL STUDY OF CARDIO-VASCULAR DEGENERATION.

Delivered before the Royal College of Physicians of London

BY J. MITCHELL BRUCE, M.A., LL.D. HON. ABERD., M.D. LOND., F.R.C.P. LOND.,

EMERITUS LECTURER ON THE PRACTICE OF MEDICINE AT, AND CONSULTING PHYSICIAN TO, CHARING CROSS HOSPITAL, ETC.

LECTURE II.[1]

Delivered on March 28th.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—In my first lecture I dwelt upon the importance of tracing cardio-vascular degeneration in every instance to one or other of its recognised causes, and I gave figures of the relative frequency of these in 100 cases of my own, casually taken. I then proceeded to examine the clinical characters peculiar to the disease as it is produced by several causes, beginning with syphilis.

A METABOLIC GROUP.

Passing from the consideration of the syphilitic group, let me give you an outline of a case which will introduce us to the next group that I have arranged to submit to your consideration.

A patient was sent to me complaining of attacks of a sense of fulness of the head and inability to conduct his business, partly at least a result of a severe course of treatment at Harrogate based on a diagnosis of free living. His heart was large, his radial thickened, his blood-pressure low. He gave me a history of syphilis, and this appeared to be reasonably regarded as the cause of the cardio-vascular changes and the cerebral disturbance. But closer examination revealed other features of the case which enabled me to correct my first impression. There was no physical evidence of valvular disease or of aortic atheroma, and the urine proved to contain a small percentage of sugar with a very moderate specific gravity. Suspicion was now diverted from syphilis to metabolic disorder as the cause of the disease, consequent on free indulgence in food and alcohol, and the whole history of the case from the first, including the employment and effect of spa treatment (and, let me add, the course of the case up to the present—fully two years), proves the correctness of the etiological diagnosis.

I have chosen this case, first, to illustrate the possibility and importance of disentangling the possible causes of cardio-vascular degeneration when they come together in a patient's history, and, secondly, to introduce us, as I have said, to another group which I propose to call for purposes of description the metabolic group.

Disorders of nutrition are universally regarded as causes of cardio-vascular degeneration, and the literature on this part of our subject is very extensive. A strict critic might ask with reason in what these disorders, to which we attach so much etiological importance, consist. Can we demonstrate that the blood is deficient in any of its constituents, or that it contains an excess of any of its constituents, or that an abnormal body can be isolated from it and identified and proved to damage the arterial walls and the cardiac valves?

Since I could not answer these questions to satisfy myself, I adopted another evidence of metabolic disorder—the presence of sugar in the urine. This is a test easily employed, and the result cannot be gainsaid.

Clinical Study of Metabolic Group.

I have selected for study at this time the cases of 20 individuals between the ages of 44 and 70 in whom cardio-vascular degeneration proved to be associated with glycosuria. I say glycosuria, not diabetes, for although two patients out of the 20 did die with diabetic coma, the disease belonged in them for a time, and in all the other members of the group from first to last, to the mild senile type, as their ages prove, sugar being small in amount and frequently intermittent in its appearance. Further, along with sugar there was found in 75 per cent. of the cases albumin, also moderate or scanty in amount, and also intermittent.

This is a type of metabolic disorder familiar to all of us, yet, as far as my search has gone, little noticed in the literature of albuminuria and diabetes, with the exception of a paper by Dr. Bence Jones in the thirty-sixth volume of the Transactions of the Royal Medical and Chirurgical Society. In its prognostic significance it is paradoxical, for, although it is an association of two conditions each regarded with concern, it usually is less serious than either of them often proves singly.

The result of a study of this group of cases proved to be interesting, and I venture to say important. In particular, the physical signs are strikingly different from those which we found to characterise syphilis of the cardio-vascular system, as will be apparent presently. Of the 20 individuals, 18 were men of the average age of 57⅔ years, and 2 were women of the average age of 54½. The majority of the men were occupied with professional work or business, involving in some instances not only intellectual stress but worry in different forms and degrees. As for their habits, one-fifth of them were teetotalers, one-half of them used alcohol in moderation, only one was thoroughly intemperate, and the rest of them had "lived freely," as the saying goes. On the other hand, a considerable proportion were known to have eaten to excess. More than one-half of them had led sedentary lives, and had enjoyed but little relaxation during the years of mental work. In more than half the instances they were stout or actually obese; and the disorders and disabilities connected with corpulence naturally complicated their complaints—want of vigour; gastric, hepatic and intestinal disturbances; gall-stones; bilious headaches; and, in a later stage, disease of the retina and paralysis. Gout had occurred from time to time in nearly one-half, mostly taking the irregular forms of eczema, lumbago, sciatica and nodi digitorum.

It was not difficult to appreciate the character and disposition of these subjects of intermittent glycosuria. Possessed of a hearty appetite themselves, they are of distinctly sociable habits. If they have retired from successful work they are sedentary, easy-going and self-indulgent. If they are still engaged in business we find them difficult to control for any length of time, guilty of lapses from our prescribed regimen as often as temptation presents itself in their commercial relations, and ready to express a hearty contempt for small allowances of food and drink. Arterial sclerosis of this type is one of the chronic diseases which, as Sydenham says, "proceed from ourselves." A fact of great importance in its bearing on causation in these individuals is that in at least one-quarter of the cases a family history of heart disease was obtained, and of similar or allied metabolic disorders in many of them.

The subjects of degeneration of the heart and arteries associated with glycosuria suffer from all the ordinary symptoms of cardiac disability and distress, variously distributed in the different instances. These I found put prominently forward in 65 per cent. of the cases; in the remaining 35 per cent. the first symptoms did not relate to the circulation directly. Very curiously, the chief complaint was of dyspnœa, whether on exertion or paroxysmal. Next in frequency to this came pain in the chest; and it is worth recording that whereas in syphilis of this region pain is in half the cases anginal—that is, referable to the aortic area, it is in glycosuric cases quite three times as often strictly præcordial—that is, regionally related to the heart.

Physical Signs.

But it is when we come to the physical signs that the differences between the clinical characters of these two great groups of cases of cardio-vascular degeneration point unmistakably to the areas affected by syphilis and metabolic disorders respectively—differences so marked as to be diagnostic. In glycosuric cases the aortic diastolic murmur which figures so largely in syphilis (50 per cent.) was never found. On the other hand, an apical systolic murmur, which it will be remembered is relatively uncommon (only 10 per cent.) in syphilis, was present in no fewer than 55 per cent. of metabolic cases. These figures may not appeal to us as first, but let me suggest that in them we find not only one useful means of making a differential diagnosis of the nature of degeneration of the cardiac valves, but also an evidence that whilst syphilis is a selective process in the

[1] Lecture I. was published in THE LANCET of July 8th, p. 69.

distribution of its lesions, and affects the arch of the aorta in particular, degeneration in association with glycosuria is not so. Not that it spares the aorta, if we can rely on clinical evidence, for in more than one-half of my cases I found a direct basic murmur, and in 35 per cent. of them manubrial percussion-dulness. But, if my observations are to be trusted, the morbid process does not descend on the aortic cusps as we saw that it descends in syphilis; or, if it do so descend, it is not so severe or so damaging as to render them incompetent, and this although it can be observed invading the mitral valve along with the aortic arch.

The heart was found to be enlarged in more than 80 per cent. of the cases. In more than half of these instances the impulse was weak or altogether imperceptible; and, where there was no murmur present, both sounds often were found feeble, a loud ringing second sound in the aortic space being infrequent. With a large and relatively feeble heart it is more than possible that the apical systolic murmur so often met with may have been dynamic; and in support of this interpretation of it are the facts that I have repeatedly found it variable—that is, that it may be intermittent, and that in one patient it once was lost immediately after walking exercise and again after a little whisky. In the last stage of the disease—cardiac failure—these signs naturally are modified.

The characters of the radial artery and pulse on the whole correspond with these observations on the heart. I found the vessel sclerosed in 80 per cent., but a tension above the ordinary in only 10 per cent.; indeed, in 65 per cent. the pulse was definitely soft. Thus the pathological process in this type of cardio-vascular degeneration again appears to be general, not local or selective, in distribution, and to be characterised by deficient vascular tone as well as by cardiac feebleness. The pulse is often found irregular, and I have been struck by the relative frequency of tachycardia in these glycosuric subjects.

Clinical Course.

The clinical course of cardio-vascular degeneration associated with glycosuria is usually slow. In a few instances the patient comes to us so early with a complaint of debility, that along with this and glycosuria and some or all the characteristic features that I have sketched, we may find an irregular pulse and præcordial oppression or actual pain, but no physical signs of actual lesion, no radial sclerosis, no aortic murmur, no mitral murmur. But far more commonly by the time that we are consulted the evidences of degeneration are already unmistakeable. Of my complete series of 38 cases which I analysed from this point of view, I found that the first symptoms were on an average referred to the fifty-second year of life. The non-fatal cases when I last heard of them had lived 8½ years. Of those whom I succeeded in tracing, 31·5 per cent., after suffering for 12½ years, had died at an average age of 62 years. These average figures, so different from those which we found under syphilis, are of real diagnostic value and of general prognostic value also. But they are of little value in individual prognosis. A friend of my own, who died at 65, had had intermittent glycosuria for 32 years under the care of Dr. Pavy, Dr. William Ord, and myself in succession. For the last seven years, at least, of his life his radial arteries were the thickest I had ever felt, and at last he was found dead in bed, after having complained for only two days of acute and persistent pain across the upper sternum and between the scapulæ. Death in this sudden fashion is not an exceptional termination of these cases. It occurred in 25 per cent. of those traced to a fatal determination. 18 per cent. of the same patients died with coma, 9 per cent. with paralysis, some with angina pectoris, and a few from ordinary cardiac failure with dropsy. I have observed at least one case drifting slowly into chronic nephritis.

In connexion with the clinical course of associated glycosuria and arterial sclerosis there can be no question but that cases are met with in which cardio-vascular symptoms have preceded the discovery of sugar by many years. It might be contended that this observation proves that the association is accidental only, not organic. It may be so in a few instances. But we must not forget that (as Bence Jones said many years ago) glycosuria in old age may pass entirely unnoticed, partly because it is intermittent, partly (as I have already ventured to remark) because the busy practitioner may be tempted to be satisfied with the discovery of cardiac disease and a thickened pulse, and not trouble to search for sugar. Further, I am quite willing to accept the opinion of some authorities, based on post-mortem evidence, that glycosuria is occasionally an effect, not the cause, of cardio-vascular disease—an effect of sclerosis of the pancreatic arteries.

It is unnecessary for me to ask under which of the two great classes of influences, nutritional or dynamic, that affect the walls of the heart and arteries unfavourably this group of cases falls. In their very essence they involve malnutrition, and we have found that only in exceptional instances is the blood pressure other than low. Professor Osler, in discussing the causes of arterial sclerosis, mentions "the action of poisons retained within the system." It is worth consideration that tissues which are poisoned by products of mal-assimilation are starved at the same time. The autogenous poisons are products of food materials that have missed conversion into proper elements of nutrition. This, indeed, is proved by the hearty appetite that besets these subjects and leads them, as we have seen, into unfortunate habits of living. Our best authorities maintain that large eating, or, as our distinguished Fellow, Professor Bäumler, phrases it, "Misverhältniss zwischen Zufahr und Verbrauch," raises blood-pressure; and I agree with them. But my experience is that when it does so, gout, not glycosuria without gout as in my present group of cases, is the ready guide to the intimate character of the disorder. Glycosuria, I need not say, produces a profound effect on the nutrition of the tissues. Its occasional association with peripheral neuritis along with arterial sclerosis is a proof of this. A few years ago I was asked to see a gentleman of 65 years, but looking older and worn, who had fallen asleep with his feet on the fender of the hall fire the previous evening, and woke up to find them severely burnt. His medical adviser promptly diagnosed anæsthesia from peripheral neuritis, suspected glycosuria, and found sugar. The tibials proved to be sclerosed, and the patient died in a few days. As neuritis is the result of the supply of impure and impoverished blood to the nerves, so I suggest aortitis is produced in these glycosuric patients. Strain of the walls may follow, but it is an effect of an internal pressure that is not absolutely high, but high in relation to the diminished resistance of diseased walls.

A GOUTY GROUP.

Acute gout is universally acknowledged to be related etiologically to cardio-vascular degeneration. According to my inquiry in the 100 cases already mentioned it was found in no fewer than 44·5 per cent. These include instances in which it was associated with other so-called causes; and, indeed, one of the difficulties of the investigation of the etiology of arterial sclerosis and cardiac degeneration is to eliminate the possibility of gout. Similarly, it is not an easy matter in studying the influence of gout in this connexion to eliminate glycosuria; and I would say at once that the figures which I shall presently give you relate to cases in which no sugar was ever found.

The evidence of true or regular gout that I accepted was the presence or a sufficient history of at least one acute attack of characteristic podagra or acute arthritis elsewhere. Familiar although this type is, let me introduce a short description of it with a typical case:—

A lady who has passed middle age complains of tinnitus only: not of anything directly connected with her heart. Her mother, she says, had a similar trouble and gouty hands; her younger sister, who accompanies her, has nodi digitorum. The patient herself has had acute gout once in her great toe, and her fingers are characteristic. She is temperate in the use of alcohol; but according to her sister, "she eats everything and anything and at any time." She has had no acute disease and has no worry. Now this woman has a maximum blood-pressure of 200 mm., and a mean of 120 mm.; and the radial wall is distinctly thickened. I find a systolic murmur in the aortic area, which is conducted into the carotid, an area of impaired resonance over the manubrium and a systolic murmur at the apex; and there is a good impulse somewhat far to the left. The urine contains neither sugar nor albumin nor casts. Her single complaint is of tinnitus, with deafness of one ear; but she allows that her breath is short on exertion. You will agree with me that this case conforms to a type which we see almost daily.

Like, and yet in some ways unlike, this case of true gout and cardio-vascular degeneration, let me describe that of

another patient which illustrates the relation of irregular gout to disease of the heart and vessels.

A single lady of 51, living in an extremely quiet way, consulted me for what she called "general weakness." This, it was suggested, was a result of devoted attention to her aged and invalid mother. I found that her father had died suddenly; that she had suffered from migraine until she gave up meat, and also from eczema; and that 18 months previously there had occurred a single attack of vertigo and sickness, followed by impairment of hearing and tinnitus. From that date the patient said she "had never been the same woman," and had felt the heart beating in her chest. Nine months later she was taken with pain in the knee on resuming a meat diet. Examination revealed a surprising degree of cardio-vascular degeneration: the heart greatly enlarged, with a heaving impulse; the first sound reduplicated universally; the second accentuated universally, ringing in character over the aortic area, and followed by a diastolic aortic murmur; the radial artery thick and visible, full to the finger, yet half-collapsing in character; the urine over-abundant, of low specific gravity, and very slightly albuminous.

Clinical Characteristics.

As in these two cases, the patient's first complaint to us may be of something connected only indirectly with the heart or vessels, or of the joints. But quite as often it is of pain in the chest, and, let me note, more often, as in syphilis, of anginal than of strictly præcordial pain as in the glycosuric group. Closer inquiry elicits a confession of dyspnœa and palpitation on effort, and of occasional faintness and consciousness of intermittency of the heart. In more than a quarter of all my cases I found albumin and in a few glycosuria; but, as I have already said, these cases I excluded from the present series for the purpose of analysis.

In at least 90 per cent. of cases of cardio-vascular disease associated with gout the heart is found to be enlarged; in one-half of them with a normal or increased impulse—in contrast, let me remind you, with glycosuric cases. Again, as in them, the prominent physical signs are an aortic systolic murmur and an apical systolic murmur, the aortic rather more frequent than the other. Along with these we find what we miss entirely in glycosuric cases, an aortic diastolic bruit, rare indeed, but definitely to be reckoned a possible feature of a gouty heart, reminding us of the angina and the more vigorous impulse, and accompanied in a good many instances with dulness over the manubrium, the whole significant of tension within the arch. Corresponding with this I found the pulse-tension above the normal in about half the cases, and the radial more or less sclerosed in all but a small percentage. In about 15 per cent. the pulse was irregular or intermittent.

With the symptoms and signs proper of this type there are very commonly associated characteristic manifestations of chronic gout. The face presents an uniformly sleek, anæmic appearance, and is often expressive of depression with irritability. Arcus senilis may be noted in the cornea. The fingers are nodous or more markedly deformed. The muscles are soft; the tissues as a whole flabby. The chest is commonly emphysematous in some degree, with the familiar rhonchi of slight catarrh. Digestion is variously disturbed; the liver and bowels are inactive; the urine consequently is abnormal in different respects. The patient's sleep is interrupted in the middle of the night, not by an attack of acute gout, for which he may be longing, but by a fit of unutterable depression, with miserable memories and forebodings of evil. But I need not enlarge this reproduction of a clinical picture familiar to you all. My point is that these characters are of essential value in the diagnosis of the type.

Clinical Course.

No particular age can be named as the time at which the symptoms of cardio-vascular degeneration begin to be felt by gouty subjects. I have records of cardiac distress at 32, but that was in a man who had inherited gout powerfully, and had had to give up athletics after running twice in the 'Varsity sports. On the other hand, gouty men of 70 have told me that they had only just begun to feel their hearts. The average date of the first symptoms in all my cases is the fifty-fifth year. The duration is equally variable—the average in survivors 9½ years, with a maximum of 30 years; in fatal cases, 7 years, with a maximum of 15 years. 35 per cent. of the cases I have seen in the course of the last 13 years have died, but not before the average age of 65, one indeed in his eightieth year and one in his eighty-first, and only one of them before 55. These are dry figures to recount, but obviously they are interesting and also comforting in their prognostic aspect, and not without some value in connexion with life assurance.

The manner of death was various; most commonly with cardiac failure, but frequently with cerebral hæmorrhage or from Bright's disease. Death was sudden in one instance. And some of the patients perished of intercurrent or entirely independent diseases.

It is often possible to trace with clinical exactness the progress of the lesions throughout the cardio-vascular system in these cases of gouty origin. With little or no evidence at first of other than the disorders characteristic of goutiness, there are discovered as year follows on year a direct aortic murmur and enlarged heart, an apical systolic murmur, dulness creeping over the manubrium and down the sternum, possibly a diastolic murmur, a rising blood-pressure, the appearance of albumin, decline of strength and substance, œdema, pulmonary congestion, and the usual train of symptoms and signs characteristic of failure of the heart. In other instances the course of the disease is suddenly interrupted by a fit of apoplexy, which ends in death. Or, short of death, the result may be temporary paralysis, which is repeated again and again, of various degree and distribution, alternately or otherwise associated with attacks of angina or of paroxysmal dyspnœa.

Under which of the two great orders of pathogenetic influences acting on the heart and vessels does gout fall? Under both. In our analysis of the symptoms and signs in it, as distinguished from those which we found associated with syphilis and glycosuria, we have been introduced to evidences of high pressure—in the force of the heart, in the auscultatory phenomena, in the dilated aorta and angina, in the tense as well as thickened pulse, and in deaths from chronic Bright's disease or from cerebral hæmorrhage.

PHYSICAL STRAIN.

1. *After-history of Juvenile Strain.*

A small proportion of cases of cardiac enlargement, with or without arterial sclerosis, may be traced to physical strain in early manhood. At any rate it is not uncommon to find in the man of 45 or 50 or more, who comes to us with complaints of his heart, of shortness of breath, ready exhaustion, and possibly depression and the ordinary signs of a large heart without murmur, a history of vigorous athleticism at school or college, it may be of acute cardiac strain, and to get from him a spontaneous statement that he "did too much then," and has "felt the heart at times ever since."

A tutor of 37 complained of feeling his heart in the school gymnasium. Twelve years previously—that is, at 25—when training in gymnastics during a severe catarrh, he was suddenly taken with great palpitation and a sharp shooting pain at the left margin of the epigastrium. The doctor considered that the heart was strained, and ordered complete rest for a fortnight, with the best result. Seven years later he had again to give up physical exercises because of his heart; "the least thing," as he said, "caused palpitation." For a month before I saw him he had suffered from præcordial discomfort and palpitation on even slight exertion. This man had had no acute disease of any kind, and had led a temperate life. I found the ordinary signs of enlargement of both sides of the heart, with epigastric pulsation; no murmur; a greatly accelerated, regular, soft pulse, free from thickening of its walls. It will be observed that the patient was only 37. I heard of this patient four months ago, after an interval of ten years. Under the careful control of his doctor in respect of exercise he keeps well and continues his professional work.

When a series of cases of this order are analysed, with particular care to exclude syphilis, gout, rheumatism, and alcohol as possible causes of the original cardio-vascular damage, a reasonably trustworthy conclusion can be reached with respect to their characteristic features. The patient complains that he "feels his heart," that its action is irregular—often amounting to palpitation on moderate exertion, or even in ordinary exercise; and that therewith he has a distressing sense of oppression or tightness in the præcordia, which may pass into or be mixed with pain, sometimes anginal. Faintness is a relatively common symptom in these subjects, whether it be true faintness, or

vertigo, or a sense of exhaustion. Dyspnœa is not put prominently forward as a complaint, the truth being that active exertion causes distress and commonly is avoided.

The physical signs corresponding with these symptoms are such as we should expect to find in persons who had dilated their hearts by physical exertion many years before. Valvular murmurs are so rare that they may be referred to some intercurrent cause, or to some undetermined influence in the previous personal history of the patient. Invariably there is evidence of cardiac enlargement—with a few exceptions enlargement of both sides, and a weak or moderate impulse; often there is an irregular rhythm. In more than one half of my cases I found the radials sclerosed; in two-thirds the pressure was low or normal, in one-third high.

I should best describe the disability of this order of cardio-vascular disease by saying that it is due to, or consists in a measure of loss of that reserve of extensibility and associated elasticity on which the successful action of the cardiac chambers depends in the presence of physical stress beyond the mean. These patients are comfortable when at rest or when walking quietly on a level road, but they suffer as I have described when they attempt to negotiate acclivities of different gradient in different instances, and no doubt they suffer more readily with advancing years.

Of course, it cannot be maintained that the condition of the circulation as we find it in this class of cases at the age of 50 or upwards is entirely referable to physical strain in youth. The dilated heart and thickened arteries have passed through a period of 30 years' exposure to the influences that are familiar to us as embarrassing and threatening compensation in valvular disease. Work in different forms, physical or mental, worry, consciousness that the heart is damaged and fear to know the whole truth, over-indulgence in food, alcohol and tobacco, gout, intercurrent disease—one or more of these may be assumed to have been at work and imperilling compensation. In particular, the patient's disposition to abuse physical exercise, which has been but partially restrained by the handicap of a dilated heart, may have led him into fresh trouble.

An old pupil of mine at Charing Cross Hospital was told 20 years ago by my colleague, Dr. F. W. Mott, that he had strained his heart racing, and was duly cautioned. Ever after, he says, he felt his heart somewhat, but he was able to carry on a country practice. Then at the end of last year, cycling up-hill one day, he was suddenly taken with pain a little to the left of mid-sternum. The amount of exercise he can take comfortably is now definitely limited, because of palpitation and a suffocating feeling which overtakes him, followed by dyspnœa and even pain. After a heavy day's professional work he will wake in distress and have to sit up in bed with palpitation. This man has no cardiac murmur, but the ordinary signs of a large, feeble heart, with the second aortic sound relatively accentuated and clear; his pulse is neither tense nor sclerosed.

In the majority of instances the fresh stress has been less severe but more continued—indeed, continuous. It has been the stress of professional life, of a hard-worked parson or medical practitioner; or it has been of another form—the week-end stress at golf or hunting, or otherwise, of the old athlete condemned to an office, who seizes the opportunity to take exercise of so active a character that the heart, now fallen out of condition, is embarrassed by an internal pressure which previously produced only wholesome reaction and a sense of enjoyment. In the disease itself under favourable circumstances there is nothing essentially progressive. But as in the years that have passed before these subjects come for advice, so throughout the subsequent course of their cases under our observation, they are liable to become victims of failure of the heart from any of its ordinary causes. The average age of my patients belonging to this series when first seen was 54 years; and the average duration of the cardiac disablement since the acute strain, when I last heard of them, whether dead or still living, was 34 years. The patients that have died reached the average age of 66.

There can be no question in respect of this class of cases which of our two orders of influences—physical stress or disordered nutrition—has affected the structure of the cardiac and arterial walls. There is a limit to the physical stress that these tissues can bear without undergoing histological change. This change is in part resistant and conservative in its significance at first, but ultimately pathological and disabling. Some authorities maintain, not without reason, that whatever may be the effect of intermittent rise of arterial pressure artificially produced in animals, it is impossible for a healthy man to exert himself physically so severely as to damage acutely a heart and vascular system that are perfectly sound. But that is just the point. Not every man who regards himself as well and sound is so; and in this way strain of apparently healthy hearts and arteries (which, after all, is an exceptional occurrence) can be accounted for. The inherited quality of the material of his tissues, or their condition of "form" at the moment of stress—possibly itself the effect of over-training, for young athletes often live unwisely—may be insufficient to resist the rise of blood-pressure which has been abundantly proved to attend muscular exertion. In less sudden and severe, but repeated or continuous, forms of exercise the changes in the walls of the heart are purely conservative—hypertrophy of the muscular elements, strain-hypertrophy of the fibrous. I have repeatedly met with thickened radials (sometimes with a thickened right radial only) in young engineers or others engaged in severe manual labour. But we have seen that thickening of the intima may in turn provoke further rise of tension by narrowing the vascular lumen, and a vicious circle involving heart and vessels may become established. Further, a condition of compensation, immediately salutary and conservative of life though it be, is essentially more precarious, more difficult of maintenance, than is the condition of ordinary physiological activity. The circumstances of life in most men between 20 and 50 are sufficiently trying to interfere with it; and at the latter age, or shortly after, they come to us with the symptoms and signs which I have attempted to sketch.

2. *Strain of the Senile Heart.*

I will next introduce you to a group of cases in which the relation of physical stress to the nutritional condition of the cardio-vascular walls is the reverse: where the original stress falls upon a middle-aged or old heart already unsound.

A medical friend of my own, aged 53, consulted me in December, 1908, for pain in the chest and down the left arm, from which he had suffered ever since bicycling from London to Brighton and back in one day shortly before. From that time he had not been free from distress as often as he walked up a hill or took his bath. I learned that he had worked hard, and had much worry; was perfectly moderate in the use of alcohol and tobacco; and had not had rheumatism, gout, or syphilis, but both pneumonia and influenza. This man, within a few weeks of the event that had caused him serious concern, proved to have an enlarged heart, with somewhat weak cardiac sounds—the first suspiciously impure in the mitral area—and thickened radials, the left radial being visible and tortuous with a maximum blood-pressure of 140. The pain for which he came to me was centred in the third left interspace, about an inch from the sternal border, and travelled thence along the second rib to the left scapula and down to the elbow. He suffered neither from faintness nor from palpitation, nor indeed from actual dyspnœa on moderate exercise on the level. The urine was free from sugar and albumin. It was clear to me that this patient had strained his heart at 53 by an extremely unwise—because severe and prolonged—muscular effort, but that his heart and vessels had been unsound before the event.

Of cardio-vascular disease of this character I have examined carefully the cases of 20 patients, 17 men and 3 women, of the average age of 58. I find that a variety of causes had interfered with the nutrition of the cardio-vascular walls in the different instances before the strain, and reduced their resistance to internal pressure, including gout and goutiness, the cares and worries of business, influenza, tobacco, and sedentary life with over-eating. In one instance the only circumstance predisposing to physical strain after 50 that could be ascertained was family inheritance of cardiac degeneration. A married lady aged 56 was sent to me in 1898 suffering from palpitation and occasional attacks of alarming cardiac failure. I found that she had led an active, energetic life, and had enjoyed perfect health, with the exception of an occasional attack of influenza, from which she made perfect recoveries. Three months before I saw her she was working hard on her bicycle up a short, sharp incline, when she was taken with pain in her left side, so severe that she had to dismount. Nothing more occurred at the time, but next morning her

medical attendant was urgently sent for. On rising in the morning she had been again seized with pain in the left side of the chest, so violent that she became partly unconscious, and was found pale and exhausted, with a pulse of 50, very weak and compressible and intermittent every tenth beat. After a few days' rest she had improved, but rising—against instructions—on the seventh day she had had a second attack in her bath, from which she very slowly recovered, being unable to rise without return of faintness, the pulse continuing of the same character. When I saw her I found the heart enlarged, with a definite impulse but irregular rhythm, an imperfectly developed systolic murmur replacing the first sound at intervals, a radial pulse scarcely perceptible, quite irregular, and not thickened.

Now this patient, with a personal history so relatively favourable, had lost her mother from fatty degeneration of the heart at 68, a maternal uncle and aunt both from heart disease about the same age, and a brother from heart disease at 30, and a sister was suffering from some form of cardiac affection at the time of her illness. She herself died eight years later. And I may remind you that amongst the hearts that are strained after 50 are hearts which have been already strained in some degree in youth and partially disabled. A country parson who had had to give up athletics at Oxford after running two hard races in close succession confessed to me that at 50 he fell off his bicycle in a faint.

Thus our two groups of cardiac strains, juvenile and senile, may be associated. Naturally there might be admitted into this group, if it were enlarged indefinitely, cases of physical strain in middle or advanced life of hearts that had been previously damaged in any respect or by any means whatsoever—by rheumatism, for instance, or by syphilis, as in several instances which I have already described to you.

In one sense cardiac failure may be said always to be the result of cardiac or cardio-vascular strain, relative if not absolute. The pressure within the chambers of the heart, the load that has to be moved, has been relatively too great for the driving power of the walls. But my present series consists only of cases in which acute strain came as a surprise, there being no knowledge (or at least no practical recognition) of previous damage of the heart, although in some instances it was believed to be "weak," or was occasionally disturbed. And further, in these cases the symptoms of strain, once developed, continued to recur indefinitely on muscular exertion.

The particular form of physical stress that falls upon the insufficiently resistant heart of a man in middle or later life is very various. The exertion of mountain-climbing, of keeping pace with younger men shooting in line, of bicycling with boys who set the pace, of hurrying to catch a train or the post (or to fetch an instrument, which I have known to strain a doctor's heart)—these and others are familiar incidents. One of the gravest cases of strain in middle age that I have ever met with was that of a distinguished sculptor, who ruptured his aortic valves in saving a heavy bit of precious statuary from falling. I have already referred to the effect on the gouty heart of unwise exertion at the week-ends.

In strain of the senile heart the symptoms subsequent to the acute pain or faintness of the actual event itself, when regarded comprehensively, resemble in one respect those which we have just studied in the after-history of juvenile strain. As far as they are characteristic, they are manifestations of the loss in different degrees of that reserve which the elastic and muscular walls of the heart possess for meeting extraordinary calls upon their properties and functions. In these subjects physical exertion of even moderate degree, different in different instances, is attended with a sense of discomfort, oppression or pain in the chest, and it may be down the arms, with consciousness of palpitating, irregular action of the heart. Each patient comes to learn the amount of the handicap of his heart and to moderate his work or exercise accordingly. Efforts after meals are particularly likely to provoke attacks. Rest affords relief. Naturally, in the relatively few instances in which the valves have been damaged or the orifices permanently dilated, the symptoms are more severe, and of the characters and associations familiar in the different forms of chronic valvular disease.

The physical signs of strain of the senile heart always include those of cardiac enlargement, and the impulse almost invariably is weak. Most commonly I have found the cardiac sounds small or feeble, but the second often has a finely ringing quality. In 25 per cent. of my cases there was an apical systolic murmur; in 15 per cent. an aortic systolic murmur; in two cases a diastolic aortic murmur. The radial was sclerosed in rather less than half the cases, the tension low in more than three-fourths.

I have incidentally referred to the *clinical course* of strain of the senile heart. The limitations of its capacity for other than moderate physical effort naturally increase with age, and with the accumulation of other causes that tax the nutrition and strength of the heart. In my series the average age at which symptoms made their appearance was 56; the average duration of life thereafter in patients still living has been seven years, and in some considerably more. In fatal cases it was six years; but one patient died two months after climbing the steps of Milan Cathedral; another with ruptured aortic valves survived only eight months; a third, with a similar lesion, two and a half years. Of 20 patients belonging to this series seen during the past 13 years one-half are known to have died, some of them from cardiac failure, some suddenly with angina. Of the living those of no occupation have sent me a relatively favourable report of themselves; others who have been tempted to continue in business or to indulge in sport have returned with fresh complaints of distress.

In physical strain of the senile heart and vessels both of the two great orders of influences that may damage the cardio-vascular system are again found at work. But here, as I said, the order of invasion is reversed. The cardiac and vascular walls are first poisoned or impoverished and then over-stretched. We have seen that many of these subjects had already presented definite evidences of impairment of cardiac or arterial nutrition before the event which damaged them permanently. But Professor Dixon has demonstrated to us experimentally that violent dumb-bell exercise in men (presumably sound men) of 60 raises the blood-pressure to twice the height that it does in men of 23, or even higher. This observation of his proves not only how foolish it is for men over 60 to attempt, as some do, to keep pace with their juniors in severe physical exercise, but that their handicap, as I have called it, is heavier than most of them would condescend to acknowledge.

THE TREATMENT OF PHTHISIS AND HÆMOPTYSIS BY ARTIFICIAL PNEUMOTHORAX.[1]

BY CLAUDE LILLINGSTON, M.B., B.C. CANTAB.

LITTLE notice has hitherto been taken in England of the treatment of phthisis by artificial pneumothorax which was advocated by Forlanini as early as 1882, and which has, undoubtedly, already saved the lives of many in the last stages of phthisis. In my own case the treatment was adopted only when sanatorium and other forms of treatment had failed to arrest the disease, and the prognosis was as unfavourable as could be. The success which ensued I have since seen repeated again and again in other patients. Samson in 1910 estimated that the number of published cases exceeded 400. Writers, such as Saugman and others, have only published those cases in which the treatment has lasted a considerable time. It is therefore probable that the number of patients who have undergone this treatment already far exceeds the above figure.

The quantity of foreign literature on the subject is already great. It is all the more striking to find so few original articles on the subject in the English medical press. The lack of interest in the treatment has had this ludicrous effect, that English pneumothorax patients at Davos were unable in the summer of 1910 to return to England owing to their inability to find anyone in this country with sufficient knowledge of the treatment to continue the injections of nitrogen.

It is, perhaps, one of the most striking features of the treatment by induction of an artificial pneumothorax that it has hitherto been almost exclusively applied in advanced cases of phthisis, and that in spite of this selection of the unfittest such good results have been obtained. In this respect the treatment compares favourably with other remedies, the efficacy of which seldom

[1] Extract from Thesis for degree of M.D.

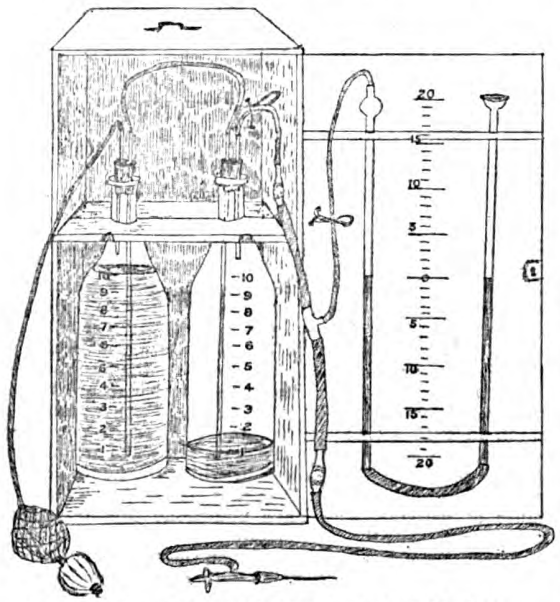
extends further than to the first or second stage of the disease.

It is an old clinical experience that immobilisation of a tuberculous lung by pleurisy with effusion can be very beneficial. Adams, West, Sömme, and Paul Brock-Martens, among many others, have emphasised this point, and L. Spengler has collected 33 cases of hydropneumothorax, of which 10 recovered, the pulmonary disease being arrested in 6. It has also been found that aspiration of a tuberculous pleural effusion is often directly harmful. Hence the conclusion that the immobilisation of the lung, if it is to be of value, must be prolonged.

Immobilisation of the lung has been attempted by a variety of means ranging from the timid strapping of one side of the chest to the drastic resection of nearly half the bony thoracic wall. No doubt these extensive plastic operations have a future before them with the present rapid advance in thoracic surgery, but their application should at present be limited to those cases in which extensive pleural adhesions exist, preventing the collapse of the lung by more conservative methods.

A method of inducing collapse of the lung which has been advocated by Murphy in America and Brauer in Europe may be briefly described, as it is still practised, and its adherents claim for it certain advantages over Forlanini's method. Under local anæsthesia an incision is made into the skin over the selected intercostal space. The muscles are separated and the parietal layer of the pleura is exposed. A blunt cannula is now passed through this layer, and when, by passing a probe through the cannula, its point is found to rest between the two layers of the pleura, it is connected with a manometer and a cylinder containing nitrogen, of which several hundred cubic centimetres are admitted. It is claimed for this open method that the risk of fatal air embolism and of wounding the lung is avoided. Strict asepsis is, however, with difficulty maintained, and a fatal case of pyopneumothorax has already been reported by Brauer and Spengler as a sequel to this procedure.

After the first operation Brauer adopts Forlanini's method



The apparatus. The water is seen standing in the manometer. The figures on the manometer scales represent centimetres. Each graduation on the bottles marks 100 c.c.

of refilling the pneumothorax with nitrogen. Forlanini's plan of introducing nitrogen between the two layers of the pleura through a fine, hollow needle, and thus inducing collapse of the lung, can now be carried out with ease in cases uncomplicated by adhesions, provided the operator carefully carries out every detail of the recently improved technique.

Technique of the Operation.

The apparatus and technique have undergone numerous modifications, and doubtless there is still room for improvement. A simple form of the apparatus is shown in the illustration.

I have tried a considerable variety of needles both on myself and on others, and have found that though the use of very fine needles is relatively painless, they have too narrow a bore to transmit the pressure within the chest to the manometer quickly enough. A thin-walled needle with large bore may be used, but such a needle buckles suddenly, as I found once to my cost. There are two needles in common use, each of which has its special advantages. Saugman's, which is of the thickness of a darning needle, has the lumen carried out to the point. The stilette can therefore be used to probe the tissues at the needle's point. The other end of the needle is connected with indiarubber tubing by a side stem. The main stem through which the stilette passes is supplied with a tap, and its opening is made to fit the nozzle of a syringe. Kjer-Petersen's differs from Saugman's needle only in this, that its point is solid, the slit-like opening being situated at one side of the needle close to its point. This needle is less liable to be clogged by connective tissue, and this is an advantage which any one who has experienced the difficulties of a first injection will fully appreciate. With this needle, however, the lung must inevitably be wounded before nitrogen can be injected, and the stilette cannot be used as a probe. Other useful forms of pneumothorax needle have been devised by Dr. S. Vere Pearson and Dr. L. Colebrook.

There is no *situs electus* for the puncture, but the point most commonly chosen is in one of the axillary lines in the seventh or eighth intercostal spaces. The operator is guided in his choice of site by the condition of the lung, his aim being to find a spot where the lung is healthiest, and to avoid the neighbourhood of cavities. As no general anæsthetic is given, a hypodermic injection of morphine is advisable half an hour before the operation. A local anæsthetic such as eucaine is also advisable.

The usual antiseptic precautions having been observed, the needle, connected with the water manometer, but cut off from the nitrogen by a clamp, is vertically thrust to the depth at which the pleura is to be found. By keeping a light hand on the needle the operator experiences a momentary sensation of resistance as the needle meets and then punctures the parietal layer of the pleura. If the point of the needle is within the blades of the unadherent pleura, and its lumen is not obstructed by connective tissue, the manometer will show negative respiratory oscillations, a typical reading being −14 cm. water on inspiration and −6 cm. on expiration. Variations of only 2 to 3 cm. on the manometer between inspiration and expiration may occur, and yet the point of the needle may be outside the pleura. When the oscillations show the mean pressure to be atmospheric, the readings being slightly negative on inspiration and slightly positive on expiration, the point of the needle is probably in the lung. If no characteristic oscillation occurs, the stilette of the needle should be used to clear it of blood or other connective tissue, care, however, being taken to close the needle quickly after cleaning, lest air be drawn in appreciable quantities into a vein.

Saugman when in doubt as to the position of the needle's point fits a syringe to the needle and aspirates. The presence of the needle's point in a vein can thus readily be discovered. On several occasions Saugman has aspirated blood, thus showing the wisdom of this precaution. Holmboe has called attention to the fact that the puncture of a vein is associated with more than the usual amount of pain, and this is a valuable warning. It is essential that the needle be carefully dried before use, as the presence of water in it is sufficient to prevent oscillations of the manometer. Blood in the needle has naturally the same effect. By adhering to the golden rule never to let gas escape into the body before characteristic oscillations are seen, the risk of fatal gas embolism is reduced to a minimum.

When characteristic manometric oscillations are obtained, filtered nitrogen or air is admitted, the quantity not exceeding from 200 to 300 c.c. at the first injection. After taking the readings of the manometer the needle is withdrawn. No dressings are required. The injections should be repeated daily, or every other day, till the lung is collapsed and a positive intrapleural pressure has been obtained.

If adhesions are absent or easily broken down, several injections of 500 c.c. each may be required before the intrapleural pressure becomes positive, but if there are extensive adhesions the pressure will rise rapidly even after as small an injection as 50 c.c. In such cases, if the adhesions do not yield to repeated injections at high pressure, it is advisable to puncture elsewhere in the hope that another pocket of nitrogen may be formed and be more efficacious by acting upon the adhesions from another point. Such cases are most difficult and require infinite patience on the part of all concerned. After laboriously injecting 100 c.c. or less, the gas may come whistling out through the puncture as the needle is withdrawn, or it may cause surgical emphysema, which leads to great discomfort if the gas has tracked up along the fascia of the neck.

Even when a most imperfect pneumothorax has been obtained and respiratory sounds are audible over the greater part of the lung, the partial immobilisation of the lung may yet be capable of giving excellent results.

The intrapleural pressure that is necessary differs according to the extent of the lung's collapse: if it is complete a positive pressure of from 5 to 10 cm. of water is sufficient, and a greater pressure is liable to cause troublesome dyspnœa. Once, when refilling a pneumothorax in which the pressure had hitherto not exceeded 8 cm., I raised the pressure to 10 cm. This was enough to cause a slight attack of dyspnœa and vertigo when the patient sat up in bed a few minutes later. A colleague who, in inducing a pneumothorax for the first time, raised the intrapleural pressure to double the desired extent by an error in reading the manometer, induced such alarming symptoms of dyspnœa that the operation had to be reversed and a large quantity of nitrogen withdrawn. When, however, the pneumothorax is strictly limited by adhesions, pressures of from 30 to 40 cm. of water or more may be employed with impunity, care being taken to use a fine needle and to strap the chest over the site of the puncture to prevent surgical emphysema.

Suitable Cases.

The selection of suitable cases for the treatment is often a great difficulty, for the indications and contra-indications have been repeatedly altered as experience has been gained by different writers. The stipulation that one lung must be quite healthy would exclude nearly all advanced cases, and yet it is in this class that so many excellent results have been obtained. Provided that the prognosis is very bad, the worse of the two lungs should be compressed even when there is considerable disease in the healthier of the two lungs. It is often difficult to estimate the degree of activity of the disease in the healthier lung, and it may therefore be necessary to immobilise the worse of the two lungs to see whether the healthier lung is a cause of the fever or not. If after complete immobilisation of the one lung the temperature remains as high as ever, the other lung is convicted of considerable active disease in the absence of laryngeal and intestinal complications. Even if such a diagnostic pneumothorax proves the other lung to be gravely affected, the question is still an open one whether the treatment should be given up or not. Personally, I am in favour of continuing the treatment; if abandoned, it is depressing to the patient, who gives up all hope; if continued, the remaining lung may yet improve, and in the course of a year or two the compressed lung may again be allowed to expand, and then, if necessary, the other lung may be compressed. Advanced tuberculous conditions of the larynx or intestine were considered as contra-indications at one time; but latterly a number of cases have been reported in which compression of the lung was followed by the recovery of tuberculous lesions of the larynx. Where intestinal tuberculosis is associated with more or less constant diarrhœa little can be expected from the treatment.

Hitherto, in Scandinavia the cases treated have been principally those in which practically the whole of one lung was involved and the prognosis was almost hopeless. Little healthy lung tissue has thus been sacrificed. But with the experience and material now at our service it seems only fair that this treatment, so successful *in extremis*, should be given a wider sphere. Murphy and Lemke have, in fact, had good results among their patients in the first and second stages of the disease, and Mjöen in Christiania has published the case of a young labourer whose early disease he checked by a few injections of nitrogen after the usual sanatorium treatment had failed. The dictum, "the unemployed of long standing are unemployable," is a strong argument in favour of a short cut to health, and an artificial pneumothorax, when supplemented by sanatorium treatment, may undoubtedly give quicker and better results than conservative treatment alone.

Before the treatment can be extensively applied to early cases of phthisis, or cases in which the disease is of old standing but of limited extent, two questions must, however, be answered. One is, What chances has the compressed lung of re-expanding when the injections cease? The other is, What are the dangers to life from gas embolism and pleural reflex? There is as yet insufficient material on which to base a reliable answer to either of these questions, and as long as this is the case many will prefer more conservative treatment.

Pleural adhesions, if extensive, prevent the formation of an efficient pneumothorax, but their existence can only be guessed at, and only repeated failures to reach a free pleural space are proof positive of their presence. In chronic disease with retraction of the thorax and displacement of the heart extensive adhesions are common, but not the rule, and even after frequent attacks of pleurisy an efficient pneumothorax may yet be obtained. Total pleural adhesion is very rare, and in a case of Dr. Jollye's, seen by Dr. Latham and myself, it has been possible to inject a considerable quantity of nitrogen in spite of pleurisy which has left basal adhesions. Forlanini at one time considered acute tuberculous disease of a lung as a contra-indication, for he held that the benefit derived from the treatment was mainly due to the removal of a disadvantageous mechanical factor by immobilisation of the lung, and that this is not sufficient to arrest the more rapid forms of phthisis. Experience has shown this assumption to be incorrect in many cases, and when early rapid phthisis is checked by the treatment, the chances of a successful recovery are even better than in the more chronic cases where the constitution has been undermined by many years of illness.

When phthisis is complicated by pleurisy with effusion good results are obtainable by replacing some of the inflammatory exudate by non-irritating nitrogen.

Treatment of Hæmoptysis by Artificial Pneumothorax.

The following case was communicated to me on July 4th, 1910, by Dr. Holmboe of Mesnalien Sanatorium, Norway, and he has kindly permitted me to publish it.

CASE 1.—A young Swede had been kept to his bed with a subfebrile temperature for several weeks, with one lung extensively involved, the other nearly normal. Even after a slight hæmoptysis followed by a further rise of temperature he refused to have a pneumothorax induced as he hoped to make a natural recovery. One night a violent hæmoptysis occurred, reducing the patient in the course of ten minutes to a state of profound anæmia and collapse. In anticipation of this the nitrogen pump with adjuncts had previously been got in readiness. The skin was rapidly disinfected with tincture of iodine, and the needle was thrust into the chest as the hæmoptysis continued. 500 c.c. of nitrogen were injected, and as the intrapleural pressure remained negative a further lot of 200 c.c. was admitted. The cough and hæmoptysis ceased at once. On the following day about half an ounce of blood was coughed up, necessitating the injection of 500 c.c. more of nitrogen, which immediately stopped the bleeding. In spite of a temperature of 104° F. the patient began to rally; no futher hæmoptysis occurred, and the temperature fell to normal. The injections are being continued, and there is every prospect of a good recovery.

The value of an artificial pneumothorax as a hæmostatic is further illustrated by the following case reported by Dr. Thue of Christiania.

CASE 2.—A workman, 32 years old, was admitted to hospital with hæmoptysis, which had lasted off and on for six days. During the following fortnight the hæmoptysis continued at irregular intervals, over one litre of pure blood, as well as much blood-stained sputum, being expectorated. The patient became very anæmic, the pulse was rapid and feeble. Both lungs were affected, but the left was much more extensively involved than the right. It was therefore assumed that the blood probably came from the left lung. A puncture was first made in the sixth space between the middle and the anterior axillary lines. No free space was found here, but a second attempt in the seventh space in the

mid-axillary line was successful, and 200 c.c. of nitrogen were injected. The hæmoptysis ceased at once, and the sputum on the following day was but slightly blood-stained. The injections were continued, and no further hæmoptysis occurred.

Hæmoptysis as a sequel to the treatment is conceivable, and it frequently happens that after the first injection, when the needle has penetrated the visceral pleura, the patient coughs up a small clot or two of blood. I have once seen a case in which profuse hæmoptysis occurred 24 hours after a vain attempt to inject nitrogen at four or five different points. Doubtless the lung was wounded more than once, but as no blood appeared at the time it is highly improbable that the hæmoptysis was due to injury of a blood-vessel by the needle's point. It is more likely that hæmoptysis was a coincidence, or that the excitement of the operation and its failure was followed by profound exhaustion which led to congestion of the lungs and consequent rupture of a blood-vessel. I have frequently noticed that violent exercise has been followed by hæmoptysis not on the same day, but early on the morning of the following day. A curious example of coincidence occurred some time ago when a colleague agreed to induce a pneumothorax in a patient whose parents withdrew their consent to have the operation performed. The day on which the operation was to have taken place the patient died from a violent hæmoptysis.

Saugman in his experience of over 50 cases has only twice seen hæmoptysis occur after the first injection. In the one case the hæmoptysis began before the treatment and continued until a sufficient number of injections had compressed the lung, when no further bleeding occurred. In the other case the pneumothorax had existed for some time, but a thick walled cavity had prevented the complete collapse of the lung. The hæmoptysis which caused death was found post mortem to come from a vessel in the wall of the cavity.

It has been shown by Bruns and Muralt among others that the blood-vessels in the compressed lung collapse, and that the anæmia in this lung is directly proportional to the pressure of the pneumothorax. The great drawback to the treatment is the uncertainty as to which lung is the seat of the bleeding, as bubbling râles due to the hæmorrhage may be heard over both lungs; but in a sanatorium where both lungs have been under observation for some time, the side from which the bleeding comes can generally be detected. To those who have stood by while hæmoptysis has continued in spite of every medicinal remedy, including the recently much vaunted amyl nitrite, this remedy will appeal in spite of its undeniable limitations.

Dangers of the Treatment.

There are a variety of dangers, such as empyema, hæmoptysis, tuberculous meningitis, and aspiration of pus from the compressed into the other lung, which may be caused by the treatment; but in practice these accidents are extremely rare. There remain two great dangers—pleural reflex and air or nitrogen embolism—each of which has claimed a number of victims.

Pleural reflex has been lately studied by Roch in connexion with an artificial pneumothorax. He induced it in animals by stimulation of the pleura by an alcoholic solution of iodine. Forlanini has obtained somewhat similar results, and has shown that the condition can be averted by anæsthetising the pleura beforehand. He therefore recommends an injection of stovaine in the neighbourhood of the pleura as a preliminary to an injection. In his analysis of 1454 thoracenteses performed in 1909 he has shown that the condition occurred four times, once only with serious consequences. Saugman, with an experience of 54 cases of artificial pneumothorax and 970 injections, has not seen one serious case of pleural reflex, and has only seen premonitory symptoms twice. He considers the absence of severe pleural reflex in his practice to be due to his avoidance of high intrapleural pressures, to his technique, and possibly also to the relatively stable nervous system of his Danish patients. His two cases of slight pleural reflex were associated with extensive pleural adhesions, which are undoubtedly provocative of pleural reflex, as they require high intrapleural pressure for their separation. Brauer has found a state of collapse follow the injection of too cold nitrogen, and he therefore warms the gas before injecting it. The operator should always be on his guard against pleural reflex, and be ready to withdraw the needle at the first sign of this condition.

Several deaths from air or nitrogen embolism have been reported in consequence of the treatment, and this accident has not been confined to first injections. In an early stage of the treatment the needle was connected with a cylinder of gas as the needle traversed the tissues. Gas embolism was therefore freely courted, and it is strange that the number of fatal cases is not greater. The improvement in technique, which includes the use of an aspirating syringe whenever the operator is in doubt as to the position of the point of the needle, has reduced the risk to a minimum, and by connecting the needle with the manometer and clamping the tube leading to the nitrogen, only the smallest quantity of gas can be drawn into a vein. Saugman estimates that at least from 20 to 30 c.c. of gas are necessary to cause fatal embolism, and such an amount is not likely to escape through the needle by accident. Brauer has reported a case in which instantaneous death followed the injection of 15 c.c. of nitrogen, but as no necropsy was allowed it is open to doubt whether death was due to gas embolism or pleural reflex. If the former hypothesis is correct it is still doubtful whether the nitrogen or inspired air entering a wounded vein was the cause of death, for it is possible, according to Brauer, that air embolism may be induced merely by the puncture of a vein which sucks in inspired air. Of the fatal cases reported, a few have had the diagnosis verified post mortem. In these death has followed sudden faintness, pallor, dilatation of the pupils with loss of reflex, facial paralysis, clonic and tonic convulsions, and loss of consciousness.

Faulty technique is probably to blame in a large percentage of the reported fatal cases, and in advanced cases of phthisis the risks of the treatment are relatively small compared with the risk of relying on more conservative methods. The risks require a more critical scrutiny, however, when the treatment is advised in cases of early phthisis with excellent chances of recovery by less heroic means.

The Choice of Nitrogen, Air, Oxygen, or Normal Saline Solution.

Atmospheric air possesses the advantage of always being obtainable, but it is absorbed more rapidly than nitrogen. Normal saline is advocated by Holmgren, who in four cases experienced greater ease in finding the space between the layers of the pleura with it than with nitrogen. Ad. Schmidt has, however, shown it to be unsatisfactory. Oxygen has also been advocated on the assumption that it would not cause dangerous gas embolism, but experiments on animals have shown this view to be incorrect.

Effect of the Pneumothorax on the Compressed Lung.

This lung may be completely immobilised if no adhesions exist, and no thick-walled cavities prevent its collapse. Such a condition rarely exists in advanced disease, the lung being usually adherent to a considerable area of the chest wall. When the adhesions are diaphragmatic or lateral, the beneficial effects of the pneumothorax are partly neutralised. Apical adhesions, on the other hand, are of little importance, as the drainage of the lung is still effective, and the partial limitation of the lung's mobility appears sufficient to arrest the disease. Such adhesions may even be of advantage as they prevent the cicatrisation of the whole lung. The patient whose lung has become a mass of scar tissue has burnt his bridges most effectively, and should his remaining lung become the seat of active disease he is helpless, whereas if his compressed lung is capable of expansion he can compress the other. Forlanini has recently reported a number of such cases of alternate compression successfully treated.

In the majority of cases the compressed lung re-expands. The compression may have lasted for several years without affecting the lung's power of re-expansion, or it may have lasted only a few months, and yet the lung has become a mass of scar tissue with a thickened fibrous capsule. The conditions which favour the latter result include complete compression of the whole lung for a considerable time, an intrapleural pressure which is kept consistently positive, and pleurisy with effusion. The nature of the inflammatory condition of the lung is also an important factor, a chronic fibrotic process being more likely to favour permanent collapse than an acute process with little tendency to scar formation. Although pleural effusion aids the compression of the lung and may render its capsule thickened and fibrotic, it frequently fails to compress the lung permanently. It is impossible to promise the patient a functionally active lung

at the close of the treatment, although the chances of its return to full activity are considerable.

Effect of the Pneumothorax on the Uncompressed Lung.

The improvement observed in this lung is often rapid. Probably the most important factor in this change is the general improvement in health which follows the immobilisation of the compressed lung.

Apart from arrest of the disease in this lung, other changes have been observed, including emphysema and elongation of the whole lung due to the increased intrathoracic pressure. Several cases have been reported in which the disease in the remaining lung progressed after the compression of its fellow. In the majority, however, the spread of the disease in this lung is certainly in spite of, rather than because of, the treatment. Carpi has shown that the opsonic index assumes a more favourable level during and after the treatment.

Minor Complications.

A serous effusion into the pneumothorax has been recorded in about one-third of all reported cases. It generally occurs within six months of the first injection, and is usually associated with fever, lasting a few weeks and falling by lysis. It seldom fills the whole pleural cavity, and it is usually sterile, although in some cases intraperitoneal injections in guinea-pigs have produced typical tuberculosis. The effusion is almost invariably of tuberculous origin, and is not due to septic infection from the lung or the site of the punctures. If the effusion is great some of it should be withdrawn and replaced by nitrogen. It is necessary to watch such cases carefully, as the fluid may be re-absorbed rapidly and the lung may re-expand and become adherent to the chest wall.

Pain is often very severe during the first two or three injections when adhesions are being stretched. Morphine may in many such cases be required. Dyspnœa is inevitable at first, but it is seldom troublesome provided the intrapleural pressure is kept within reasonable bounds. When an effusion occurs it may be necessary to withdraw a certain amount in order to relieve this symptom. The treatment often increases the frequency of respiration from 20 to 30. When the uncompressed lung is considerably involved this rate continues, otherwise it falls below the rate previous to the commencement of the treatment and in some cases is as low 18 or 16.

Tachycardia.—The pulse commonly gains in frequency at first; later, when the temperature has fallen, and the intrathoracic organs have adapted themselves to the change in position and pressure, it frequently falls to 70 or 80, rapidly rising again on provocation. When the frequency of the pulse persists, the prognosis is bad.

Surgical emphysema.—When superficial, it may be both extensive and troublesome, but it is never dangerous. By bandaging firmly over the site of the puncture it seldom spreads far. Deep surgical emphysema is far more serious, and in most cases where it occurs the leakage of nitrogen prevents the formation of an effective pneumothorax. The nitrogen may escape into the mediastinum, embracing the trachea and œsophagus. It may also extend to the submaxillary region, to the axilla, and down to the elbow. The subsequent dysphagia and the feeling of pressure in the chest are very troublesome. In such cases frequent small injections are required to avoid raising the intrapleural pressure too violently.

Dyspepsia.—This condition is, curiously enough, most frequent and pronounced in pneumothorax of the right side. Patients also suffer frequently from nausea and inability to eat much at a time. Saugman and Begtrup Hansen have called attention to the fact that marked dyspepsia and nausea are frequently precursors of a pleural effusion.

When to Discontinue the Treatment.

This is a question to which no definite answer can be given at present. Cases in which the treatment was concluded after eight months or less have frequently ended disastrously, for not only has the disease flared up again as the lung re-expanded, but attempts to re-introduce nitrogen have failed owing to extensive pleural adhesions. The danger of cutting off the patient's retreat is therefore very great if the parietal and visceral layers of the pleura are allowed to come in contact with each other again. Fortunately the pneumothorax can be maintained by refilling the pleural cavity every month or two according to the rate of absorption of the nitrogen in each case without incapacitating the patient from light work.

Value of X rays.—From first to last the X rays are of great value both in the selection of suitable cases and in controlling the results of the injections, but they are not an absolute *sine quâ non*.

Results.

Both Brauer and Saugman insist on the inadvisability of relying on a purely statistical analysis of the results, for a detailed knowledge of the gravity of each case is necessary for the full appreciation of the treatment's value. There is also great variation in the results obtained by different writers, for the selection of cases has not been based on the same principles by all. Some have induced a pneumothorax on one side when the disease has been extensive and active on both. Others have included in their statistics all those cases in which the treatment was abandoned after a few vain attempts to form an efficient pneumothorax. Laryngeal, intestinal, and renal tuberculosis have frequently caused death in patients whose compressed lungs showed no active disease at the necropsy. The total death roll, therefore, of patients who have undergone the treatment is heavy, and is liable to discourage those whose estimation of the treatment's value is based only on figures.

Holmboe has reported 2 cases, both of which were successfully treated. Thue has reported 11 cases, with good results in 5. Mjöen has reported 10 cases, with good results in 5. Würtzen and Kjer Petersen have reported 21 cases (in 7 of these no pneumothorax could be induced, and in 7 others it was strictly limited), with permanent good results in 3.

Saugman and Begtrup Hansen have reported their first 33 cases. These cases are divided into three classes.

Class 1.—Six patients in whom extensive adhesions prevented the formation of an efficient pneumothorax. The treatment was abandoned without having done any harm. The small pockets of nitrogen which were formed appear even to have been temporarily beneficial, for the temperature fell in 2 cases, bronchial respiration disappeared for good in another case, and in yet another the bacilli disappeared for the time from the sputum.

Class 2.—Three patients in whom extensive disease in the healthier of the two lungs rendered the outlook almost hopeless from the start. In one case the pneumothorax was induced in the hope that râles heard over the one lung were conducted from the other. The treatment showed this assumption to be incorrect.

Class 3.—Twenty-four patients in whom an efficient pneumothorax was induced and maintained. The majority of these improved, the improvement being permanent in 11. The causes of failure in the remaining 13 patients were as follows. Progressive disease in the remaining lung in 4, laryngeal disease in 2, intestinal disease in 4, cardiac complications in 1. In one case which was progressing favourably the pneumothorax disappeared owing to the unexpectedly rapid absorption of the nitrogen; the adhesions which formed prevented the continuation of the treatment. One patient died from secondary hæmorrhage after an operation for separation of pleural adhesions.

Forlanini in a recent lecture on the treatment does not state how many of his patients (86) were cured, but the whole tone of the lecture suggests that the results were eminently satisfactory.

Gorleston-on-Sea.

UNIVERSITY OF LIVERPOOL.—A Diploma in Ophthalmic Surgery has been established by the Council of the University of Liverpool on the recommendation of the Senate and the Faculty of Medicine. The diploma (to be styled "D.Ch.O") will be awarded after examination to candidates who possess a qualification or diploma in medicine entitling them to registration in the United Kingdom, and who have attended a three months' course of study in the anatomy, physiology, and pathology of the eye in the University, and a three terms' course of instruction in a recognised ophthalmic clinic, subsequent to qualification.

NOTES ON FOUR CASES OF PHTHISIS IN WHICH ARTIFICIAL PNEUMOTHORAX WAS INDUCED.

BY LEONARD COLEBROOK, M.B., B.S. LOND.

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AMONG the out-patients under treatment by the Inoculation Department of St. Mary's Hospital victims of tuberculosis of one form or another have always constituted a large section, and in this section an increasing percentage of cases of pulmonary phthisis has come under treatment within the last few years.

Prior to 1909, when five wards (31 beds) in the hospital were acquired by the department for the treatment of in-patients, much hesitation was felt about the expediency of undertaking these cases, in view of the unsuitability of many of them for out-patient practice, and the difficulty of selecting these at sight. Recruited from various sources, and hence differing widely in respect of the severity of their infection, they soon created the necessity of drawing up a general plan to determine the precise mode of application of the tuberculin treatment best suited to the need of each. Not infrequently economic considerations of the individual cases have dominated the situation; for the rest the opsonic index and temperature records have been chiefly relied upon for the classification of the patients in this general plan. A few determinations of the patient's resistance to tubercle, before the commencement of tuberculin treatment, and at intervals after, have made it possible usually to decide whether or not the infection is giving rise to auto-inoculations, and to gauge, roughly, the degree of these when they occur. If evidence of these and of fever is wanting the patient continues to be treated as an out-patient, his appropriate dose of tuberculin being controlled throughout by observations of his resistance made weekly, or more frequently, as may seem necessary. But if during his period of probation, or at any subsequent time, fever or auto-inoculations are noted, he is usually admitted to the wards and subjected to a regimen of "absolute rest," combined, if necessary, with a bold exploitation of opium and allied drugs to allay cough, as recommended by Dr. M. S. Paterson of Frimley Sanatorium, with a view to ruling out auto-inoculation processes. When this procedure has attained its end and the temperature and opsonic index remain steady, the optimum dose of tuberculin is ascertained and the restricting bonds are gradually loosed before his return to the out-patient clinic. (The cases so treated, as well as those treated exclusively as out-patients, will form the subject of a future report.)

It has sometimes happened, however, that cases of phthisis thus admitted to the wards have gone from bad to worse, seeming to be beyond the pale of possible benefit by vaccine-therapy, by reason of one's inability to control the auto-inoculation processes occurring in them. Our interest in the method of induction of an artificial pneumothorax was first evoked in connexion with such cases. Despite a regimen of "absolute rest," they retained for weeks a markedly febrile temperature chart, with progressive loss of weight and of general well-being. The sputum afforded no evidence that the continued fever was due to secondary infections, and frequent determinations of the opsonic index showed that the resistance to tubercle was constantly fluctuating—from which it was inferred that even the respiratory movements of rest sufficed, with an occasional effort of coughing, to throw into the blood stream a considerable quantity of bacterial products. Such excessive and frequent auto-inoculation could be readily conceived to result in a wildly irregular succession of immunising responses and of "negative phases"—of making, and of spending, protective substances; and in addition, one must assume, in an ill-defined poisoning of the whole body, expressing itself in the phenomena of wasting, fever, &c. Inoculations of tuberculin, in doses ranging from 1/400,000th mgrm. to 1/15,000th mgrm. (bacillary emulsion), failed, as was anticipated, to influence the course of the infection.

From these considerations it appeared reasonable to expect that the *sine quâ non* for arresting the disease in such cases must be a method of splinting the lung(s), and thus checking the output of bacterial products from the focus of disease; and to this expectation two of the cases detailed below have lent substantial support. These may be now briefly described.

CASE 1.—The patient, a girl, aged 16, had had a cough six months and other ominous symptoms two months when she was brought to hospital at the New Year, 1911. She looked very ill and the thermometer registered 102·6° F. From the physical signs it was inferred that the whole of the right lung was infiltrated, with some cavity formation at the apex. There were signs, too, of older disease in the upper lobe of the left side. Examination under the X ray screen showed very marked mottling, with deficient air-entry into the whole right lung, and similar appearances, but of much smaller extent, between the root of the left lung and the apex. After five weeks of "absolute rest" the fever had only partially subsided, and tended to revert to high levels at intervals. The residual cough (after vigorous drug treatment) continued, and weight was constantly being lost. The opsonic indices were usually high, but showed rapid changes—e.g., from 1·15 to 1·46, and on another occasion from 0·98 to 1·30 within 12 hours, quite apart from injections of tuberculin. A physician by whom the case was examined was against the induction of a pneumothorax on account of the considerable involvement of the left lung. After two more weeks, however, of losing ground it was decided to attempt the collapse of the right lung. Happily in this, as in Cases 2 and 4, pleural adhesions, if present, were soft, and the first injections did not cause much distress—subsequent ones almost none. 200 c.c. of nitrogen were introduced on Feb. 28th, when the evening temperature was commonly 100° to 100·5°. The fever did not show very marked remission until a positive pleural pressure had been obtained on the fifth injection (of 800 c.c.) on March 17th; nor until about the same time was the cough decidedly diminished. Within five days of this date the maximum temperature had fallen below 99°, where it has since remained, and the cough was practically gone; it, too, has not returned in the intervening four months.

The delay here noted between the first injection of gas and a distinct change in the clinical picture affords an interesting contrast with the progress of events in Case 2, detailed below, and may probably find its explanation in the fact that, under the X ray screen, the partially collapsed lung (of Case 1) could be seen to be held up at its apex to the thoracic wall. At a later date, after a positive intrapleural pressure had been induced, this condition could not be clearly demonstrated, doubtless owing to the stretching, or breaking down, of the adhesions which formerly held up the lung.

This patient is now walking two to three miles every day without any dyspnœa, and for the past eight weeks has been slowly regaining some of the weight lost during the pyrexial period, without, be it said, the adoption of any system of over-feeding. The collapse of the right lung has been maintained up to the present by occasional injections of nitrogen, so that the left lung is still doing extra work, but at no time has this appeared to be harmful to it; on the contrary, if one may argue from the disappearance of dulness and of adventitious sounds, its condition is improved.

The future conduct of this case, as of Cases 2 and 4, to an ultimately successful issue is, however, closely bound up with the difficult question—How long is one to persist in the maintenance of the pneumothorax? which, from another point of view, may be re-stated thus: At what point in the future is re-expansion of the lung to be *allowed to occur*, either passively by the slow auto-absorption of the nitrogen, or actively encouraged by the withdrawal of the gas, without courting again the dangers of excessive auto-inoculation and toxæmia which we have all along sought to avert? With these questions in mind a kindred inquiry will suggest itself—viz., How long may a collapsed lung be expected to retain the capacity for ultimate expansion of its healthy portions?—an issue which bears, however, a degree of importance quite subordinate to the former questions, since, if the infection is finally overcome, the patient could, if need be, get through a quiet, guarded life very comfortably despite the permanent collapse of one lung.

To return, then, to the former problem (of when to refill the pleura and when to cease to do so) and its application to the patient now under consideration. After some seven injections of nitrogen the process had been stayed for five weeks; at the end of that time her temperature remained steady and

subnormal, but the gain in weight was not quite constant, and her general condition did not show distinct improvement from week to week. The stethoscope denoted the commencing return of air entry into the collapsed lung in response to slow auto-absorption of the nitrogen introduced, and one was anxious to know if such re-expansion was desirable without waiting longer for a gross warning in the way of temperature disturbance, return of cough, &c. On inquiring of Dr. C. Lillingston, who had summarised the literature of this subject, one learned that continental writers were mainly in favour of a long period (one to three years) for the maintenance of the collapse, and that *in many cases* so treated the lung did not lose its capacity for ultimate re-expansion.

To this judgment, emanating from a considerable experience, some value must be attached, but at best it seemed to be a rule-of-thumb proceeding which should, if possible, be replaced by a more precise method, having reference to individual cases and guiding the conduct of them at every point throughout the period of treatment. To this end the opsonic index was applied in this particular case as follows: Four samples of blood were collected from the patient within 40 hours, no alteration being made the while in her daily routine of gentle physical exertions; the opsonic indices of these samples showed considerable fluctuation (from 0·80 to 1·25), and from this it was argued that one must either curtail her exertions and repeat the test under conditions of "absolute rest," or else refill the pleural cavity with nitrogen, and allow her to continue getting up as before. The latter course was followed, and a parallel series of blood examinations made in the following week, with the result that the fluctuation in resistance was found to be decidedly less (0·90 to 1·10). The intrapleural pressure, however, at the conclusion of this last refilling operation, had been only slightly positive, hence it was not surprising to find after elapse of a fortnight, that there was again more definite evidence of excessive auto-inoculation, despite a steady temperature chart, and this was taken as a guide for a further injection of gas. It is proposed to continue with similar tests once a week and, later, at greater intervals, while gradually enlarging the scope of her daily exertions, until there ceases to be evidence of irregular and excessive auto-inoculations, and from indications afforded by these tests to control the further injections of nitrogen. Under Case 4 will be described a somewhat different application of the opsonic index to the elucidation of the same problem, presenting itself in a case of quite different type.

CASE 2.—This patient, a man, aged 20 years, also gave a history of six months cough and of two months evening fever (100°–102° F.). Physical signs and skiagram both pointed to infiltration of the whole of the right lung, with some breaking down at the top and involvement also of both apices on the left side, including cavity formation. As in Case 1 the opsonic index showed irregular and rapid excursions in spite of "absolute rest" and sedative drugs, and the fever continued quite unchecked. So grave did the case appear from every aspect that we did not at first think it worth while to attempt pneumothorax, but were finally prevailed upon by the anxiety of his friends that we should give him the fighting chance. On March 2nd, 240 c.c. of nitrogen were introduced into the right pleural cavity without causing very much distress. From the accompanying chart will be readily seen the effect upon the temperature. The injection was not repeated as usual on the following day on account of a little surgical emphysema which resulted, an eventuality which has been successfully prevented in subsequent injections by strapping a ball of wool tightly over the skin puncture at the end of the operation.

This man's course all along has been closely parallel with that sketched above, save that in his case the effect upon both temperature and cough was more immediate and striking. He, too, is now up and walking every day almost without dyspnœa, and a very complete collapse of the lung is maintained since the last injection eight weeks ago. Recently it was found that he had, in addition to the nitrogen, a small quantity of clear fluid in the right pleura. The explanation of this is not at once apparent to us, and at any rate it does not appear to prejudice his progress. He, too, is gaining weight, and although he retains a slight cough there has been no sputum for several weeks. The abnormal physical signs formerly present over the left lung cannot now

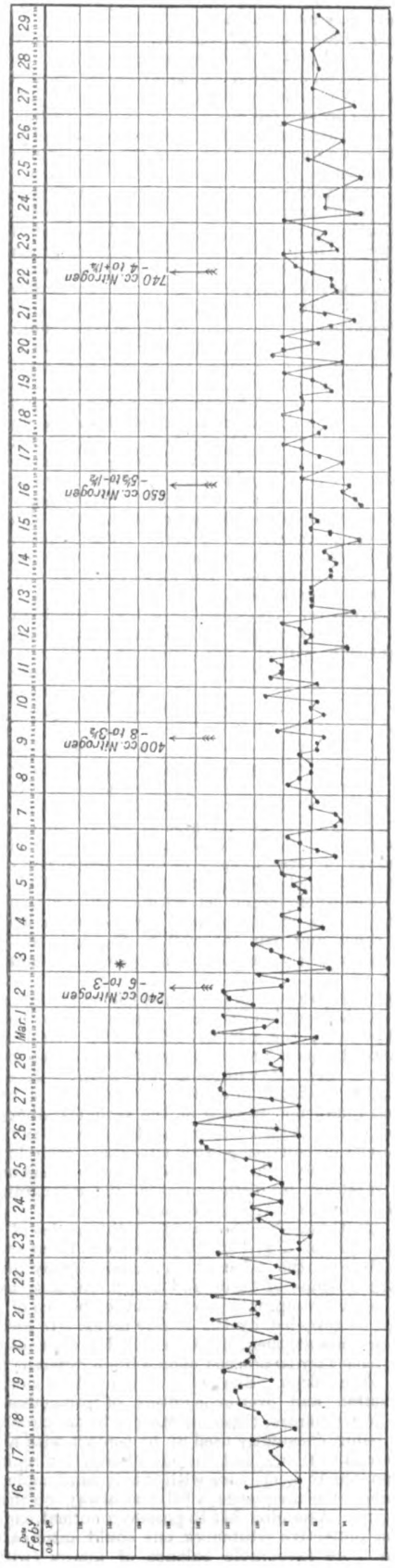


Chart of H. H. (Case 2.)
The figures against which in one instance an asterisk has been placed indicate the intra-pleural pressure (measured in cubic centimetres of water) respectively before and after each injection of nitrogen.

be determined so distinctly, doubtless in part owing to the excessive air-entry into that side.

The story of Case 3 may conveniently be set down here in series with Cases 1 and 2 on account of several features in common with them, although the attempt to induce a pneumothorax was early abandoned on account of certain difficulties not previously encountered but which are nevertheless to be expected in a considerable percentage of cases, and will not infrequently put a decisive check upon the proceedings, as in the present instance.

CASE 3.—The patient, a young man, aged 20 years, was sent to the department by Dr. W. H. Willcox, and gave a history indicating a probable duration of five months for the lung infection. On admission to hospital he presented a picture similar to Cases 1 and 2—of obstinate fever, with a fluctuating opsonic power, and rapid extension of dulness in the chest. This extension, which was confirmed by several observers independently, was mainly in the upper and middle lobes of the right lung, whereas the older dulness and the wider area of tissue impervious to the X rays were on the left side. At the outset, therefore, a new problem presented itself—on which side was a pneumothorax to be induced? Chiefly on account of the recent extension of dulness there the right side was selected. At the first operation, as well as subsequently, I was unable to proceed with confidence in the assurance that the needle-point was between the two layers of the pleura, both the mean pressure and the rhythmic variations of pressure, as recorded by the manometer, being less than I had been accustomed to see. A small quantity of nitrogen was, however, injected, and from the diminution of air-entry over the whole lung one judged that it was safely lodged in the pleural cavity, or, possibly, in a limited pocket of that cavity. Considerable pain and shock attended the injection, but soon passed off. After the third injection into the right side (still with unsatisfactory guidance from the manometer), some ten days after commencing operations, the clinical features were not appreciably altered, and examination under the X ray screen did not reveal any general collapse of the lung, hence much hesitation was felt about proceeding with this side, and the assumption was made that the lung was adherent by the greater part of its surface to the parietal pleura. In this extremity it was decided to attempt the introduction of gas cautiously into the *left* pleural cavity, in the hope that the lung might not be adherent, and that, in view of the continuance of fever in spite of some diminution of air-entry, already effected, into the right side, the desired check upon auto-inoculation might yet be obtained by collapsing the left lung. This operation was, however, attended with even more shock and pain, as well as the same technical difficulties as formerly, and in consequence has not been repeated.

In the short interval which has elapsed since the last injection the patient's condition has been approximately the same as before the first; there is no evidence of harm having resulted, and the pain produced by the injections has on every occasion subsided within a few hours. This case cannot, then, be cited for or against the principle of resting a tuberculous lung; nor, in view of the technical difficulties encountered, should it be cited against the possibility (yet to be investigated) of collapsing with advantage each lung in turn, or both partially, where extensive disease exists on the two sides, resulting in disturbances of the mechanism of immunisation such as are described in this paper.

CASE 4.—To those who have watched this series of cases the last one—that of a girl of 16 years—stands out sharply differentiated from the other three; clinically by marked cyanosis, the absence of fever and cough, but also by the persistence of a low opsonic power and the absence of auto-inoculations, as revealed by the steady index. In essaying to benefit this patient, then, by the method under consideration it was necessary to proceed upon quite a different hypothesis and expectation. She was, it seemed, a victim of under-production and over-expenditure of protective substances—in other phrase, these substances in her circulating blood were being constantly used up by contact with a large area of tuberculous tissue, and the mechanism for replacing them was unable to keep pace with the demand made upon it, there being in consequence a balance always on the side of expenditure. Assuming her to possess a normal capacity for *producing* protective substances, one could anticipate her return to a more favourable balance of affairs (with an opsonic index at, or above, normal) if means could be found to avert, in some measure at least, this excessive absorption of protective substances from the blood in its passage through the affected lung. This sequence of events it was hoped to bring about by a reduction of movements and of blood-supply through the lung when collapsed, but only in part has this hope been fulfilled.

The opsonic index showed a small but definite rise after the induction of pneumothorax—from an average of 0·60 (on a series of four estimations in the close neighbourhood of this figure), before, to an average of 0·85 (on a series of six estimations varying between 0·70 and 0·92) after; but, with or without attempts at active immunisation by tuberculin, it has been found impossible to maintain it at a level higher than this—and only twice in the course of five months has it crossed the normal line. Either the collapse of the lung was an insufficient means of cutting down expenditure, or the optimum dose of tuberculin has not yet been ascertained, or, as seems more probable, the patient has not, as was at first assumed, a normal capacity for producing protective substances in response to stimuli, natural or artificial. The extension of disease in the other lung, noted below, as well as the indifferent result obtained, in contrast to Cases 1 and 2, will most readily be explicable in reference to this latter deficiency of production.

In this case, like the first two, physical examination pointed to infiltration of the whole of one lung (left), and several observers were unable to detect any evidence of disease in the other. She had been steadily losing ground since an initial hæmorrhage four months previously. Very shortly after the introduction of nitrogen into the left pleural cavity a rub developed in the right axilla, and after three months the lesion thus betokened had advanced to a larger and definite patch of dulness.

As her general condition was not making marked progress, although not going back, I then withdrew some of the nitrogen from the left side with a view to introducing it into the right pleura. During this process of sucking out the nitrogen the border of the collapsed lung, examined from time to time under the X ray screen, could be definitely seen to approach again the thoracic wall, from which it had been separated by a wide interval for three and a half months. A very fair air-entry, too, was detected by the stethoscope, but, unhappily, with it could be heard the adventitious sounds which had been present before the induction of pneumothorax. In view of this it was judged expedient to renew the collapse of this lung for a further period, but before doing so a small quantity of nitrogen was introduced into the newly affected right side in the hope that a very partial pneumothorax might suffice to check the extension of disease there. A sharp watch was kept for signs of distress owing to the presence of gas in both pleural cavities, but these have not occurred, and the patient is now getting up and walking better than at any previous time, is gaining a little weight each week, and her colour is notably less cyanotic. During the first two months after commencing the treatment a rapid pulse-rate (100–130) gave rise to some uneasiness, being associated with frequent attacks of vomiting and faintness on getting up, but this condition of affairs cleared up with the lapse of time and the administration of large doses of digitalis. Her temperature was seldom above 99·5° F. either before or after the induction of pneumothorax, but recently it has kept more steadily subnormal.

For guidance in the problem discussed under Case 1, of when to refill the pleura with gas and when to allow expansion of the lung to occur, resort has again been had to the opsonic index—a return at any time to a very low level being taken as at once a warning and an indication for re-injection. In other cases of this type, but manifesting no deficiency in their capacity for producing protective substances, it is to be expected that the indications thus afforded would be much more clearly marked than in this case, and also that at some period of their course, if the degree of collapse was insufficient, they would manifest the phenomena of auto-inoculation characteristic of Cases 1 and 2, and that this would henceforth serve as the alternative indication for re-injection.

In view of the fact that these were all very grave cases, and that in two of them, at any rate, the rest afforded to the lung has marked, indisputably, a turning point in the infection, it would appear that the method is worthy of serious attention, and that the dangers (chiefly avoidable) inherent

in it, as well as its inapplicability to some cases, should not put it out of court for all.

The technique employed throughout for the injection of these cases has been substantially that taught me by Dr. Lillingston, to whom I am indebted for kindly undertaking the first two operations, as well as for many subsequent suggestions. It is possible that after the initial difficulties with technique encountered in the injection of Case 3 one might have proceeded to a more satisfactory issue by the method of open incision advocated by some writers.

To Sir Almroth Wright I am indebted for permission to publish these cases, and for continuous counsel during their treatment.

My thanks are also due to Dr. G. H. Orton for much help in connexion with the frequent X ray examinations of these cases.

St. Mary's Hospital, W.

A CASE OF ARTIFICIAL PNEUMOTHORAX,

PRODUCED IN TREATING CHRONIC PULMONARY TUBERCULOSIS.

BY S. VERE PEARSON, M.R.C.P. LOND., M.B. CANTAB.,

A. DE W. SNOWDEN, M.A., M.D., B.C. CANTAB.,

AND

CLAUDE LILLINGSTON, M.B., B.C. CANTAB.

THE account of the following case of pneumothorax, artificially produced and kept up by injections of nitrogen gas for the treatment of chronic pulmonary tuberculosis, should be of interest as being one of the first cases, if not the first case, produced in England with such an object. The success of the treatment has been striking, although the pneumothorax produced is, on account of adhesions, only a partial one. A brief account of a second case in which this method of treatment was attempted without success is added, and contains points of interest.

CASE 1.—Male, aged 34. Previous history: The patient originally suffered from subacute pulmonary tuberculosis affecting the upper half of the right lung in February, 1902. He devoted the greater part of the subsequent two years to his health, spending part of the time at a sanatorium in Wales, and at the end of this period he got his health well restored. He lived in South Africa for several years. In 1907 he married. He was at work regularly in the City for a year up to the autumn of 1908. Then a recrudescence of the lung trouble broke out, apparently partly due to worry connected with the illness of his wife. At the end of October, 1908, he was admitted to the Mundesley Sanatorium.

Condition in November, 1908.—Old fibrosis in the right upper lobe; recent, extending, and decidedly active infiltration and partial consolidation in the right lower lobe; recent infiltration in the left upper lobe and apex of the left lower lobe. Temperature, 99·4° A.M. and 100·6° F. P.M. rectally. Morning pulse, 90 to 100. Cough troublesome; expectoration heavy, greenish muco-pus, about 30 c.c. daily. Tubercle bacilli plentiful. Dyspeptic; well-covered, but very flabby and anæmic.

History between November, 1908, and August, 1910.—Progress was chequered, periods of improvement alternating with exacerbations of symptoms. A bad relapse with hæmoptysis started in May, 1909, just when he seemed about to be well enough to return home. His temperament was against him, for he has always been too readily depressed, too apprehensive of ill, and nervously worried. Anticipation of departure from the sanatorium contributed largely, in our estimation, to the relapse in May. After this the disease became severe in the right lower lobe, but by degrees this extension quieted down and the patient went home in December, having had a morning pulse of 78 and rectal temperatures of 96·5° A.M. and 98·4° P.M. for many weeks previously. He kept fairly well until June, 1910, when he was readmitted to the sanatorium. During June, July, and early August very slow progress was made. Pulse was always over 94, and evening temperature at 9 o'clock averaged 100·4°. The slight disease which had existed on the left side had at this time cleared up, and no adventitious sounds were audible there; in the right lower lobe softening had occurred and was occurring.

Artificial pneumothorax decided upon.—The patient was in the depths of despair, and could not contemplate months of rest in bed and endurance of feeling so ill as he did. The prospect of accomplishing marked improvement by the ordinary *régime* seemed very slight. He was getting towards the end of his tether, though not actually in an imminently grave state. At this juncture one of us (Dr. Claude Lillingston) extolled to the others the merits under certain circumstances of the production of artificial pneumothorax. This procedure was decided upon, and the first puncture was made on August 11th, 1910, in the sixth space just posterior to the mid-axillary line. It was successful in reaching the pleura. 300 c.c. of nitrogen were given on this and the following days, the highest positive pressure reaching 4 cm. of water on the manometer scale. The following injections were given at the same site each time, finishing with the highest positive pressure represented by the figure in the third column:—

Date.	Cubic centimetres of N.	*Plus* centimetres of water	Date.	Cubic centimetres of N.	*Plus* centimetres of water.
Aug. 13th	450	8	Aug. 30th	320	7
,, 15th	200	6	Sept. 4th	300	6
,, 17th	400	6	,, 7th	500	10
,, 19th	175	6	,, 12th	600	14
,, 22nd	600	11			

Between Sept. 20th, 1910, and March 6th, 1911, 18 further injections have been given by one or other of us or by Dr. W. Wynne, his home medical adviser. The amount given has varied from 175 c.c. to 600 c.c. and the pressure was gradually raised to 32 cm., and on one or two occasions to 34 cm. At the time of writing injections of about 450 c.c. are given about every fifteenth day, and the pressure is raised at each injection from about *plus* 6 to *plus* 30 or 32 cm.

Results of treatment.—The temperature dropped almost at once, the average temperature readings, August 11th to 18th, being: A.M., 97·3° F. (36·3° C.), and P.M. (highest), 99·3° F. (37·4° C.) rectally. On August 19th, 20th, 21st, and 22nd the temperature was never above 98·6° F. (37° C.). From August 24th to 29th there was a bout of high fever with a sharp pain in the right side, but without any sign of pleurisy or fluid. From the end of August, 1910, up to May, 1911, the rest temperature has on no occasion been above 98·6° F. (37° C.) rectally. The pulse became a little more frequent at first after August 11th, and then at the beginning of September gradually showed slight improvement in rate and considerable improvement in quality. Four months later it was still rather too frequent, but gradually improving.

The clearing up of the general symptoms was rapid and steady. On August 23rd the patient said, "I feel a different man." Early in September he was beginning to get up and about. By the end of the month he was walking about 1½ miles daily and by the beginning of November about 3 miles daily, which amount, or a little more, he continues to do comfortably. On Sept. 8th he remarked that it was the first morning on which he had not coughed before breakfast for many months, and the cough had almost gone altogether. By three months after the induction of the pneumothorax the cough became rare, but occasionally, about once every two or three days, generally a few days before an injection, a blob of mucoid or muco-purulent expectoration was coughed up. The expectoration used to teem with bacilli, and was green and heavy. Now bacilli are not usually found, and the sputum, when it does occur, is light in colour and consistence.

The ordinary signs of pneumothorax remain fairly constantly present over the greater part of the right chest, except that there are no definite bell note and no tinklings. Ordinary examination and that by X rays show the pneumothorax to be incomplete superiorly and posteriorly towards the vertebral column. On Jan. 2nd, 1911, the patient wrote to us saying he was "feeling very fit and well." Again, on July 7th, 1911, he writes, "I feel very well indeed all round."

CASE 2.—Male, aged 38. Years of ill-health, due to phthisis with some periods of temporary recovery, had resulted in severe chronic invalidism. From November, 1908, to October, 1910, he had been confined to bed almost constantly with slight and varying but obstinate fever—average rectal readings being about 36·9° C. (98·4° F.) A.M., to 38·0° C. (100·4° F.) P.M. Cough frequent, loose, but not

actually distressing. Expectoration plentiful (one to two medium-sized cupfuls per 24 hours), purulent, and always teeming with tubercle bacilli. The disease was bilateral, but always much more severe on the left side, where signs indicated the probable existence of extensive excavations and fibrosis with much thickening, especially basally.

Although pleural adhesions were suspected, the state was one which we thought suitable for attempting to produce a left-sided artificial pneumothorax. We all felt sure that the fever was kept up by the left-sided disease, and that the expectoration came from this side practically entirely. The lesions on the right side were comparatively slight, and this lung alone was quite capable, we thought, of supporting the patient comfortably in a quiet life, and with every likelihood of a capacity for more activity than he had enjoyed for years. Ordinary treatment had not availed to better the patient's condition materially, although it was entirely successful in maintaining a fairly good general, digestive, and circulatory condition, as well as a moderate degree of personal comfort, and in reducing the activity of the disease. He had seen the remarkable results produced by artificial pneumothorax on the patient first quoted. Although we told him that success was not assured, or even likely, he anxiously desired that the attempt should be made. Six punctures were made on two separate occasions with a Saugman needle made for us by Messrs. Allen and Hanburys. On these two occasions each of us attempted to reach the pleural cavity at different sites but without success. The punctures demonstrated that the surmise as to the pleura being thickened was correct. At one or two places it felt very thick and tough. The patient's condition eight months after the second effort at producing pneumothorax is *in statu quo ante*.

A CASE OF TORSION OF THE PEDICLE OF A UTERINE FIBROID.

BY CHARLES A. MORTON, F.R.C.S. ENG.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRISTOL; SENIOR SURGEON TO THE GENERAL HOSPITAL AND THE HOSPITAL FOR CHILDREN AND WOMEN; CONSULTING SURGEON TO THE COSSHAM MEMORIAL HOSPITAL.

TWISTING of the pedicle is a fairly common complication of ovarian tumour, but it is by no means so frequent in uterine myomata. In 1908 Dr. Stephen Tracey of Philadelphia published a paper[1] on a Study of Degeneration, Complications, and Associated Conditions in 3561 Cases of Fibroid of the Uterus. In only seven cases was the complication of twisting of a pedicle present. The total of 3561 was obtained from the records of 16 authors who had each contributed to surgical literature a series of 100 or more cases. When torsion of the pedicle of a fibroid does occur, it is said[2] that it may cause hæmorrhage into it, and œdema, or even gangrene, and this may lead to a fatal peritonitis. In small fibroids the tumour, it is stated,[3] may even be twisted right off the pedicle, as happens also with some ovarian cysts. Of course, the fibroid must have a fairly long pedicle to allow of this twisting. It is said[4] that at the time of twisting severe pain may be caused. It is also stated[5] that if the obstruction to the circulation is incomplete "a subacute inflammatory reaction may ensue, leading to the formation of extensive adhesions with adjacent structures, particularly the great omentum, by which the nutrition of the tumour is maintained." In my own case the fibroid was congested and hæmorrhagic, and the great omentum was loosely adherent to it. The changes were those often found in an ovarian cyst with a twisted pedicle—congestion, hæmorrhage, and dry adhesive peritonitis.

In some cases not only is the tumour rotated, but the uterus itself is twisted. A case in which this occurred is recorded[6] by Dr. S. J. M. Cameron of Glasgow. In his case the uterus was twisted so that the right tube and ovary lay to the left of the middle line. The tumour was in the same condition as in my own case—very congested and hæmorrhagic. In a case recorded[7] by Mr. A. M. Connell of Sheffield, in which the tumour itself had not undergone torsion, the uterus and appendages had become greatly twisted. The twisting of the genital organs was associated with severe pain and frequent vomiting. The abdomen was opened after symptoms had existed for 60 hours. The twisted uterus and appendages were chocolate-coloured, swollen, and œdematous, with patches here and there of a greenish-yellow lymph on their surfaces. The patient recovered.

The patient, a married woman, aged 39, was seen in consultation with Dr. W. H. Stevens on the afternoon of Tuesday, Feb. 8th, 1910. She had then had pain across the lower abdomen for nearly 48 hours. It began on the evening of the 6th and was not very severe at the commencement, so that she was able to go out after it started, but some hours later it became severe, and was so bad in the night that she could not lie in bed. There was no vomiting. The bowels had acted during the period in which the pain had been present. She had noticed a lump in her abdomen for two years; sometimes she found it in one part of her abdomen, sometimes in another, but most frequently in the right lower abdomen. Menstruation was regular but scanty. It had ceased two days before the onset of symptoms. There was no history of leucorrhœa. The highest temperature during the time Dr. Stevens had been attending her—i.e., since the onset of the pain—was 100°.

There was a mass in the left lower abdomen which caused a visible prominence there. It reached to just above the umbilicus, and as far inwards as the middle line, and outwards and downwards to the anterior superior spine and Poupart's ligament. It was too tender to handle much, but it felt hard and regular in outline. It did not move readily with light palpation. There was no tenderness at all on vaginal examination, although the abdominal tumour was so tender. The cervix was displaced much to the left—i.e., to the same side as the abdominal tumour—and to the right of it was a flat, hard mass, with a round, hard nodule projecting from it. This certainly felt like a fibroid. Nothing further was made out on rectal examination. The complete absence of the tenderness, which was so marked on abdominal examination, suggested that the mass felt per vaginam on the right of the uterus was a separate tumour. The abdominal tumour was too tender to make firm pressure on it to see if it moved independently of the pelvic one. The onset of the symptoms I have mentioned, associated with the history of some swelling in the abdomen preceding it, suggested the twisting of the pedicle of an ovarian cyst, and it seemed to me quite possible this might be the condition with which we had to deal. On the other hand, the pelvic tumour certainly felt like a fibroid, and this raised the question whether the abdominal tumour might not also be a fibroid, associated with some local peritonitis, perhaps from tubal infection on that side. The possibility of it being a fibroid with a twisted pedicle did not occur to me, for such a condition is quite rare. The hardness of the abdominal tumour might very well have been caused by tension in an ovarian cyst, due to hæmorrhage into it, from twisting of its pedicle. The fact that the patient had noticed the tumour in various parts of the lower abdomen suggested that it might be an ovarian cyst with a long pedicle, but two years was certainly a very long history for a small ovarian cyst. On the other hand, the pedicles of fibroids are seldom long enough to allow of any very extended range of movement. But patients' observations are often very inaccurate, and when we came to examine the tumour it was evident that it could never have moved very far to one side or the other.

I advised immediate operation, as the presence of an ovarian cyst with a twisted pedicle seemed quite possible, but the patient preferred to see if she got better without, as she was not then in severe pain. I did not see her again until Friday, the 11th, when she came into hospital. The pain by then had much decreased. The temperature had been between 99° and 100° each afternoon. Menstruation had come on again. The tumour was much less tender, and felt very hard, but there was a considerable amount of tympanitic distension. The condition on vaginal examination was unaltered. She had a great deal of colicky pain about

[1] Journal of Surgery, Gynæcology, and Obstetrics, 1908, vol. vi., p. 246.
[2] Hart and Barbour: Text-book of Gynæcology.
[3] Sutton and Giles: Text-book of Gynæcology.
[4] Ibid.
[5] Roger Williams: Uterine Tumours.
[6] Brit. Med. Jour., 1905, vol. ii., p. 712.
[7] Journal of Obstetrics and Gynæcology of the British Empire.

the abdomen during the night after admission, but this and the distension were relieved by hot turpentine enemata. The temperature was 99·8° in the evening and pulse 124.

I operated on the 12th. On opening the abdomen I found a little free serous fluid. The abdominal tumour was a fibroid, of the size of a cocoanut, with a pedicle an inch long, and of about the thickness of a moderate-sized finger, attached to the fundus of the uterus. It was twisted so that it required one complete revolution of the tumour to untwist it. To the tumour the great omentum was loosely adherent, and when it had been detached the surface of the tumour was found to be rough from recent exudation. It was of a purple colour, and on section was pink in colour and hæmorrhagic. It was a typical fibroid in structure. There was also another fibroid of the same size, burrowing in the right broad ligament. This was the tumour felt per vaginam before operation. The fundus of the uterus was pushed up, and to the right, and on it was another fibroid of the size of a hen's egg. I did not perform hysterectomy, as there was no evidence that these fibroids had ever caused any trouble, nor was the condition of intestinal distension favourable to such an operation. Nothing could be seen of either ovary, but in the position of the ovaries were fluctuating red masses of the size of hens' eggs. The Fallopian tube passed over the tumour on each side, and its fimbriated end was lost on the cyst wall. They were both removed and were found to be thick-walled cysts, containing material like rather liquid putty, but no hairs. She bore the operation well and made an uninterrupted recovery.

Clifton, Bristol.

A CASE OF ACUTE INFLAMMATION OF THE THYROID GLAND.

BY CHARLES W. BONNEY, M.D.

Dr. W. S. Robertson's paper on Acute Inflammation of the Thyroid Gland, which was published in THE LANCET of April 8th, p. 930, has been read by me with much interest, inasmuch as I had a case in my own practice about a year and a half ago. I have arranged to present my patient at the next meeting of the Jefferson Clinical Society in September, and had also intended to review the literature of the subject before that time. Dr. Robertson has studied it so thoroughly, however, that little remains for me to do except to report my case, which is an unusual and instructive one.

The patient was a man, 36 years old, a native of France, though long resident in the United States. He first came under observation on Oct. 4th, 1909, for a profuse nasal hæmorrhage, which was found to take origin from an ulceration of the septum. At that time it was noticed that the thyroid gland was somewhat enlarged and that the heart's action was more rapid and forcible than normal. At an examination made a few days later, after he had entirely recovered from the attack of epistaxis and its effects, it was found that a slight tremor could be elicited when our finger tips were placed together. The eyeballs also seemed to be more prominent than normal, although they did not show decided bulging. With reference to the goitre, he stated that he had first noticed it about 16 years before, while working in a mountainous district in Tennessee, where the water was said to be highly impregnated with lime salts; and, furthermore, that it had never caused him much annoyance, but that at times it would increase rapidly in size for a few days and then gradually become smaller again. Evidently the case was one of an old goitre, possibly cystic or telangiectatic, which had begun to assume the characteristics of the exophthalmic type.

On Oct. 25th, while at work, the patient was stricken with acute lobar pneumonia, the onset of which was typical, although its course was somewhat irregular. Crisis took place on the seventh day, but convalescence was disturbed within a few days by slight elevation of temperature, pain and soreness in the neck, and the redevelopment of cough, which, however, was not at all severe. Only a few days' observation was required to determine that the goitre was increasing in size. It continued to enlarge until at the end of two weeks it had displaced both sterno-cleido-mastoid muscles and completely obliterated the suprasternal notch. In the meantime the patient's general health had become much impaired. By Nov. 25th he was suffering so greatly from dyspnœa that he could not lie down; he also had considerable difficulty in swallowing, was always conscious of a sense of fulness and pressure in the head, and was harassed constantly by sharp pain in the neck, which extended down into the shoulders and arms. His skin had assumed that peculiar waxy look which one is wont to associate with malignant or amyloid disease. The evening temperature never exceeded 100° F., and was usually about 99·4°. The enlarged thyroid was hard and resistant to the touch, and the overlying skin was not in the least discoloured. A consultant who was called at this time was of opinion that the patient was suffering from a rapidly growing sarcoma and advised against operation. The question of acute strumitis was raised, but in the absence of symptoms pointing to suppuration its existence was not considered at all likely. Omitting the truly distressing details of the patient's daily deterioration I will merely state that by Nov. 30th he was suffering so excruciatingly from pressure symptoms and pain that he threatened to commit suicide unless an attempt was made to afford him relief. Against the advice of several gentlemen familiar with his case I decided to operate, and consequently admitted him to the Methodist Episcopal Hospital on Dec. 1st, and on Dec. 3rd, assisted by Professor Rodman and a member of the house staff, I operated under chloroform anæsthesia.

The so-called collar incision was made and the skin flap turned back, after which the muscles were divided and liberation of the goitre begun in the usual manner. The left lobe was freed without much difficulty, but the right one was so firmly fixed, and apparently so intimately connected with the superjacent, lateral, and subjacent tissues, that sharp dissection was begun in order to liberate it. A few strokes of the scalpel were followed by an issue of pus, the exact source of which, however, was not immediately determined. The wound was surrounded with gauze and forceps passed into the opening from which the pus was oozing, whereupon the flow became copious. Several ounces, certainly eight or ten, came out. When the flow had apparently nearly ceased I passed my finger through the aperture from which it was coming and swept it around the walls of a large cavity into which it found its way, thinking thereby to bring forth any remaining thickened collections of pus or tissue débris. This manœuvre was followed by a tremendous gush of blood, which must have resulted in exsanguination of the patient had it not been quickly controlled by packing the cavity whence it issued with long and thick strips of gauze. A few seconds only were sufficient to show that pressure forceps and clamps would avail naught in stopping the bleeding, so packing was at once resorted to; as it was the patient lost a large quantity of blood. It would seem that the entire left lobe of the thyroid had become converted into an abscess cavity, and that when the wall of the latter was broken down by my exploring finger both arterial and venous vessels poured out their contents into it.

The patient was taken back to bed as soon as possible, and although his condition was critical for a few hours he reacted well and eventually made a good recovery. The packing was not removed until the fourth day. No hæmorrhage followed its removal. Pus was discharged from the wound for a number of weeks, and after it had stopped a thin brownish fluid was discharged for awhile before closure finally took place. The last of this fluid was seen on Feb. 2nd, 1910.

A culture of the pus which was taken at the operation gave a pure growth of pneumococci. Dr. Harlan Shoemaker, who examined the culture, endeavoured to reproduce the organisms, but they did not grow satisfactorily. He stated that their vitality was reduced and their virulence probably attenuated.

Philadelphia.

ANTIVACCINATIONISTS ON THE INCREASE.—At a meeting of the Garioch district committee held on June 24th it was stated in the report of the public health subcommittee that the medical officer had reported that the number of statutory declarations of conscientious objectors under the Vaccination (Scotland) Act, 1907, was increasing at an alarming rate, and might lead to a serious epidemic in the event of an outbreak of small-pox.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF RÖTHELN WITH ANGINAL THROAT, FOLLOWED BY FATAL PURPURA HÆMORRHAGICA.

BY ERNEST STRATFORD, M.R.C.S. ENG., L.R.C.P. LOND.

GERMAN measles is so frequently regarded as a slight and unimportant ailment that I feel impelled to record a recent unpleasant experience, in the hope that it may lead to a more serious view being taken of this condition by other practitioners.

The patient, a boy aged 3½ years, had previously been healthy; there were no other children in the household. When first seen on May 17th there was a well-marked confluent rötheln rash on the face and chest, normal and characteristic except in severity. The temperature was 105·5° F.; the throat was congested, and the tonsils were enlarged. Treatment: hyd. c. cretâ (gr. i.), simple fever mixture, and formamint lozenges. On the 19th the temperature was 105°. The tonsils were enormous, with a yellow slough on one; rash was present all over the body. This condition lasted for three days. As the tonsillitis was so severe and as the child had ceased to accept formamint, I injected diphtheria antitoxin (3000 units). The left tonsil sloughed away; the right remained enlarged two days later, but was clean. The temperature was still 104°. On the 23rd the rash had commenced to fade and had entirely disappeared by the 26th (nine days from appearance), except for staining. The temperature, however, remained between 104° and 105°, and the right tonsil was persistently inflamed. In view of the relative failure of antitoxin I prescribed sodium salicylate (7 gr.) and tr. ferri perchlor. (5 min. t.d.s.) on the 26th. On the 30th the child's nose bled and hæmatemesis occurred, being treated by ice and cold applications. On June 1st the temperature was down to 101°; the tonsil was still large but softer, but there was profuse hæmorrhage from the nose and gums. Both feet were œdematous and there was hæmaturia; no albumin or tubal casts were found, but large quantities of red corpuscles were seen with the microscope. Calcium lactate (15 gr. t.d.s.) was prescribed, but owing to frequent hæmatemesis the amount absorbed was uncertain. On the 4th numerous purpuric petechiæ appeared on the legs, body, and face. On the 5th I was called urgently in the morning and found the child blanched; pulse 140, feeble. Two large clots were removed from the nostrils, the petechial spots were increased in number, and nearly pure blood was passed per urethram. Owing to another urgent case I was unable to get to the child again until the evening, when I took two pints of normal saline with 1 in 2000 adrenalin chloride, intending to inject intravenously; the child had unfortunately died five minutes before I reached the house. Post mortem, bleeding continued from the nose for 12 hours, and numerous large subcutaneous ecchymoses appeared on the upper surface of the body, whilst the sugillations were very extensive.

There was an epidemic of a very mild type of rötheln in the town, and there were cases in the same road. The rash, enlargement of concatenate glands, &c., were typical though abnormally severe, as was the tonsillitis. But the purpuric eruption coming on after the fading of the rash, accompanied by epistaxis, hæmatemesis, and hæmaturia, to my mind makes it clear that it was a case of purpura hæmorrhagica sequential to what one might call "malignant" rötheln. One is not surprised to find purpura associated with malignant morbilli or variola, but I can find no record of its association with rötheln, nor have I seen rötheln accompanied by so severe a tonsillitis. The text-books at my disposal, including Osler, make no mention of purpura as a complication of rötheln, and, indeed, most of them dismiss the disease as an almost negligible ailment. A doubt has entered my mind as to whether there could be any connexion between the antitoxin injection and the purpura, but I have never seen anything more than an urticaria follow much larger doses. I shall be glad to hear if any fellow practitioner has had a similar experience.

Wellington College Station.

NOTE ON A CASE OF FRACTURE OF THE THYROID CARTILAGE.

BY ELSIE M. ROYLE, M.D., D.P.H. VICT.,
ASSISTANT MEDICAL OFFICER, CITY OF LONDON INFIRMARY, CLAPTON, N.E.

THE patient in the following case, an old woman, 74 years of age, was suffering from chronic bronchitis and emphysema. She was up and dressed, and went into the lavatory on April 11th, 1911, about 6 P.M.; while stooping down over the water-closet pedestal she slipped and caught her chin on the edge of the seat, and was unable to rise. She was found immediately after in this position kneeling on the ground, with her chin ledged on the seat, and was assisted to rise by a nurse, after which she was able to walk back to her bed. Ten minutes later she was seized with the most urgent dyspnœa. The eyeballs were prominent and staring, and the expression was anxious; the chest moved but little with respiration, the patient complaining of pain in the right side of the throat. Dyspnœa gradually increased, and in spite of the administration of stimulants the pulse began to grow feebler. It was evident that there was laryngeal obstruction, and that a serious injury to the thyroid cartilage had occurred. Hence tracheotomy was performed without an anæsthetic, since it was not deemed safe to administer one; breathing improved for a short time, but the patient gradually sank and died about an hour after the operation.

An inquest was held, and the post-mortem examination revealed a horizontal fracture of the right ala of the thyroid cartilage. Hæmorrhage had occurred beneath the mucous membrane and a hæmatoma extended from the site of fracture along the right aryteno-epiglottidean fold on to the false and as far as the right true vocal cord, obstructing the glottis almost completely. The chief interest of this case is the somewhat unusual nature of the accident and the fact that the laryngeal obstruction developed gradually, coinciding with the spread of the hæmorrhage beneath the laryngeal mucous membrane.

Medical Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Lymphadenoma.—The Part Played by the Upper Air Passages as Avenues of General Infection.

A MEETING of this society was held on July 5th, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. D. CHALMERS WATSON demonstrated a man, aged 41, suffering from Myasthenia Gravis. The patient was a paraffin worker, and had been getting gradually weaker since the beginning of the year. Pains throughout the body had lasted six weeks. The clinical condition was characteristic of the disease.

Dr. G. LOVELL GULLAND showed a man suffering from Locomotor Ataxia who had greatly benefited by injections of salvarsan.

Mr. CHARLES W. CATHCART showed a woman, aged 40, after operation for Gall-stones complicated with Cyst in the Head of the Pancreas. For 15 months she had had frequent attacks of abdominal pain, sickness, and jaundice. The gall-bladder contained several stones, the common duct had none. A cyst of the size of a walnut was found in the head of the pancreas. The gall-bladder and pancreatic cyst were drained through the anterior wound and a good recovery was made.

Dr. GEORGE A. GIBSON showed: 1. A man, aged 41 years, who complained of Uneasiness in the Chest and Breathlessness on Exertion. His vessels were healthy, diastolic arterial pressure 92, systolic 133, pulse regular and equal, heart slightly enlarged, long late systolic thrill continued beyond second sound, harsh murmur through similar period, also separate aortic diastolic murmur. Skiagram showed no shadow above that of the heart more than normal. The

diagnosis was that of patent arterial duct with aortic disease. 2. A patient admitted with Purpura in the fifth year of syphilitic infection. A fusiform dilatation of the aorta was diagnosed. A great reaction ensued on the injection of salvarsan followed by left hemiplegia. The arterial pressure throughout never exceeded 90 diastolic and 140 systolic.

Dr. GULLAND and Dr. A. GOODALL described a case of Lymphadenoma treated with salvarsan. The case was a typical one, occurring in a man, aged 25 years. Employment of all the usual remedies had failed completely to ameliorate the condition. There was a remarkable although temporary improvement in the temperature and condition of the glands following intravenous injections of salvarsan. There was a gradual failure to improve on repetition of the injections and death followed. Dr. Gulland believed that if treatment had been commenced at an earlier date cure might have been effected.

Dr. A. LOGAN TURNER opened a discussion on the Part Played by the Upper Air Passages as Avenues of General Infection. He said that this subject must necessarily be of intense interest, not only to the general practitioner, but to the specialist in every branch—to the public health official and to the pathologist and bacteriologist. This gateway was prone to infection because as respiratory passages, and over a limited area as part of the alimentary canal, they were open to both air and food infection. Both in health as well as in catarrhal conditions of the mucous membranes of individuals apparently in perfect health micro-organisms were constantly present. These organisms varied in number, in vigour, and in pathogenicity, whilst the tissues of the host might undergo a diminution in resisting power, or fresh organisms might gain entrance, and bacteria previously quiescent or avirulent might become active and give rise to acute infection. In the mucous membrane of the upper air passages there was a well-developed lymphatic network and free communication by efferent vessels with the cervical lymphatic system, and through it with the blood stream. Many experimenters had shown that a general blood infection might readily follow the smearing of the pharyngeal mucous membrane with the streptococcus. The pathways of infection from this area were numerous: (*a*) the lymphatic ring with the naso-pharyngeal, faucial, and lingual tonsils and the lymph nodes of the pharynx all communicated with the cervical lymphatic system, and thence with the blood-circulating system; (*b*) the venous channels connecting the upper air passages with the central nervous system; (*c*) the lower air passages in direct continuity, and hence inhalation infections; and (*d*) the œsophagus in direct continuity, and hence ingestion infection.

A. *Infection of the cerebro-spinal system.*—(*a*) The pyogenic organism. The occurrence of meningitis, sinus thrombosis, and brain abscess secondary to suppuration of the nasal and accessory sinus cavities and of the middle-ear cleft was well known, yet there were many cases—e.g., lateral sinus thrombosis—in which the primary source of infection was overlooked. This was even more true in connexion with suppurative disease of the posterior ethmoidal and sphenoidal air sinuses, because the nasal discharge might have been too insignificant to call for remark. In the majority of cases of accessory sinus and ear disease the infection had spread by continuity of the inflammation through the contiguous bony walls, the latter becoming carious or completely absorbed. Infection might also take place through the venous channels which effected a communication between the upper air passages and the interior of the skull. A careful inquiry by Dr. Turner into the possibility of infection by way of lymphatic channels had led him to the conclusion that proof of the same was still wanting. (*b*) and (*c*) Pneumococcal and influenzal meningitis. It had been conclusively shown that these inflammations might arise as a direct infection from the upper air passages. Many observations might be quoted to show the occurrence of the meningococcus in the naso-pharynx not only in patients suffering from this disease but also in those in contact with them and who must be regarded as carriers. The investigations of Westenhöffer and Lingelsheim had demonstrated that the naso-pharynx was a more frequent portal of infection than the nasal cavities and accessory sinuses. If these facts were accepted, by what pathway did the organism reach the meninges? The part played by the lymphatic vessels was still open to discussion. Possibly in some cases infection might pass through the sphenoidal sinus and thus reach the meninges, but Hirsch had raised the question as to whether the middle-ear cleft might not sometimes be the route of infection, and thence through the labyrinth and internal auditory meatus. This suggested that the labyrinthine deafness of cerebro-spinal meningitis might not always be secondary to the meningitis, but that it might possibly precede it. As to acute poliomyelitis, Flexner considered that all the theoretical conditions required to establish the naso-pharyngeal route of infection had been supplied by experiment. It had been shown that naso-pharyngeal catarrh was very prevalent in communities in which poliomyelitis existed. Wickham had called attention to the lymphatics as the route of infection. With regard to tuberculous meningitis, Weigert believed that the nasal and post-nasal cavities and their lymphatic tissues formed the usual gateway of infection in tuberculous meningitis. The existence of tubercle bacilli in the healthy nose, their presence in adenoid vegetations and in middle-ear disease, the occurrence of primary nasal tuberculosis as a more common affection in children than was formerly realised, together with the close proximity of the nasal and cerebral cavities, all pointed to the upper air passages as a frequent portal of infection.

B. *Infection of the lungs; pulmonary tuberculosis.*—Dr. Turner asked in what proportion of cases were the lungs infected by the inhalation of the tuberculous virus or through the cervical lymphatic system from inoculation of the mucous membrane of the upper air passages. As to the lymph drainage of this area, the whole of that belonging to the nasal, naso-pharyngeal, and pharyngeal mucous membranes passed through the deep cervical glands into the large veins at the root of the neck and thence to the right side of the heart and pulmonary artery. The tracheo-bronchial glands received their afferent vessels from the mucous membrane of the trachea, bronchial tubes, and pulmonary alveoli. The efferent vessels from these glands terminated in a broncho-mediastinal trunk which opened into the large veins at the root of the neck. No inter-communicating lymphatic vessels had been demonstrated either between the inferior deep cervical glands and the tracheo-bronchial glands, or between the latter and the deep cervical glands. Hence anatomically a descending tuberculous invasion from the cervical to the peribronchial glands or an ascending infection from the latter to the cervical glands was not possible. There was clinical evidence, however, that the deep cervical (supra-clavicular) glands could be affected from the mediastinal glands. In experiments inoculation of the mucous membrane of the upper air passages with tuberculous virus was followed by infection of the cervical glands and the development of pulmonary tuberculosis. Could they always determine the cervical glands as the path of infection to the lungs? Three pathways were possible—inhalation, ingestion, and the cervical lymphatic system. Tubercle bacilli might be present in lymphatic glands without producing any histological evidence of their existence. Once the lungs had become the seat of tubercle the tonsils and cervical glands might be secondarily infected from the tubercle-laden sputum. Dr. Turner asked in what proportion of cases of tuberculous cervical glands did pulmonary tuberculosis develop. In his own experience it was rare to find this lung affection developing in connexion with primary tuberculous disease of the nose and pharynx. In cases of laryngeal tuberculosis secondary to pulmonary phthisis one did not detect enlarged cervical glands. If one granted the cervical lymph glands as avenues of infection how did the tubercle bacilli pass from them to the lungs? The view that the apex of the pleura and lung was directly infected from the cervical glands had been strongly opposed. In the absence of any direct lymphatic connexion between the cervical and bronchial glands, tuberculous infection of the lungs by way of the cervical glands could only take place through the large veins and the right side of the heart. Albrecht had formulated the view that the primary site of infection was most often in the lung from inhalation. If the cervical glands were also tuberculous, it was secondary to the pulmonary affection, either from secondary infection of the pharynx through the sputum or by an ascending gland infection from the peribronchial glands upwards.

C. *Infection of joints and bones.*—(*a*) Acute rheumatism. The possibility of the throat as the portal of infection in this disease had been much discussed. Many writers had described an acute inflammation of the tonsils as preceding

the joint affection, and Poynton isolated from the tonsil the same organism as he had obtained from an endocarditis, pericarditis, and arthritis. Valvular inflammation might precede an arthritis or the latter might occur independently. Gürich cured 98 out of 125 cases of articular rheumatism by removal of the tonsils, which in many cases appeared healthy, yet in the crypts inspissated secretion was found, and it was asserted that the rheumatic pains were caused by the toxins absorbed from the organisms in the crypts. (*b*) Suppurative affections of joints and bones; that pyogenic infection of these might enter through the upper air passages must be held as proved, and Dr. Turner cited cases in proof, as one case of osteomyelitis which occurred three days after an acute tonsillitis, and where the staphylococcus aureus was cultivated from both the tonsil and the abscess.

D. Infection of the intestinal canal.—Appendicitis; the relationship between this disease and tonsillitis had been frequently discussed, the blood being considered the pathway by some authors, the gastro-intestinal canal by others. The appendix with its lymphoid tissue had been regarded in its healthy state as performing a function similar to that of the faucial tonsil, and it was reasonable to suppose that both were liable to inflammatory attacks, and Sutherland had asked whether such impairment might not be due to the rheumatic virus.

E. General septic infections.—These might be due to latent inflammation of the naso-pharynx, and attention to this might be the means of curing obscure cases of continued fever.

Dr. R. W. PHILIP said that in the case of scarlet fever or diphtheria the primary manifestations occurred in the throat, and such facts as these had led him to study the tonsils as the channels of infection of the tubercle bacillus. It was necessary to begin such a study in the child. His view was that the tubercle bacillus might enter the system practically at any point in the respiratory or alimentary tracts, but most likely at that point where these two tracts crossed one another. The mucous membrane in the child was particularly absorbent and owing to faulty hygiene and dirty habits it was always in a more or less devitalised condition. It was rare to find enlargement of the extra-tonsillar glands and when so enlarged it was due to tuberculous invasion. This was shown by the next step in the progress—namely, that the glands at the lower level began to enlarge until they formed a fan-like arrangement of glands in the triangular region, and from this a subsequent invasion of the lung apex took place. These clinical stages had been traced in the experimental feeding of guinea-pigs, an apical pleurisy resulting with a passage of tubercle directly to the lung. It was not the large suppurating glands which were dangerous, but the small cervical tuberculous glands which allowed the tubercle bacillus or its toxins to pass to the apex of the lung and thus demonstrated the immense importance of paying attention to the state of the teeth.

Mr. E. SCOTT CARMICHAEL said that anatomically the glands were arranged in three sets in the neck: (1) those round the spinal accessory nerve; (2) those immediately under the posterior belly of the digastric muscle; and (3) those close to the border of the internal jugular vein. During the first year of life the first group was most often affected, the infection generally spreading from the Eustachian tube and the middle ear or mastoid. It was well, therefore, to perform the radical mastoid operation, for almost always there was extensive tuberculous disease. Almost every one of these occurred in bottle-fed babies. The glands of the second group received their lymph supply from the tonsil and they were found affected in children over a year old. The tonsils were small and showed no external evidence of ulceration, tuberculosis commencing in them at the bottom of the crypts. He asked if they were not justified in removing these tonsils in every case whether they were enlarged or not. One gland infected another, and hence he advocated the removal of all three groups. He could not agree with Dr. Philip as to the direct infection of the apex of the lung from tuberculous glands in the neck. He had dissected many such cases of advanced glandular disease and had found no affection of the apex.

Dr. J. S. FOWLER said that the small enlarged glands were very common in the necks of children, but there was very little post-mortem evidence that they were tuberculous in nature. These glands were present in from 30 to 40 per cent. of all children

Mr. CHARLES W. CATHCART said that tuberculosis in joints must have been carried by the blood, and therefore the anatomical relation between glands and lung did not amount to very much. Tuberculosis of glands was seldom associated with tuberculosis of the lung. He always felt that in merely excising the glands of the neck one had not done one's entire duty, and he was in the habit of always giving directions for the treatment of the tonsil. The lymphatic glands were a natural protection and had great power of recuperation; it was therefore only necessary to clear away those glands which were definitely affected, and he thought that this was a safer procedure than enucleation of all the glands.

Dr. THEODORE SHENNAN said that the retro-pharyngeal gland drained the posterior part of the nasal cavities. It was very difficult to find these in adults, and he wondered if they escaped infection in some way. He thought that infection of the meninges from the naso-pharynx might occur in children through the petroso-squamous suture which was not closed at this period. He had noted that the lymphatic glands at the root of the right lung were much more frequently affected than those of the left lung. Was the absence of visible tuberculous affection of the tonsils proof that they had not been the means of transit of the infection? In cryptogenic pyæmia one always examined the tonsils, and a hidden abscess in the bed of the tonsil might be present.

Dr. CHALMERS WATSON referred to infections of a general nature which had been cured by excision of the tonsils.

Dr. JAMES MILLER thought that a thorough microscopic examination of the tonsil gave much more reliable information than inoculation experiments. The organism of bovine tuberculosis had never yet been found in the lung, though it was present in the cervical glands, and this was a point against the theory of transference of infection from glands to lung.

Dr. GEORGE WILSON (New Zealand) referred to the widespread gonococcal infection of the nose amongst the Maoris and Samoans. This spread up the tear sac and gave rise to an inflammation of the eyes exactly similar to trachoma. The disease was spread by the habit of nose-rubbing.

Dr. GEORGE HUNTER, Dr. A. D. WEBSTER, Dr. H. M. CHURCH, Dr. J. EASON, Dr. T. M. BURN-MURDOCH, Mr. J. W. DOWDEN, and the PRESIDENT also took part in the discussion, and Dr. TURNER replied.

GLASGOW AND NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETIES.

Operative Treatment of "Procidentia."

A COMBINED meeting of the Glasgow and North of England Obstetrical and Gynæcological Societies was held in Glasgow on June 16th and 17th, Dr. A. W. RUSSELL, the President, being in the chair.

Professor J. B. HELLIER (Leeds) introduced a discussion on the Operative Treatment of "Procidentia." He said that he had chosen a very practical subject—the surgical treatment of the commonest of gynæcological conditions, but one which, in his opinion, required elucidation. The subject of procidentia was a wide one and presented many phases for discussion, but he asked the Fellows present to focus their attention on the one question, "What method of treatment gave the best results as regards the permanent cure of the condition?" Professor Hellier first considered the chief difficulties of the problem. The uterus was in whole or in part outside the vulva, and in a position of retroflexion or retroversion, so that the first part of the problem was to secure the uterus in a position of ante-version or flexion. Secondly, he pointed out that in procidentia the uterus was hypertrophied, the enlargement being due to elongation of the supravaginal cervix, to the body of the uterus itself, and to the enlargement of the labia cervicis, especially where there were old-standing lacerations. These uterine conditions, in his opinion, required attention during the operation for the radical cure. Thirdly, he pointed out the prolapsed state of the vaginal walls—cystocele and rectocele—and urged that no operation was of any use where these conditions were left untreated. He referred to the changes taking place after the

menopause, and showed how such changes caused a procidentia or made an existing one worse. The most serious difficulty, he said, was the effect of further child-bearing on cases that had been operated on. He doubted if there was any operation that was free from risk or difficulty in a labour following or where relapses would not occur. The best results were obtained after the menopause or where sterilisation was performed. He thought sterilisation justifiable in patients over 40 years of age, but not in young women. Regarding the operative treatment, he advised a combination of operative measures. Fixation of the uterus without the plastic operations was useless. Vaginal hysterectomy did not cure the condition. Professor Hellier then described his own surgical procedure in such cases. A flap of mucous membrane is resected from the anterior vaginal wall, the width of the flap depending on the size of the cystocele. The bladder is pushed well up and out of the way. The utero-vesical space is packed with gauze, the peritoneum being not yet opened. Amputation of the hypertrophied cervix is then performed. The gauze is now removed from the utero-vesical pouch, the peritoneum opened, and the fundus uteri brought into the vaginal wound. The appendages are inspected and partial salpingectomy performed. Catgut sutures are then passed through the anterior uterine wall and through the cut vaginal edges at each side. They are then tied. The remainder of the vaginal mucous membrane is closed by a continuous catgut suture. This continuous suture may take up some of the anterior uterine wall. The last step is to perform a colpo-perineorrhaphy. In doing so Professor Hellier recommended building up a good perineal body and stitching the edges of the levator ani muscle together. Continuing, he stated that from 88 to 90 per cent. were cured, in 5 or 6 per cent. the results were not up to expectation, and 5 per cent. showed some degree of failure. In concluding his interesting paper Professor Hellier gave the results obtained by other operators.

Dr. W. L. REID (Glasgow) thanked Professor Hellier for his valuable and interesting address. He reviewed briefly the different operations he had performed for procidentia. In his earlier days he removed the uterus in whole or in part, but soon gave up that operation as the results were so unsatisfactory. Fair success could be obtained by the Alexander-Adams method, but relapses were common, especially in those who were not careful of themselves. In cases of procidentia at the present he always performed anterior colporrhaphy and a colpo-perineorrhaphy by Lawson Tait's method. During these operations he urged that a strictly aseptic technique was essential to obtain a good result. In most cases he thought the plastic operations were sufficient, but in some cases where the uterus tended to come down again he advised a ventrofixation even in view of all that had been said against it.

Dr. D. LLOYD ROBERTS (Manchester) advised anterior, lateral, and posterior colporrhaphies. In performing these operations he always aimed at extreme narrowing of the vagina as he found the canal sometimes after operations tended to become dilated again. He strongly objected to the removal of the uterus in such cases, as there was always a tendency later to prolapse of the small intestines, and also objected to shortening of the round ligaments. The hypertrophied cervix he left alone because after the restoration of the uterus to its normal position the cervix, relieved from irritation and traumatism, diminished quickly. Only in exceptional cases did he perform ventrofixation, as it often caused pain and difficult urination.

Dr. JOHN CAMPBELL (Belfast) divides his patients requiring operative treatment for procidentia into three groups —viz.: (1) Those who are still in the child-bearing period of life; (2) those beyond the child-bearing period, but who are still strong and active; and (3) those who are old and frail and unlikely to stand a major operation. For Group 1 he performs amputation of the cervix where necessary, anterior colporrhaphy and colpo-perineorrhaphy, and round ligament suspension (Gillian's operation). For Group 2 he performs the same vaginal operation as Group 1, together with a ventrofixation, and in Group 3 he performs colporrhaphies so as to tighten the vaginal canal as much as possible.

Dr. ROBERT JARDINE (Glasgow) said he understood Professor Hellier to say that the operation should never be done on a woman who might bear a child. He agreed with this. He condemned fixation of the uterus in a woman who might become pregnant on account of the difficulty which would most probably arise during labour. He had seen six cases of labour after this operation, and in only one was delivery of a living child possible through the natural passages. Cæsarean section or craniotomy was necessary in the others. Sterilisation of a young woman in his opinion was not justifiable, and the operation of ventrofixation for procidentia should only be performed after the menopause.

Dr. A. DONALD (Manchester) said that he had performed anterior and posterior colporrhaphy in at least 500 cases. He had found those measures satisfactory in that he did not find it necessary to open the abdomen either by laparotomy or by the vagina. He thought the operation described by Professor Hellier as suitable for cases of prolapse in women past the menopause was too severe and was not necessary, inasmuch as excellent results in these cases could be obtained by colporrhaphy. The operation of colporrhaphy was safe; it gave no trouble at a subsequent confinement, and even the subsequent confinement did not always destroy the result of the operation. The colporrhaphy, he said, must be done thoroughly and the vagina must be contracted high up.

Dr. W. BLAIR BELL (Liverpool) expressed cordial agreement with Professor Hellier in regard to the prevention of procidentia. He entirely disapproved of any operations such as the Dührssen-Martin-Mackenrodt (or Schauta-Wertheim, as Professor Hellier called it) in sexually functional women who never ought to be sterilised for such a procedure. It was bad surgery, he thought, to operate on cases where ulcers of the vaginal walls were present. He always performed extensive anterior and posterior colporrhaphies and fixed the uterus by a modified Gillian's operation. In some of his cases pregnancy had occurred but no relapses had taken place. Sometimes he performed ventrofixation in cases where the round ligaments were useless.

Professor J. A. C. KYNOCH (Dundee) thought that all mutilative measures should be avoided, as they were dealing with a condition which was a source of discomfort and not of danger. Any operation in a child-bearing woman that involved fixation of the uterus should not be performed, and sterilisation of such women he held was not justifiable. In child-bearing women he performed an extensive anterior colporrhaphy and a colpo-perineorrhaphy, and, if necessary, amputated the cervix. In women after the menopause he performed a ventrofixation and also the vaginal plastic operations. He had performed the operation that Professor Hellier had described, but his experience of it had been too recent to express an opinion on the late results.

Dr. J. M. MUNRO KERR (Glasgow) stated that he was opposed to abdominal fixation of the uterus except in exceptional circumstances. He had only once seen trouble follow at a subsequent parturition, but still he thought the treatment crude. He specially referred to the treatment of fixing the uterus between the bladder and anterior vaginal wall which had been so fully referred to by Professor Hellier. He had performed the operation in chosen cases, but in two of his own cases a serious pelvic inflammation supervened. This inflammation was due, he thought, to the fact that it was extremely difficult to cleanse the field of operation and also to the presence of blood which became infected.

Dr. W. E. FOTHERGILL (Manchester) had noticed that, after treating prolapse by anterior colporrhaphy and perineorrhaphy, those cases in which the uterus remained retroverted after the operation generally recurred, while the prolapse did not return in cases in which the anterior colporrhaphy brought about anteversion. In performing anterior colporrhaphy he removed a very wide portion of mucous membrane. This brought together in front of the cervix the parametric and paravaginal tissues, with the result that the cervix was forced up and back into the hollow of the sacrum.

Dr. G. BALFOUR MARSHALL (Glasgow) said no operation had been devised to cure all cases. An abdominal fixation alone was of no use. In cases of prolapse he always performed anterior and posterior colporrhaphies with the Gillian round ligament operation and ventrofixation of the uterus in women over 40 years of age. He considered a simple colporrhaphy useless to cure a cystocele. He agreed with Dr. Fothergill in that the colporrhaphies must be extensive. In cases associated with hypertrophy of the cervix he was of the opinion that amputation was necessary.

Dr. C. OLDFIELD (Leeds) said that plastic ope-

were sufficient, but an additional support and a more permanent result could be attained by adding vaginal or abdominal fixation. He performed a vaginal fixation in fat women with a large cystocele and a retroflexed uterus, but never before the menopause. In patients who were robust and under 50 years of age he performed a ventrofixation with the vaginal plastic operations. He had injected quinine solution into the base of the broad ligament in one case and found the immediate result good.

Dr. SCOTT CARMICHAEL (Edinburgh) said that a vaginal fixation was, in his opinion, the best operation for the cure of cystocele. Abdominal fixation was unsatisfactory. He had experience of 20 or 30 cases and believed that the operation of vaginal fixation was a good one. He only performed it in women who were over 40 years of age, although he thought there was little risk in future child-bearing. In complete procidentia he stated that hysterectomy after Mayo's method gave good results.

Dr. ARNOLD W. W. LEA (Manchester) said that in women during the child-bearing period posterior colporrhaphy gave good results, but if the uterus were much enlarged a better result was obtained by supplementing a fixation of the uterus. He thought the cervix should be amputated when necessary. In old women he removed the uterus and at the same time performed extensive anterior, lateral and posterior colporrhaphies. In his 28 cases he had had no relapses. Wertheim's vaginal fixation, in his opinion, was not a good operation.

Professor MURDOCH CAMERON (Glasgow), Dr. T. B. GRIMSDALE (Liverpool), and the PRESIDENT also took part in the discussion.

Reviews and Notices of Books.

A Text-book of Gynæcological Surgery. By COMYNS BERKELEY, M.A., M.D., B.C. Cantab., F.R.C.P. Lond., M.R.C.S. Eng., Gynæcologist and Obstetrician to the Middlesex Hospital, Senior Physician to the City of London Lying-in Hospital, Surgeon to In-patients at the Chelsea Hospital for Women, &c.; and VICTOR BONNEY, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng., M.R.C.P. Lond., Assistant Gynæcologist and Assistant Obstetrician to the Middlesex Hospital, Senior Surgeon to Out-patients at the Chelsea Hospital for Women, &c. With 392 figures in the text from drawings by Victor Bonney and 16 coloured plates. London: Cassell and Co., Limited. 1911. Pp. 720. Price 25*s.* net.

IN this work, extending over some 700 pages, the authors record their experience during their various years of service at the Middlesex Hospital and the Chelsea Hospital for Women. The book contains but few references to the operative work of other surgeons, and the opinions expressed are those of the authors alone. The result is a very clear and detailed account of all the common operations of gynæcology. The illustrations from drawings by Mr. Victor Bonney, mainly diagrammatic, are numerous and good, although, in common with all illustrations of operative procedures, they suffer from the fact that the reader must of necessity discount the apparent simplicity with which they depict the most complicated and difficult procedures, a fact which need not in any way detract from their value as diagrams.

The details as to the preparation of the patient and operations in private houses are valuable and good; the position of the operator, however, on the right of the patient when she is in the Trendelenburg position is not nearly so convenient in the experience of many as is that on the left. All the various operative procedures are very fully described, and although there are details with which operators would not unanimously agree, yet with the main part of the authors' teaching we are in entire accord. The important question as to the relative value of sub-total and total abdominal hysterectomy for fibromata of the uterus is fully discussed, and the authors decide in favour of the former operation. There is room for another opinion. It is true that the total operation is perhaps a little more difficult, but the latest statistics show that the results of both operations are practically equally good in the hands of sound operators. The question of the value of an operation must be decided by the results obtained by the best operators, and viewed in this light the danger of the two operations is practically the same. As the authors do not recommend vaginal drainage, they naturally do not approve of drainage through the vagina after total hysterectomy, but their statement that in total hysterectomy more or less septic infection occurs is not borne out by the results obtained by those who practise this method in cases of fibroid tumours of the uterus. That sepsis occurs when total hysterectomy is performed for cancer of the uterus is no doubt a fact, but that it is usual for stitches to be discharged by the vagina after this operation for fibroid tumours of the uterus is not in accord with the experience of many surgeons. If total hysterectomy has been properly performed, and practically none of the vagina removed, as should be the case when operating for benign conditions, the puckering that the authors mention does not occur to any extent, and the scar rarely gives rise to any pain or trouble.

A chapter is devoted to the operation of utriculoplasty, a procedure which probably will not live, and for which many observers see no need. Wertheim's extended operation for cancer of the uterus is very fully and lucidly described, and if there are any surgeons who still require conversion to the necessity for performing this operation in all operable cases of cancer of the cervix uteri, we would recommend to them a perusal of this section. A very clear account of the various steps of the operation is given with good illustrations, and there is a complete discussion of the important question of the removal of the glands as a routine step of the operation. We notice that the authors apparently do not recommend a subcuticular suture for the skin, a method which may give even a better scar than Michels' clamps which they favour.

This is a good book, and because we may expect to see future editions of it we point out places where we think its teaching might be modified. In the section on ligatures the authors unhesitatingly condemn the use of catgut, an opinion to which they will find many opponents; nor do we think that the use of biniodide of mercury for vaginal douching is to be preferred to lysol, which is not mentioned. We are also surprised to find in considering drainage, that drainage through the abdominal wound is preferred to that through the pouch of Douglas, a recommendation which we should hardly have expected. The chapters on after-treatment and the nursing of the patient contain a great deal of information and are very sound. At the end of the book are given the general results, not the authors' only, of the operations carried out at the Middlesex Hospital and the Chelsea Hospital for Women for the period January, 1905, to August, 1910. The whole work forms a manual of much value, which certainly will be of great assistance to the young surgeon, and will be read by the experienced operator with interest.

Convergence in Evolution. By ARTHUR WILLEY, D.Sc., F.R.S. London: John Murray. 1911. Pp. 177. Price 7*s.* 6*d.* net.

Dr. Willey, previously to his recent appointment to the McGill University in Montreal, spent several years in the tropics investigating animal life; and the present volume is the result of some of his studies and leisurely reflections. It is therefore noteworthy that, though the reflections doubtless emanate from an armchair position, they are based upon much first-hand acquaintance with animals in the field. Many persons have written and are writing glibly of the problems associated with, for instance, the colours of animals, who have not actually observed whether the instances which they

give, and which they have evolved out of inner consciousness tempered by museum specimens, fit the environment. This is by no means good enough for Dr. Willey, who is a sympathetic observer as well as a competent weaver of observation and theory into a harmonious narrative. We are acquainted with leaf-like insects, such as the well-known Kallima butterfly; but fewer persons are aware that there is a leaf-like fish known technically as Platax vespertilio. This fish has the habit of floating idly on its side, and the details of its colour and marking, as well as the thinness of body implied by the floating habit, conspire to produce the suggestion of a leaf. But a leaf floating in the sea might, perhaps, not be regarded by all of us as one of the likeliest objects to meet with. Dr. Willey, however, remarks that in the mangrove-fringed oceans of the East such leaves are actually common, and he adds that a bifacial leaf is "one of the commonest objects, dead or alive, ashore or afloat, in nature." It is precisely here that we can see for ourselves how necessary it is for the describer of such facts to have viewed them in their actual and everyday surroundings. Quite other views of the leaf-like fish would commend themselves even more did we not realise that leaves are no rarities where the fish occurs. A considerable chapter deals with this and other allied phenomena known as protective resemblance, mimicry, and so forth. A perusal of this chapter renders it clear that Dr. Willey is, on the whole, in agreement with what are, perhaps, the prevailing theories on these matters.

Dr. Willey, however, is by no means in accord with the recent bold and unconventional views of Dr. Gaskell upon the alleged origin of vertebrated animals from arthropodous creatures, such as scorpions, trilobites, and the like. It is, indeed, with this "earthquake hypothesis"—as Dr. Willey terms Dr. Gaskell's very exciting views—that the present volume really chiefly deals. And hence, indeed, the title. For what Dr. Gaskell and those who agree with him term points of real resemblance are only, according to Dr. Willey, instances of convergence. There is no doubt that convergence does lead of itself to resemblances so close as to deceive even the elect among morphologists. The confusion in the popular mind between snakes and worms is an example to the point. In both limbs have disappeared and a vermiform body has resulted. It is rather by dwelling upon such instances that Dr. Willey attacks Dr. Gaskell than by criticising in detail the arguments of that eminent physiologist. For as Dr. Willey also points out, at least in effect, we have to readjust our canons of criticism before we can satisfactorily grapple with Dr. Gaskell's comparison of the thyroid gland of the larval lamprey with the uterus of the scorpion.

In order to render this line of criticism more effective, Dr. Willey has collected together a number of very striking cases of convergence, of which there can be but little doubt that they are true cases of convergence. These are largely and naturally highly technical, and appeal rather to the experienced anatomist than to the general reader. Thus, the remarkable discovery by Dr. Alcock of the formation of milk for the nourishment of their young in certain shark-like fishes is treated of. As was known to Aristotle, certain members of the shark tribe bring forth their young alive instead of following the prevalent and nearly universal habit among fishes of laying eggs. But it used to be pointed out that the analogy with the mammalia was very small, since there was no formation of any organ to act as intermediary between the mother and the fœtus. Dr. Alcock, however, has found that in the Sting Ray and some others the oviduct of the ray produces bundles of projecting villi which penetrate in masses the gill clefts of the young, and pour into the œsophagus an abundant secretion of a milk-like fluid which serves the developing fœtus for nutriment.

The analogy between such facts and the formation of "pigeon's milk" has not escaped Dr. Willey, who recapitulates the observations of the illustrious John Hunter upon a milky fluid formed in the crop of pigeons in the breeding season. All these very various examples of convergence and parallelism so largely drawn upon by Dr. Willey not only have resulted in a very entertaining book, but prove to us how careful the naturalist must be in deducing family relationship from even the most apparently obvious points of resemblance.

Biblisch-talmudische Medizin. Beiträge zur Geschichte der Heilkunde und der Kultur überhaupt. Von Dr. JULIUS PREUSS, Arzt in Berlin. Berlin: S. Karger. 1911. Pp. 753. Price, paper, 20 marks; bound, 22 marks.

THE Talmud is essentially a law book and embodies the fundamental code of the Jewish civil and canonical law. It is composed of the Mishna, which contains the text, and the Gemara, which is a complement to it and a commentary on it. There are two Talmuds—the Babylonian and the Jerusalem. The Mishna and the Babylonian Gemara together are called the Talmud, and the date of its origin is from the second to the sixth century B.C. There exist no purely medical writings from the older Jewish times—not even any on natural history—comparable to those of Pliny. The oldest Jewish recorded literature begins with the Pentateuch or Thora, and this and the Talmud alike are books of the law; medical affairs therefore occur only incidentally in so far as they relate to the codex of the laws—ritual, civil, and canonical. There is consequently no medicine of the Talmud in the sense in which we speak of Egyptian, Hellenic, or Roman medicine. The Talmud, however, contains copious references to the popular medical conceptions of its period, "folk-medicine," but there is no systematic arrangement of the subjects mentioned, and such views as are set forth bear a strong impress of Hellenic medicine. The author gives an account of the following subjects so far as they occur in the Bible and Talmud:—The Physician and other Members of the Healing Profession; Parts of the Human Body, including their Anatomy, Physiology, General Pathology, and Therapeutics; Injuries, comprising Surgery; Diseases of the Eye, Teeth, Skin, Ear, and Nose; Nervous Diseases and Madness; Gynæcology and Midwifery, Materia Medica, Forensic Medicine, Hygiene, and Dietetics. The author has grouped and classified the scattered and copious references under the above headings. Finally, there is a bibliography containing the chief writings on medical matters in the Bible and Talmud.

This work—which must surely have been a labour of love—we might almost say a "kolossal" work—is the first ever published by a physician on Biblical and Talmudic medicine, and it has been compiled direct by the author from the original sources. It appears that Wunderbar, a layman, finished his work on the same subject in 1860. The only other works on pure Talmudic medicine are the collection of excerpts of Rabbinowicz (Paris, 1880) and the writings of Bergel (Leipzig, 1885). All the more, therefore, are we indebted to the author for his brilliantly written, clearly expressed, compendious work. To anyone interested in the history of medicine it will prove indispensable. The author has compared Jewish medicine with the healing art as it flourished in Greece, Rome, and Alexandria, and he has given particularly full notes of the references to the authorities cited. He, moreover, chooses to put a very modest judgment on what must have been a laborious yet fruitful series of literary researches, published, as he says, on the twenty-fifth anniversary of his "promotion" to the degree in medicine. He characterises himself in the words of a compatriot, Rabina, "Ich bin nur ein Sammler und Ordner" ("I am only a collector and methodiser").

The general introduction on the Physician and his Associates, or attendants, is most readable and singularly interesting. To the practice of the art of surgery the Jewish physician was a stranger. Unlike the Roman and Grecian surgeon, his Jewish *confrère* never had to deal with the injuries resulting from the application of judicial torture, nor had he much to do either with gynæcology or midwifery—two departments practically left to women. Women were usually examined by women, and the physician was only called in in exceptional cases or when artificial help was urgently needed in labour. Military surgeons do not appear to have existed in early Jewish times, nor have we any information as to the course of study involved, though it is plain that many of the Prophets had some medical skill—e.g., Elisha—while Abraham was commanded to circumcise his own son. The physician was an instrument as it were in the hand of God. Still, like every other human being, he had his own free will, and laws were propounded as to the responsibility of the physician, and in cases of proved neglect of duty he was held responsible. The physician was an educated man, while those who let blood—called ummân—were regarded as workmen and stood far below the former in the social scale, and to be called "Schröpfer" or "Schröpferin"—i.e., a "cupper"—was a term of insult. There is an interesting account of circumcision, an operation which Zippora, the wife of Moses, performed on her own son. The names of two midwives have come down to us from the period of the Egyptian slavery, Schiphrah and Pu'ah, who were commanded to kill all the firstborn of the Israelities. According to the Talmud, these were Jochebed, the mother of Moses, and Miriam, her daughter.

Interesting comments are made on the different parts of the human body. Take the hand, for instance. When a child comes into the world its hands are closed, as if it held the whole world as its possession; when man makes his exit the hand is open, to show that he possesses nothing which he can take with him. The hand was raised in taking an oath, and the practice we are told is derived from God himself. Interesting information is given regarding the growth of the nails and the practice of allowing them to grow uncut under certain conditions—e.g., in sorrow. Nebuchadnezzar not only "did eat grass as oxen, but his nails were grown like birds' claws," as described by Daniel. The number of bones in the body is given as 248. Such knowledge of anatomy as they had was chiefly obtained from the slaughter-house and the sacrifices. There is a picturesque account of the eye made well worthy of reading by sprightly comments and useful references. The secretion of the nose was regarded as injurious, and there is much that is interesting regarding sneezing. Has not Sir Jonathan Hutchinson recorded that he never saw a patient who was severely ill sneeze?

Every single organ of the body is fully, lucidly, and piquantly dealt with. There is a long account of castration, circumcision, and allied subjects, of stone in the bladder and other diseases, including the various "pests" and plagues. As only animals that were without spot or blemish could be used as an offering, the most minute instructions are given in this regard. A lamb with a double ear would be eligible under certain conditions (p. 333) for sacrifice, but congenital or acquired deformities disqualified for the priesthood. An interesting account is given of the practice of putting rings in the ears, and of the significance of this act. There is a full account of epilepsy, and other common nervous conditions were recognised, and the interesting comment is made that only five cases of suicide are recorded in the Bible.

The chapters dealing with dietetics, hygiene, and the prevention of disease are very elaborate, and many trite and useful maxims applicable to-day might be culled from them. The basis of the whole system is that the care of the body is a religious duty. Any sudden change of diet or excess is hurtful. The clearest descriptions as to what is "terepha"—meat from animals that have suffered injuries—and what is "Kash er" or "Kosher" are laid down. Much stress is laid on personal cleanliness and disinfection, such as washing of the hands before and after eating or after micturition or defæcation, and the use of the bath for menstruating or lying-in women is described. The curious belief that the cessation of the menses in pregnancy was due to the fact that the blood is changed into milk is noted—we believe this rather natural idea had a wide vogue. Suckling the offspring is regarded as a duty on the part of the mother, and it was often continued for nearly two years. A wet-nurse was substituted only very exceptionally.

There is not a dull page in the book, and we have the greatest pleasure in strongly commending the perusal of this unique, compendious, and most instructive treatise on "Biblical-Talmudic Medicine," which more than justifies its subtitle as a "Contribution to the History of the Healing Art and to Culture in General."

Das Radium in der Biologie und Medizin. By Dr. E. S. LONDON, Director of the Royal Institute of Experimental Medicine, St. Petersburg. Leipsic: Akademische Verlagsgesellschaft. 1911. Pp. 199. Price 6 marks.

THIS treatise, by the well-known Russian authority on the therapeutic and biological action of radium, contains details of his experimental work as well as a *résumé* of the various articles that have appeared in the medical and scientific press since the discovery of radium some 14 years ago.

The author discusses the mechanism of radium irradiation on the living tissues, and especially Schwartz's theory of its destructive action on lecithin, and Löwenthal's hypothesis of the action of the emanations as consisting of the activating of organic ferments. Chapters follow on the action of radium on bacteria, on ferments, toxins and antitoxins, on plants and the lower animals. Of even more interest is the description of experiments showing the influence of radium on development, and the production of teratological changes in the embryo. The various organs of the body may be arranged in series according to their sensitiveness to radium irradiation. First the nerve cells; then the lymphoid tissue, the generative glands, the liver, and the spleen; then follow in order the kidneys, the suprarenal capsules, muscle, cartilage, and blood-vessels; and last of all, the parotid, the pancreas, and the mucous membranes. Quite infinitesimal doses of radium bombardment produce a definite physiological action on the skin. London himself found that a closed capsule containing 18 mg. of radium produced a permanent reddish-brown patch of discolouration on the skin after an exposure of only 15 seconds. He calculates that the weight of the radium B. corpuscles producing this definite physiological effect was less than 0·000,000,000,0005 gramme. The author quotes a number of authorities who testify to the analgesic action of radium in neuralgia, epithelioma, iridocyclitis, gout, and even tabes.

The historical chapter on radium-therapy begins with an account of Strebel's treatment of lupus in 1900. This is followed by accounts of the work of Goldberg and London of St. Petersburg, Exner of Vienna, and Macintyre in this country; and is completed by reference to the recent work of Dornensci, Wickham, and others. There are a number of illustrations of microscopic preparations showing the effect of radium irradiation on the various tissues. The work is completed by a table of the literature of the subject, which includes a list of 250 papers, of which seven are contributions from the author.

In conclusion, Dr. London expresses his matured opinion

that radium has already won for itself an assured place in the treatment of superficial diseases of the skin and mucous membrane, and he hopes that the radium emanation will attain an equally definite place in the treatment of acute and chronic diseases of the internal organs.

Cholera and its Treatment. By LEONARD ROGERS, M.D. Lond., F R C.P. Lond., F.R.C S. Eng., B.S. Lond., Major I M.S., Physician, Cholera Wards, Medical College Hospital, Calcutta; Professor of Pathology, Medical College, Calcutta; Fellow of the Calcutta University. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 236. Price 10*s.* 6*d.* net.

OF the many works on the subject of cholera the one under review by Professor Leonard Rogers of the Indian Medical Service is surely one that will well repay the earnest study of practitioners in the East. The author at the commencement cites a quotation from another Indian authority on the disease—C. Macnamara—to the effect that it would seem as if the profession in India had almost abandoned itself to despair in the matter of treatment of cholera. This, although true at the time these words were written, cannot be said at the present time; and our author can lay especial claim to having devised what is probably the most successful method up to the present time of treating this fell disease.

In the first chapter we find an account of the history of cholera epidemics and the lessons learnt from them. This is illustrated by some excellent maps. The author, in the preparation of this chapter, acknowledges his indebtedness to Macnamara's classical work on the History of Cholera. The various views of the authorities of the time are quoted, showing what differences of opinion have existed as to its etiology. The author, in relating with reference to Koch's discovery how the English Government sent an eminent bacteriologist to India to investigate Koch's conclusions, states rightly that he reported at that time against Koch's views, but we do not find any mention of the fact that this authority, in the last editions of his work on "Micro-organisms and Disease," distinctly states therein that the organism of Koch *is* the cause of the affection. Professor Rogers next deals with the epidemiology of cholera, its seasonal incidence, and its relationship to meteorological conditions; also with the seasonal incidence in the different Provinces of India. We then come to the important subject of its etiology and prophylaxis. This chapter is very complete, embracing, as it does, the whole subject of the discovery of Koch's organism.

Dr. D. Cunningham's researches are detailed; then Pfeiffer's test, the great discovery of the phenomenon of agglutination by that pathologist, gives by far the most reliable method of recognising the specific organism of Asiatic cholera. Next we come to the matter of the recognition and isolation of the comma bacillus in cholera stools, followed by a description of its morphology and cultural peculiarities; the indol and hæmolytic reactions, the resisting power of the bacillus, the duration of the specific bacillus in the stools after attacks of cholera, the subject of cholera carriers, the degeneration of cholera bacilli in artificial and natural conditions, and, lastly, the toxins and antitoxins produced, all receive their due meed of description. The author then enters on the important subject of prophylactic inoculation against cholera. Concerning this, the evidence in its favour is certainly not to be gainsaid, but, strange to say, it appears that, owing to the severity of the reaction after the dose of Haffkine's vaccine which is required to produce lasting immunity, there is now a nearly complete abandonment of his method in India without anything better having been substituted for it. Considering the evidence of the statistics produced by Haffkine, Powell of Assam, and others, the abandonment is incomprehensible. We now come to the mode of infection of cholera. The facts showing how it is spread through food and water, flies, and soiled clothes are laid stress on; the good effects of the disinfection of wells by permanganate of potash are shown, and then we come to the predisposing causes, such as chills, fasting, visiting endemic areas, race, sex, and age incidence. The author evidently does not agree with the evacuant treatment of the disease advocated by the late Sir George Johnson; the writer of this review, however, during his career in India employed practically no other, and without prejudice he concluded that his rate of mortality compared very favourably with those following the treatment by opium. It is also somewhat surprising to find Macnamara advocating the latter treatment, although he himself narrates how during an attack of the disease that he went through in Calcutta he took castor oil himself with eminently satisfactory results. The chapter detailing the clinical description could not be improved upon—it is excellent; the remarks on diagnosis and prognosis are likewise extremely helpful.

Succeeding the clinical description comes the account of the post-mortem appearances. Here the description of the changes in the heart might have been given more fully. Johnson well pointed out how, in the stage of collapse, these differ remarkably from those found in the stage of reaction, the appearances found bearing striking evidence to the truth of his theory of choleraic collapse. The state of the blood is well described. The last chapter is devoted to the subject of treatment. The methods advocated by Annesley, Corbyn, Twining, Johnson, Morehead, Macpherson, Goodeve, Macnamara, Wall, and Kenneth Macleod are narrated; and then we come to the most valuable detail in the work—to wit, the author's system of treatment. The main principles of this are the administration in the stage of collapse of a hypertonic saline intravenous injection of sufficient amount to raise the blood pressure to normal; and secondly, the free administration by the mouth of oxidising agents to destroy the toxins in the gastro-intestinal tract. Rogers never gives opium, we are glad to see, when once the rice-water stools have appeared. The success of this treatment is well shown by the latest statistics published, in which he had the low percentage mortality of 23·3.

Professor Leonard Rogers has made all medical officers serving in the East his debtors by this admirable work.

Atlas der Kristallformen und der Absorptionsbänder der Hämochromogene. Eine für Physiologen, Pharmäkologen, und Medizinalbeamte bestimmte Studie. Von WALTER J. DILLING, M.B., Ch.B. Aberd., Ersten Assistent des Institutes für Pharmäkologie der Universität Rostock. Mit einem Vorwort von Professor KOBERT. With 34 plates. Stuttgart: F. Enke, and obtainable from F. Bauermeister, Glasgow. German text, pp. 71; English text, pp. 65. Price 29*s.*

IT seems that the germ of this beautiful and useful monograph must be sought for in the class-room of Hoppe-Seyler more than 30 years ago, when that distinguished physiological chemist remarked to Professor Kobert (to whom the work is fitly dedicated) that "hæmochromogen was for the majority of the medical faculty the least known derivative of the blood pigment, but that it would, nevertheless, gain more and more importance both in theory and practice." And so it has proved. A purely pharmacological study of coniine and its related alkaloids led to researches on crystalline forms, absorption bands, and the mode of formation of a whole series of substances which all belong to the hæmochromogen group. After a short historical introduction on blood pigment and its derivatives the author figures the

spectroscopical characters of hæmochromogen and its crystalline preparations obtainable from blood by the action of pyridine, piperidine, and their derivatives, from hæmatin, and from hæmols by various other reagents. The net result of a very elaborate and painstaking research is that the crystals that are produced from blood and hæmatin by the use of the various pyridine and piperidine bases are crystals of true hæmochromogens. The plates are excellently got up and will prove most valuable, not only to pharmacologists and physiological chemists, but also to teachers of forensic medicine. The cost of the work was defrayed by the Carnegie Trust, and we congratulate both Professor Kobert and the author on the successful investigation of a subject with such wide practical and theoretical connexions, both in chemistry and in medicine. The text is printed both in German and English, while Professor Kobert contributes a short preface.

Lehrbuch der Augenheilkunde in der Form klinischer Besprechungen (*Text-book of Diseases of the Eye in the form of Clinical Lectures*). By Dr. PAUL RÖMER, Professor of Ophthalmology and Director of the University Eye Clinic at Greifswald. With 186 illustrations in the text and 13 coloured plates. Berlin and Vienna: Urban and Schwarzenberg. 1910. Pp. 1028. Price, paper, 20 marks; bound, 22 marks.

IT has been said of a certain learned professor that his lectures to students consisted of excerpts read from the proof sheets of the proximate edition of his text-book. Professor Römer has inverted the process and published a text-book which consists of verbatim reports of his lectures. Neither method of economising labour is to be commended. Systematic lectures have usually in the past been so tiresome, arid, and futile—with, of course, some notable exceptions—that they have deservedly fallen into disrepute; but surely they must have reached their nadir when they were culled from even the most excellent text-book. Scientific lectures, on the other hand, if they fulfil their object, are so often laden with verbiage, so full of repetition and emphasis, and so devoid of the elements of literary style, that if they are allowed to retain their pristine form of delivery they must of necessity fail to conform to the canons of a good text-book. Professor Römer's book shows signs of careful revision and reconstruction of the actual lectures, so that an orderly exposition of the subject is presented to the reader, but in spite of these attentions it still remains a hybrid product, failing to exhibit the excellence which doubtless characterised the lectures when they were delivered, and still more completely failing to reach the standard which should be aimed at in a students' text-book.

The style of such a book as that under consideration is peculiarly irritating. It is full of redundancies similar to that of the opening sentence—"Gentlemen, we must commence the term's work with the study of diseases of the conjunctiva and cornea." Typical cases are described in the language in which they were demonstrated to the class, and "meine Herren" are instructed to observe the peculiarities which are hidden from the ken of the less fortunate reader. Anon the author ceases to be a lecturer and lapses into text-book style, much to the relief of the reader. There is really a splendid text-book contained in the work, but it is difficult to see the wood on account of the trees. Yet if the student has patience to plod through this forest of a thousand closely printed pages of German we cannot but feel that he will be sufficiently rewarded. Doubtless most of the information could be gathered by less arduous means, but there are some topics that nowhere else have we seen treated so well and so authoritatively. Dr. Römer has acquired a wide reputation for his work on immunity and has proved himself a worthy and indefatigable pupil and disciple of Ehrlich. We strongly recommend those who have not the time or energy to read the whole book to peruse the chapters on conjunctivitis, hypopyon ulcer of the cornea, and sympathetic ophthalmia. There are few ophthalmologists who will not thereby obtain useful information not so readily acquired otherwise.

In our opinion the work will prove most useful to teachers of ophthalmology, but only advanced students of the subject can be recommended to add it to their libraries. There are no ophthalmoscopic plates.

LIBRARY TABLE.

Medical Homes for Private Patients, 1911. A Classified Directory, with Lists of Medical Consultants. Edited by RICHARD BINNIE. Alphabetically arranged. London: The Scientific Press, Limited. 1911. Pp. 150. Price 6*d.* net.—This paper-covered booklet will undoubtedly prove of service to the practitioner in enabling him at once to find out what private homes, sanatoriums, or health resorts are available for any particular case. There is, first, an alphabetical index to the different counties, under which the various institutions appear grouped according to their purposes. Next follow lists, alphabetically arranged under the names of the towns in which they are situated, of medical, surgical, and nursing homes; children's, convalescent, and accouchement homes; homes for chronic and incurable cases, for drug abuse, inebriety, nervous and mental diseases, for Weir-Mitchell and rest-cure treatment, electrotherapy, massage, or Nauheim treatment, consumption sanatoriums, institutions for supplying trained nurses to the public, and health resorts. There are also lists of medical men, arranged alphabetically and followed by their private addresses and the names of the hospitals to which they are respectively attached, the utility of which is very doubtful. For the public such lists may be misleading, for the medical profession they are unnecessary. The book concludes with a list of the principal European health resorts.

The Refraction of the Eye, a Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S. Eng. Fifteenth edition. London: J. and A. Churchill. 1911. Pp. 275. Price 5*s.* net.—A book which has reached its fifteenth edition since publication in 1884 needs little reviewing. So great success is given to few authors in this branch of literature. Among the many monographs on refraction Hartridge's is *facile princeps* as an introductory exposition of the subject. The student's path is made smooth and pleasant, and the hills are skilfully engineered so that none of the gradients are steep. Not a single algebraical formula puts in an appearance to cause the most timid wayfarer a moment's apprehension. And so the goal is reached in Chapter XII. on Spectacles. There are things which might be omitted—for instance, that hardy annual the strabismometer.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the cooperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., E. A. MINCHIN, M.A., F.R.S., and GILBERT C. BOURNE, M.A., F.R.S. June, 1911. London: J. and A. Churchill. Price 10*s.* net.—This issue contains only three memoirs: (1) Cortical Cell Lamination of the Hemispheres of Papio Hamadryas, by E. H. J. Schuster, M.A., D.Sc.; (2) On Some Stages in the Life History of Leptomonas Muscæ Domesticæ, with Some Remarks on the Relationships of the Flagellate Parasites of Insects, by J. S. Dunkerly; and (3) On Merlia Normani, a Sponge with a Siliceous and Calcareous Skeleton, by R. Kirkpatrick. In

the first paper Schuster points out the practical importance to the surgeon of the localisation of function in the cerebral cortex, while its theoretical interest is great to the physiologist and the psychologist. The problem has been approached in different ways by the physiologist, the surgeon, and the pathologist, while the contribution called for from the anatomist and the histologist is the mapping out of the cortex into areas differing from one another in structure. The author points out that a better appreciation of a physiological and anatomical problem may be obtained by extending it into the realms of comparative pathology and anatomy, and with this end describes a special aspect of the histology of the cortex in an animal not hitherto treated in this way—viz., the papio hamadryas. The method used was Unna's polychrome variant of Nissl's methylene blue method. A detailed description of the results attained, illustrated by numerous diagrammatic plates, is given. Dunkerly has examined various kinds of house flies taken from different districts with a view to settling the nature of the flagellate parasites found in them. He reviews the previous researches of others, and concludes that Leger's original pear-shaped Crithidia is only a stage of the Leptomonas life history, and that the Crithidia of later authors—Patton and Woodcock—found in blood-sucking flies or in cultures are in some cases developmental stages of a trypanosoma. The evidence of the forms found by him in the house-fly Homalomyia canicularis shows, he contends, that Rosenbusch's Crithidia muscæ domesticæ, and therefore probably trypanosoma drosophilæ of Chatton and Alilaire, are merely forms assumed by a leptomonas.

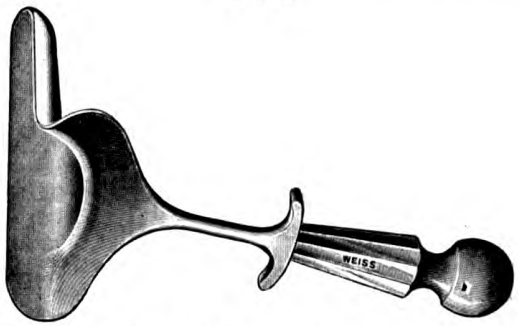
L'Hygiène.—The June number of this journal contains many interesting articles, among which may be mentioned L'Hygiène et la Vie, by M. le Dr. Maurice de Fleury; La Toxicité des Aliments, by M. le Dr. G. Linossier; La Vie Pratique et Familiale, by Madame Augusta Moll-Weiss; an interesting instalment of a series entitled "L'Art de Voyager en Italie (III.)," which deals with Palermo and is written by M. André Maurel, and the usual gastronomic articles which have become a feature of this enterprising magazine. Among the profuse and admirable illustrations we may call attention to a reproduction of a beautiful picture by Bouguereau entitled "Le Jeune Frère," depicting a young sister nursing her baby brother, both figures having this artist's inimitable grace and softness; and a powerful reproduction of the portrait of Giuliano da San Gallo, painted by Piero di Cosimo, and hanging in the Hague Gallery. *L'Hygiène* is published by Messrs. Goupil and Cie., 24, Boulevard des Capucines, in Paris, and also at 25, Bedford-street, Strand, W.C.

New Inventions.

APPARATUS FOR OPERATIONS ON THE UTERUS.

MOST practitioners have been in the position of having to operate upon a uterus per vaginam for a curettage, and have usually had to have an assistant. The following instrument has been devised to obviate this. It consists of the duckbill of a Sims's speculum, to which have been attached at right angles two flanges to press back the labia, and also to cover the anus in case of contamination (Fig. 1). This is constructed with a solid steel handle, the whole being made in one piece. The speculum will keep in its place by its own weight, the duckbill being inserted beneath the cervix uteri, thus removing the necessity of an assistant. A second instrument (Fig. 2) has also been devised for catching the cervix and holding it without tearing through, as often happens with the present type of vulsellum. It consists of two slightly curved blades broadened out to $1\frac{1}{10}$ cm. wide, the upper blade having seven teeth and the lower blade six teeth. I have now used this instrument for over two years, and never found it tear through. The last thing necessary for an operation in a private house is a proper douching sheet, and I have devised a very useful and handy arrangement

FIG. 1.



which consists of a rubber sheet, the top end of which is placed underneath the patient, the edges of the two sides being fastened together. The funnel thus formed is distended at the larger end by a piece of cane. It is easily cleaned and

FIG. 2.

extremely portable. The whole of these have been made for me by Messrs. John Weiss and Son, of 287, Oxford-street, London, W.

JEHAN M. BARLET, M.D. Brux., L.R.C.P. Lond.,
Shaftesbury-avenue, W. M.R.C.S. Eng.

A QUINSY LANCET.

THE minor operation most frequently performed by the general practitioner is, perhaps, the opening of a peritonsillar abscess, and the most common mistake is to open the abscess too high up for good drainage. I believe this is due to the use of a scalpel with too short a handle. The knife I have devised has a handle six and a half inches long, and terminates in a slightly curved and sharp-pointed blade, half an inch long, provided at its base with a broad flange. With this instrument any part of the peritonsillar region can be easily reached. The size and shape of the blade, with its flange, make it practically impossible to wound any important vessel, whilst its slight curve is sufficient to prevent its slipping before the incision is completed. In using the lancet the usual incision is made at the level of the last molar tooth, and if necessary a pair of peritonsillar forceps introduced and the wound stretched.

Messrs. C. J. Hewlett and Son, Limited, of Charlotte-street, London, E.C., have made the lancet to my design and have finished it in a most satisfactory manner.

A. CAMPBELL STARK, M.B., B.S. Lond.
Wanstead Park-avenue, E.

PRESENTATION TO A MEDICAL PRACTITIONER.—On June 29th the twenty-fifth year of Dr. D. S. Davies's tenure of the medical officership of health for Bristol was completed, and the members of his staff joined to celebrate this anniversary in a social evening, at which a silver coffee service, suitably inscribed, was presented to him. Speeches were made by Mr. J. W. Kirby, chief inspector of nuisances for the city, and Mr. S. O. Dimond, chief inspector of nuisances for the port, to which Dr. Davies replied briefly.

THE LANCET.

LONDON: SATURDAY, JULY 15, 1911.

The Royal Commission on Human and Bovine Tuberculosis.

THE final report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis, which has just been issued, is a document of great scientific interest and of extreme practical importance. It will be remembered that the Commission was appointed in 1901, shortly after KOCH'S dramatic and startling statements at the British Congress on Tuberculosis held in London during that year, to the effect that bovine and human tuberculosis were distinct from one another, and that the bovine disease was not a real source of danger to man. The members of the Commission as originally appointed were the late Sir MICHAEL FOSTER (chairman), Professor G. SIMS WOODHEAD, Dr. SIDNEY H. C. MARTIN, Sir JOHN MCFADYEAN, and the late Sir RUBERT BOYCE, with Dr. E. J. STEEGMANN as secretary. Sir W. H. POWER, K.C.B., was appointed chairman after the death of Sir MICHAEL FOSTER, which occurred directly after the completion of the second interim report, while, by a melancholy coincidence, Sir RUBERT BOYCE died during the publication of the present report, his adherence to the findings having been given. The final report is, therefore, like the interim issues, a unanimous document, which is a matter of great congratulation. The original terms of reference to the Commission were, we may remind ourselves, "to inquire and report with regard to tuberculosis: (1) whether the disease in animals and man is one and the same; (2) whether animals and man can be reciprocally infected with it; (3) under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favourable or unfavourable to such transmission." The Commissioners have very wisely interpreted these instructions in a broad sense, and, while keeping the terms of reference always in view, have investigated many of the difficult and obscure problems in regard to human and animal tuberculosis. From time to time they have issued interim reports, to which we have alluded, and these have been summarised in our columns. The first, in 1904,[1] giving the results of the preliminary investigations, demonstrated that the bacilli found in the lesions of certain cases of human tuberculosis produced in cattle a disease indistinguishable from bovine tuberculosis. The second interim report appeared in 1907,[2] and dealt with many of the aspects of both forms of tuberculosis, and with the cultural characters and pathogenicity for various animals of bacilli of the human and bovine types. The third interim report, which was published in 1909,[3] was devoted to a consideration of certain conditions of the tuberculous cow which rendered her milk infective. To the second and third reports a number of appendices were attached, giving details of the experimental researches upon which the views expressed were based.

The final report summarises the results of the work of the Commission since its start, gives the conclusions arrived at in regard to the special references made to the Commission, and describes the special investigations carried out in connexion with tuberculosis in swine, horses, other mammals, and birds. The appendix to this report is to appear in seven volumes. Space will not permit us to do more now than refer briefly in a general notice to the main conclusions of the Commission—viz., the replies given to the three questions referred to them—but we propose in subsequent issues of THE LANCET to summarise some of the important results of the special work of the Commission, whose labours we regard as of paramount importance to the national health. In regard to the question whether tuberculosis in animals and man is one and the same, the conclusions arrived at are that the human and bovine types of bacilli are morphologically indistinguishable, but that they differ appreciably in their cultural characters and in their pathogenic effects in various animals. The difference in cultural characters is that the human type shows a greater luxuriance of growth on all the ordinary media employed than the bovine, although the bacilli belonging to this latter type vary considerably among themselves in respect of their luxuriance of growth. The pathogenic differences are, in brief, that the bovine type of bacillus produces a fatal tuberculosis in cattle, rabbits, chimpanzees, monkeys, goats, and pigs; while the human type of bacillus produces a fatal tuberculosis in guinea-pigs, chimpanzees, and monkeys, but causes only slight and non-progressive lesions in cattle, goats, and pigs. Attempts to transmute the one type into the other for the most part failed entirely, both remaining remarkably stable under experimental conditions. At the same time the possibility of transmutation under natural conditions cannot be denied, since both types of bacillus have been obtained in certain instances from a patient. Some remarkable variations from the typical pathogenicity for animals were observed in regard to some of the bacilli isolated from lupus and from equine tuberculosis, which showed the cultural characteristics of the bovine type with a virulence for the calf and rabbit no greater than that usually shown by the human type. There are reasons for discarding the possible explanation that these bacilli constitute a separate type, and they must therefore be considered as modified examples of either the bovine or human type. Such a modification of pathogenic activity obviously renders it impossible to rely upon the relative virulence for the calf and rabbit as a criterion of the non-identity of the two types. The slight cultural differences are considered by the Commission as insufficient to establish the two types as distinct organisms, and it prefers to regard them as varieties of the same bacillus and to consider that the lesions which they produce, whether in man or other animals, are manifestations of the same disease. The Commission admits, however, that there is room for difference of

[1] THE LANCET, June 4th, 1904.
[2] THE LANCET, Feb. 9th, 1907.
[3] THE LANCET, Feb. 13th, 1909.

opinion in regard to the point, but it is insistent in emphasising the fact that in a considerable proportion of cases of tuberculous disease in man the lesions are caused by bacilli in every respect indistinguishable from the bovine type. The reply to the second term of the reference to the Commission—viz., whether animals and man can be reciprocally infected with tuberculosis—is very definitely and unequivocally in the affirmative. Bovine animals are not completely immune to the human type of bacillus, although they possess a high degree of resistance to it. On the other hand, as has just been mentioned in connexion with the first reference, the bovine bacillus has been found in cases of tuberculosis in man, even the pulmonary form of the disease being sometimes caused by this type of organism. It is of interest to notice that the majority of human cases from which bovine bacilli were recovered were instances of tuberculous disease in childhood. The third term of the reference—viz., to determine under what conditions, if at all, the transmission of tuberculosis from animals to man takes place, and what circumstances are favourable or unfavourable to such transmission—is a very wide one, and although the subject has been studied with great care by the Commission they have obviously been able to investigate only certain aspects of it. They find that, whatever may be the animal source of tuberculosis in adolescents and in adult man, there can be no doubt that a considerable proportion of tuberculosis affecting children is of bovine origin, more particularly those forms involving primarily the abdominal organs and the cervical glands, and further they maintain that there can be no doubt that both of these conditions are commonly due to ingestion of tuberculous infective material. Even in adolescents and adults so large a proportion of the cases investigated, i.e., 5 out of 55, showed the presence of bacilli of the bovine type as to indicate the same sources of infection as are possible at other periods of life than childhood. The importance consequently of strict administrative measures to deal with the prevention of the danger from infected milk and meat is urged by the Commission, whose attitude serves to illustrate the important practical bearings of the work.

We have nothing but admiration for the manner in which the Commission has discharged its duties. The interim reports and their appendices have already attained an important authoritative position in the literature of the subject, and the final report will be of immense value, both because of its clear and unanimous conclusions, and of the mass of original work on which they are based. The one source of regret in connexion with this final report is that the Commission is not to be organised into a permanent bureau. It must be obvious to all that the pathological and public health problems connected with tuberculosis are by no means settled as a whole; there yet remain many aspects even of the actual matters investigated by the Commission upon which further work, extending over a series of years, is desirable. At the present time, when public and Parliamentary interest is actively aroused in connexion with the treatment of tuberculous disease, and when it is proposed to devote large sums of money to this object, it seems to us peculiarly inopportune to dissolve this Commission, with its highly trained workers, its accumulated store of material, and its intimate grasp of the problems involved. Other Tuberculosis Commissions have been appointed and dissolved, with the result that each fresh one has to start again, not where the previous one left off, but with a great deal of needless preliminary work to perform. We feel confident that if the present Commission is dissolved another will ultimately have to be appointed, and we would urge upon those with whom the decision lies that to devote a sum to maintain the mechanism of the present Commission would in the long run be an economy, for it would certainly yield further important scientific and practical information out of all proportion in mere money value to the outlay involved.

Sun-stroke.

THE unusually prolonged heat-wave of great intensity that has recently afflicted North America, and which is at present threatening us, renders it not amiss to consider briefly the various theories advanced in explanation of the deleterious action of the sun's rays on man as well as the methods of their prevention. The sun may excite the forms of injurious effect known respectively as heat-collapse and heat-stroke. Heat-collapse is not usually a severe condition. The patient suddenly turns giddy and falls; his skin is moist and cool; his breathing hurried but never stertorous; his pulse small and soft; his pupils dilated; his temperature remains at, or falls below, the normal; whilst there is no complete loss of consciousness as a rule. Recovery generally ensues when the patient is taken into the shade, his clothes are loosened, cold water is dashed on his head, and ammonia held to his nostrils. Far different, however, is it with heat-stroke. This may be either direct or indirect. In *direct* heat-stroke, or sun-stroke, the attack may occur in more than one form. In one form the persons affected are mostly more or less untrained to severe exertion, as, for instance, young soldiers newly arrived in a hot country and unaccustomed to the fatigues of marching, and it is especially likely to affect them when the air is moist, so that the skin action becomes diminished. Violent headache is first complained of; the march, however, is still continued, until the patient at length falls down in convulsions, with teeth firmly clenched, insensibility absolute, dyspnœa, small and weak pulse, and often incontinence of urine. In a second form the subject, streaming with sweat, becomes progressively paler, with cyanosed lips, injected eyes, swollen veins, respiration shallow and quiet, until he slips to the ground. Consciousness is not, as a rule, entirely lost, and revival occurs if the patient be relieved of all impediments to free respiration. In yet a third form the subject becomes extremely thirsty, without any feeling of fatigue, and suddenly falls down comatose. The state of coma may last from 24 to 36 hours and may end in death without any recovery of consciousness. Lastly, in a fourth variety, the soldier, after a hot and wearying march in the sun, is seized with a racking headache, which hourly becomes more and more intense, so that within 24 hours he may be rolling about in agony from the terrific pain in the head. Soon great intolerance of light sets in and then unconsciousness.

Should the patient not die, the intense pain in the head on return to consciousness may last for six or eight weeks unrelieved by any drug, though showing slight evening remissions. It then gradually abates. In the indirect form of heat-stroke the individual is attacked indoors. He becomes pale and nauseated; has colic and incontinence of urine. Convulsions follow, to be succeeded by cyanosis, dyspnœa, and insensibility, with stertor and contracted pupils. The temperature may run up to 110° F., remaining high for some time after death.

Such are briefly the various ways in which an individual may be attacked by the sun. To consider next the various theories advanced of the causation of heat-stroke, we have first the *caloric* theory, which attributes the attack to the action of intense heat *per se*. It is supposed that the intensity of the heat disturbs the regular action of the heat-regulating centres of the body. To this, however, it must be objected that stokers of the steamships in the Red Sea are scarcely ever affected by the heat of the furnaces. Next, there is the *autotoxic* theory, according to which the high temperature causes the blood to become poisonous to the nerve cells, especially those of the vasomotor centres and cardiac ganglia. Then we have the microbic theory of Dr. L. SAMBON. This theory can hardly be sustained, at any rate so far as India is concerned, according to most observers in that country. Dr. SAMBON states that as regards geographical distribution, the endemic area is limited to the lowest region, coast districts, and valleys of great rivers. Now Colonel J. A. CUNNINGHAM, I.M.S., has shown that the very lowest rates for heat-stroke are given by the Burma Coast, the Bay Islands, and the West Coast of India, the lowest regions of the 12 geographical districts into which India is divided for statistical purposes. Again, the author of the theory asserts that, with regard to the meteorological conditions, the disease does not especially coincide with the hottest days. The statistical tables of India, however, show that the greatest mortality from heat-stroke exists in the Punjab, Scinde, and on the North-West Frontier—the hottest parts of India. Lastly, this supposed microbe has not yet been seen. True, CAGICOL and LAPIÈRE have described one, but their observations lack confirmation. STILES, of Edinburgh, by injection experiments, seems to have excluded the presence of any toxin.

The view that, in our opinion, best accounts for heat-stroke is the actinic theory of Colonel F. MAUDE, R.E. This distinguished officer had suffered from several attacks of sun-stroke, when he conceived the idea that the rays of the sun which caused such attacks were not the heat rays, but the actinic rays situated at the other end of the spectrum. It occurred to him that if he lined his helmet with red to cut off these chemical or actinic rays (just as the photographer lines his dark-room with red for the same reason in developing), he would obviate the disastrous effects of the sun. He tried it, with the result that for many years he experienced no further ill-effects from the sun. An officer who did not believe in the theory, however, one day surreptitiously abstracted the red lining from Colonel MAUDE'S hat as he was about to expose himself to the sun, with the result that Colonel MAUDE again suffered from sun-stroke, and experienced great chagrin at the supposed failure of his theory until the repentant officer told him what he had done. Another officer, who had previously suffered on three occasions from sun-stroke, causing him to be invalided for nearly five years, also lined his helmet with red, with the result that as each succeeding hot weather season came round he was enabled to live without any discomfort from the sun, although he had previously suffered severely from headaches. The plan of lining the head coverings with red or orange flannel, therefore, certainly seems to deserve a more extended trial. As regards diet, moderation must be practised both with meat and drink. The late Surgeon-General W. C. MACLEAN, unquestionably an authority on tropical diseases, used to warn his class at Netley against the eating of meat more than once a day in the tropics. Alcoholic drinks should never be taken by those exposed to a hot sun. The best beverages are tea and coffee, the good effect of which will be easily understood when we remember that the sun's action diminishes the activity of the skin and lessens that of the nervous system, diminishing the excretion of carbonic dioxide and inducing cardiac paralysis, whereas tea and coffee have precisely the opposite effects.

The Discovery of the Functions of the Spinal Roots.

QUESTIONS concerning priority of scientific discovery are often best left to pass swiftly to the practical oblivion of the work-a-day world's neglect. But there stand exceptions: where the forward step achieved was epoch-marking, where the competing names are great, and where the rival claims involve the chivalry of sister nations. The discovery that the anterior and posterior roots of the spinal nerves are respectively motor and sensory in function stands in this position. It forms an event of capital magnitude in the history of medicine and biology. It can be assessed as a true compeer of the discovery of the circulation of the blood. It inaugurated and led on to the whole modern understanding of the nervous system so far as localisation of function is concerned. HARVEY'S discovery was more dramatically placed, since as regards biology it formed the *point du jour* of the whole Renaissance. With it the seventeenth century of Western Europe in one act lifted and relit the torch fallen from Greek hands 12 centuries before. So likewise with the discovery of the functions of the nerve-roots neurology passed at one stride from the world of GALEN to the modern era. It is odious that the true authorship of such an advance should lie in doubt, although the event itself is not yet a hundred years gone by. To attach to a discovered fact the name of its discoverer is an excusable grace whereby the aftercomers, late aftercomers who reap what they did not sow, mark their gratitude and perpetuate it. The name which we in this country commonly attach to the discovery of the root-functions is that of CHARLES BELL. But the claim is disputed. The doubts that have from time to time, even from the date of

BELL'S reclamation of the discovery, found voice have recently been clearly and dispassionately set forth in some correspondence in our columns. To give the discovery to BELL is to deprive of it another claimant—namely, the French physiologist, MAGENDIE. To do so unrightly would be the more regrettable in view of the French *savant's* dignified magnanimity throughout. BELL'S reclamation left unconvinced some who were, and still leaves unconvinced some who are, well qualified to judge it.

BELL, prior to the work of MAGENDIE, had on inferences from the naked-eye anatomy of the mammalian brain argued that the cerebrum through the pyramid was continuous with the anterior spinal column and the anterior roots; and that the cerebellum through the restiform body was similarly continuous with the posterior column and the posterior roots. By these two roots respectively, he argued, cerebral and cerebellar influences were separately dispensed and distributed to the peripheral parts. In an animal freshly killed he had found the anterior root respond to rough mechanical irritation, while the posterior root remained silent. This he regarded as confirmatory of his view, for the cerebellar function he thought to control the "secret actions of the bodily frame," and "especially govern the operations of the viscera." These naive speculations with their halting experimental basis resemble little the boldly decisive observations made by MAGENDIE, acknowledged master as he was of the physiological technique of his time. MAGENDIE showed that in the dog severance of the anterior roots leaves the limb fully sensitive but wholly paralysed as to motion, and that conversely severance of the posterior roots leaves the limb wholly insensitive but not paralysed as to motion. His demonstration left this result fixed beyond possibility of cavil. But of the posterior root BELL'S expression had been that it was "insensible." The anterior root he had considered "sensible" as well as motor. It is therefore not mysterious why, despite BELL'S publications, the true doctrine of the functions of the spinal roots remained unpromulgated until MAGENDIE'S announcement of it in 1822. The true doctrine had not been promulgated for the simple reason that it had not been arrived at. The "Idea of the New Anatomy of the Brain," published by BELL 11 years before, in 1811, did not contain it. That it did not anyone who, in the libraries of the British Museum or Royal Society, will turn to it may see. The rival claims as they emerge once more from the discussion in our columns seem therefore to admit of clear decision. It were, however, well if all the circumstances could be entered into and pronounced on once for all by some competent tribunal with a *personnel* such as should lend to its judgment authority and practical finality. We should ourselves be prepared to accept Dr. A. D. WALLER'S verdict, as delivered in THE LANCET of June 24th, p. 1718, but as this has already been appealed against in our columns he would probably consider that some further tribunal is called for. The question is for us in this country to some extent an affair of honour. If justice has yet to be satisfied it is high time the duty should be discharged with full publicity and without longer delay.

Annotations.

"Ne quid nimis."

THE BABEL OF HOOTERS.

WE were accused of making a puerile proposal when we held it to be desirable rather more than a year ago that in the matter of methods of warning in our thoroughfares some uniform system should be adopted by motor vehicles. "As things stand," we wrote previously, "there is nothing apparently to prevent the most fantastic methods of alarm being adopted, and the result may be irritating, if not occasionally disastrous, to the public. ..... In some instances the alarms are unnecessarily exaggerated and weird, and when a more or less foreign noise is released the effect may well give a shock to nervous persons." Several leading members of our profession have recently endorsed this view in the public press, and the layman is beginning to realise that a new and real infliction is rapidly being forced upon him. London is intolerable, not only by day, but by night also, on account of its Babel of motor warning sounds. As we previously urged, there should be a standard warning, and this warning should not be unnecessarily sounded. As it is, there are hundreds of horns on the motor vehicles in London which send forth an irritating blare, the note of which may be included anywhere in a range of a couple of octaves. On one vehicle there is the top note like a cornet, on another there is the middle note like a clarinet, and on a third there is the low note like a bassoon, and so on. Then there is the fiendish device by which the exhaust actuates a screaming syren or succession of notes or even an attempt to produce a chord. This confusion and multiplicity of sounds to gain a common and a humane end is completely illogical, and irritating beyond measure. We protest against this outrage upon the human endurance, thrust upon it not only by day but in what should be the resting hours of the night. There can be no question of the reality of the evil, and our authorities must be pressed to eradicate it from our midst. There is distinct medical testimony as to its possible effects, and the evil could be materially reduced, it seems to us, by enforcing a standard method of warning and preventing the superfluous use of the "hooter."

TUBERCULOSIS AND THE NATIONAL INSURANCE BILL.

THE National Association for the Prevention of Consumption has decided to devote the whole of its forthcoming annual meeting, to be held at the Caxton Hall, Westminster, on July 19th, 20th, and 21st, to a consideration of the best ways of employing the grants to be voted in the Budget for dealing with tuberculosis. An exceptionally strong executive committee has the work of organisation in hand, and many of its members will also take an active part in the proceedings. The proceedings will be divided as follows into five sections:—July 19th (morning): I. *Education:* Introductory address by Professor G. Sims Woodhead; (*a*) The School in the Campaign against Tuberculosis, by Dr. F. C. Shrubsall; (*b*) Tuberculosis Exhibitions and Caravans, by Sir William Younger, Bart.; (*c*) The District Nurse and the Health Visitor, by Mrs. Howard Marsh; (*d*) Propaganda among the Friendly Societies and Trade and other Organisations of the Working Classes, by Mr. J. Lister Stead, secretary, Ancient Order of Foresters. Afternoon: II. *The Machinery of Detection:* Introductory address by Dr. R. W. Philip; (*a*) The Hospital Outpatient Department, by Dr. R. C. B. Wall; (*b*) The Tuberculosis Dispensary, by Dr. H. G. Sutherland; (*c*) Other

Methods and Organisations: (1) Public—by Dr. James Niven, Dr. J. M. Ross, and Miss Bibby, sanitary inspector, Borough of St. Pancras; (2) Voluntary—by Miss Cowen, honorary secretary of the Health Committee, Jewish Board of Guardians. July 20th: III. *Treatment:* Introductory Address by Sir William Osler, Bart.; (*a*) Sanatorium Treatment, by Dr. A. C. Latham and Dr. Jane Walker; (*b*) The Educational Value of the Sanatorium, by Dr. M. S. Paterson and Dr. J. J. Perkins; (*c*) Home Treatment, by Dr. J. E. Squire, C.B., and Home Treatment of Persons under 16, by Dr. J. F. J. Sykes; (*d*) Open-air Recovery Schools, by Dr. Ralph P. Williams; (*e*) Tuberculosis Schools, by Miss McGaw, Member of Council, N.A.P.C.; (*f*) Advanced Cases and Segregation, by Dr. A. Maxwell Williamson. July 21st (morning): IV. *After-care of Patients*, by Mr. C. S. Loch, secretary of the Charity Organisation Society, and Dr. H. W. McConnel, to be followed by a general discussion. Afternoon: V. *The Administrative and Financial Aspects of the Bill.* Introductory Address, by Dr. W. Leslie Mackenzie: (*a*) The Cost to the Community, by Mr. Waldorf Astor, M.P.; (*b*) The Use of Existing Accommodation, by Dr. Nathan Raw; (*c*) The General and Medical Aspects of the Insurance Bill, by Mr. Ernest J. Schuster, LL.D. The Tuberculosis Exhibition of the association will be on view. In view of the importance of the occasion the meeting is likely to prove of exceptional interest, as is shown by the ready response of all the public bodies having control over tuberculosis in the three kingdoms to a request that they should be represented by delegates, and by the prominence of all the contributors. It is expected, moreover, that Mr. John Burns and possibly the Chancellor of the Exchequer will attend.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE annual meeting of the British Medical Association at Birmingham is now almost in sight, and all arrangements are practically complete. The annual meeting itself commences on Tuesday, July 25th, and continues during the next three days, but the annual representative meeting begins on Friday next, July 21st. Professor Robert Saundby, physician to the Birmingham General Hospital and professor of medicine in the University, is the President-elect of the Association, and Sir Henry Butlin, the retiring President, will vacate the chair for him on Tuesday, July 25th, at 2 P.M. Professor Saundby will deliver the Presidential Address at 8.30 P.M. that evening in the University, Bournbrook, Birmingham. On Wednesday, July 26th, at 12.30 P.M., Dr. Byrom Bramwell will deliver an Address on Medicine. On Thursday, at the same time, the Address on Surgery will be delivered by Professor Jordan Lloyd. Sixteen scientific sections have been arranged and will meet daily from Wednesday to Friday in the University Buildings at 10 A.M., viz.:—Anatomy and Physiology; Dermatology; Diseases of Children; Electro-Therapeutics and Radiology; Laryngology, Otology and Rhinology; Medical Sociology, including Medical Inspection of School Children, Hospital Administration and Contract Practice; Medicine; Neurology and Psychological Medicine; Obstetrics and Gynæcology; Odontology; Ophthalmology; Pathology; State Medicine and Industrial Diseases; Surgery; Therapeutics, including Dietetics; and Tropical Medicine. Throughout the meeting an Exhibition of Surgical Instruments, Drugs, and Foods will be open daily in the Bingley Hall. The annual dinner will be held on Thursday, July 27th, at 7.30 P.M., at the Grand Hotel. Religious services have been arranged for the opening day, followed by garden parties and a reception. Various other social arrangements have been made for members and ladies accompanying them, and on Saturday there will be excursions. Matters of great moment in connexion with the Insurance Bill will be considered by the representatives, and also referred to in the Medico-Sociological Section.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: NEW ADDITIONS TO THE MUSEUM.

IN THE LANCET of July 1st (p. 30) we announced that the annual exhibition of specimens which have been added to the Museum of the Royal College of Surgeons of England during the past collegiate year would be on view at the College on July 6th, 7th, and 8th. The following is an analysis of the specimens acquired: Pathological series, 193; surgical instruments, 4; teratological series, 34; human anatomy series, 8; physiological series, 101; histological series, 720; osteological series, man 85, vertebrata 16; odontological series, 27; and miscellaneous series, 15; making a grand total of 1203 specimens. Among the several donations it may be noted that H.M. the King presented another pheasant illustrating alteration in the secondary sexual characters of the hen bird. The President presented 43 drawings of cases of cancer and conditions which may be mistaken for cancer of the tongue. Many of these are in water colours and have been prepared by a skilled artist. Professor F. D. Bird of Melbourne gave 32 stereoscopic radiographs illustrating anatomical and surgical aspects of the human body. The collection of microscopical preparations, made by the late Mr. Cresswell Baber during his research on the comparative anatomy of the thyroid, and on which he based his paper in the Philosophical Transactions, 1881, was presented to the College by Mrs. Cresswell Baber. This valuable addition, amounting to 712 preparations, will be placed in the histology collection. Further additions to the pathology of tropical diseases have been received from Captain A. Whitmore, I.M.S., Rangoon, and from Dr. R. D. Keith, Dr. G. A. Finlayson, and Dr. S. M. Livesey of Singapore. Numerous donations have been made to the ethnological series. Through Dr. C. G. Seligmann 26 crania were obtained from various parts of New Guinea, and Mr. R. R. Williamson also obtained for the Museum crania from a newly discovered New Guinean tribe. Mr. P. A. Talbot presented five crania of natives of Southern Nigeria, a region at present imperfectly known from an ethnological point of view. Professor A. Watson of Adelaide University has presented various specimens which illustrate the anatomical peculiarities of the natives of Australia. The Egypt Exploration Fund and Professor G. Elliot Smith have presented further specimens which help to fill out the data relating to the physical structure of the ancient Egyptians. Additions to the Maori and Mallicollo crania have been made by Mr. E. W. Merton Holmes of Sutton, Surrey, and Mr. S. W. MacIlwaine of Clevedon. Many additions have also been made to the prehistoric British series. Mr. W. M. Newton presented a cranium found by him in the 60-foot gravel terrace of the Thames Valley at Dartford; this presumably is one of the oldest skulls found in England. Through Mr. F. G. Parsons a collection of bones excavated from an ancient cemetery near Folkestone, and assigned to the Jutes, was added to the Museum. Other valuable additions have been made to the prehistoric series by the Rev. J. W. Hays, Mr. W. Storrs Fox, Dr. Arthur R. Waddell, Mr. F. J. Bennet, Dr. J. Arnalt Jones, Mr. Frank Corner, Dr. Eric Gardner, and Colonel Willoughby Verner. As announced in the last annual report, a large and extensive collection of specimens, illustrating the experimental production of tuberculosis, has been presented by the Royal Commission on Tuberculosis. The description, cataloguing, and arrangement of this collection will take some considerable time, but it is hoped that in the course of the present year these specimens will be available for study by visitors to the Museum. Another gift of importance is

that made by the Imperial Cancer Research Fund, which has handed over to the College a complete series of specimens illustrating the artificial cultivation and propagation of cancer in mice. These specimens have been mounted and are at present on exhibition at Munich. Through Mr. Hammond Smith of the *Field* the Museum has received many illustrations of rare and instructive pathological lesions and developmental anomalies in game. Important donations have also been made by Colonel C. E. Shepherd, Mr. J. Bland-Sutton, the Australian Museum of Sydney, the Imperial College of Science, British Museum (Natural History), Mr. H. Balean, Dr. W. Blair Bell, Dr. F. Wood Jones, Mr. C. B. Lockwood, Mr. N. Hill, Professor T. Wardrop Griffith, Dr. A. Morison, Mr. H. Rischbieth, Professor A. L. Sheather, Professor Gustav Retzius, Dr. Ivy Mackenzie, Mr. A. R. Tweedie, Dr. H. A. Lediard, Dr. Leonard Guthrie, Mr. James Sherren, Mr. A. Hopewell-Smith, Mr. C. P. Childe, Mr. P. I. Watkin, Mr. S. Smulian, Mr. J. D. Malcolm, and Dr. J. F. McCann. Several important additions have been made by purchase. Amongst the most remarkable of these is a series of nine complete skeletons of Bushmen, a dwarf race rapidly becoming extinct, and of whom, says Dr. Arthur Keith, the Conservator, in his report, our knowledge is imperfect. In one individual the teeth of the upper jaw have ground against the lower jaw so as completely to expose the canal for the inferior dental nerve. This series of skeletons provides, for the first time in this country, an opportunity of making a complete study of the osteology of a dwarf race. Mr. W. M. Borcherds, a Member of the College, of Uppington, Cape Colony, made it possible for the College to acquire these specimens. An opportunity also occurred during the year of giving a very full representation of the pathological changes which occur in acromegaly.[1] So far as Dr. Keith has been able to discover, the skeleton of the subject of the disease—a male—is the only complete specimen in England.

ACUTE GANGRENE OF THE COLON.

IN the *Edinburgh Medical Journal* for May Mr. J. W. Dowden has reported a remarkable case of a very rare lesion —acute gangrene of the cæcum and of the whole colon. A labourer, aged 51 years, who was working on a night shift, was admitted into the Edinburgh Royal Infirmary at 10.30 P.M. on Jan. 13th, 1908. On that morning he returned from work, went for a walk, and took a meal before going to bed. At 11 A.M. he was seized with pain in the lower abdomen which soon began to swell visibly. The pain quickly became general over the abdomen, and he vomited some ill-smelling fluid. He passed neither fæces nor flatus after the onset of symptoms. He stated that just before admission he passed pure blood by the urethra. He had always been healthy until three weeks before admission, when he began to suffer from griping pains in the morning and some diarrhœa, chiefly mucus. At times he suffered from constipation. On admission he looked young for his years, and healthy except for some lividity of the face, which betokened anxiety and pain. There was evident dyspnœa, the respirations being 36. The temperature was 97° F., and the pulse 136, small, and compressible. The abdomen was much distended and did not move on respiration. On palpation there was remarkable absence of pain. The percussion note was tympanitic. Examination of the hernial regions and rectum revealed nothing. The urgent nature of the symptoms pointed to acute obstruction, which was thought might be due to volvulus. On the other hand, the history of "diarrhœa" with mucus at his age suggested malignant disease low in the large intestine. At 11 P.M. an incision was made to the left of the middle line chiefly in the lower half of the abdomen, and the anterior sheath of the rectus was split in its long axis. So great was the intra-abdominal tension that the fibres of the rectus separated, but no hernial protrusion occurred. The posterior sheath of the rectus was so tense and stretched that it was impossible to pick it up with forceps, and it therefore was opened by careful incision. It was surprising that nothing protruded from the peritoneal cavity. The coils of small intestine were somewhat congested but not distended. The incision was enlarged upwards and the cause of the distension appeared in the shape of a purple-black transverse colon distended to the size of a coat sleeve. The peritoneal coat was ruptured in its long axis. The colon was punctured with a trocar and cannula, but only gas, not under pressure, escaped, and the bowel did not collapse at all. The cæcum, ascending, transverse, and descending colon were similarly affected. The abrupt termination of the process at the ileo-cæcal junction and at the end of the descending colon was striking. At the latter point was a malignant tumour. No occlusion of arteries could be discovered. The patient's condition was such that nothing more could be done than tie a Paul's tube into the transverse colon. He was relieved by the operation, but rapidly became worse and died at 11 A.M. At the necropsy the abdomen was extremely distended and contained 15 ounces of turbid fluid. The large intestine was distended, dark, and gangrenous from the cæcum to the termination of the descending colon. Throughout this extent its serous coat was ruptured. The mucous coat was of a pale salmon-pink colour and healthy except for occasional petechiæ and minute follicular ulcers. There was a breaking-down annular carcinoma of the sigmoid flexure. The kidneys showed advanced fatty degeneration with chronic interstitial nephritis. The spleen was soft and diffluent. Cultures made from the intestine and spleen gave a mixed growth of the colon bacillus and Gram-positive diplococci. The spread of gangrene from the appendix to the cæcum is well-known, but of such extensive gangrene of the large intestine as was here present only two cases appear to have been recorded—by an American writer, Lanphear. In one, a boy, aged 7 years, was operated on for appendicitis with a huge abscess. Eight months later he was operated on again 38 hours after the onset of abdominal pain. There was gangrene of the entire colon and a band of adhesions located at the cæcum encircled the lower portion of the descending as well as the ascending colon. In the second case there was thrombosis of every artery of the meso-colon, of which the cause was unknown.

[1] THE LANCET, April 15th, p. 993.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

WE continue to receive letters from correspondents in India giving expression to the feelings of dissatisfaction that are, unfortunately, widely prevalent in the Indian Medical Service. In a communication printed in our issue of July 8th (p. 124) our informant draws attention to the fact that in India an officer of the Royal Engineers draws more pay than an Indian Medical Service officer of corresponding rank. We are not always in love with comparisons, bearing in mind Dogberry's philosophical dictum, but in this case there appears to be distinctly a grievance, when an officer, who has provided himself with an expensive professional education before entering the service, receives less pay than another officer of corresponding rank who has had his professional training provided for him at the expense of the State. With regard, however, to the comparison of Royal Engineer and Indian Medical Service officers in civil employ, we consider that an Indian Medical Service officer when given a civil charge is placed in a position where

private practice is, as a general rule, obtainable. This is certainly not the case everywhere, but we believe it is still the case, as a rule. If it were not so there would hardly be the general desire to enter this branch that we believe still exists. There is little doubt, however, that this attraction to civil employ is less than it used to be, and the official policy appears designed to diminish it still further. The complaints as to difficulty in getting leave and the excessive number of transfers amongst junior officers are well founded. Formerly this might have been due to inefficient administration. At present we have no doubt that the higher authorities have great difficulty in carrying on the administration at all, owing to the scarcity of officers. As we have previously stated on several occasions there is urgent need for the Indian Government to deal without delay with the conditions causing dissatisfaction in the medical service; the discontent is increasing, and in many respects is well founded. We still think, however, that there is some exaggeration in the statement that the cost of living has been doubled, and the purchasing power of the rupee halved, in recent years; we should be glad to be informed of specific instances. There is great variation between different parts of the country and between different stations, some of which are notoriously expensive. We are viewing the question from the standpoint of the Indian Service as a whole.

THE ETIOLOGY OF TYPHUS FEVER.

SEVERAL reports have been lately published which have extended our knowledge of typhus fever. After failing to infect monkeys and small quadrupeds by injections of blood from human typhus cases, Nicolle[1] found that the chimpanzee would react and that the infection could be passed on to another ape. Then E. F. McCampbell of Columbus University, Ohio,[2] discovered that a fever could be excited in apes by the injection of the blood of a patient suffering from "tabardillo," which is typhus fever as it occurs endemically in the upper tableland of Mexico, and that the virus, uncultivable and invisible even with dark-ground illumination, did not pass through a Chamberland filter. At the same time Anderson and Goldberger, of the Public Health and Marine Hospital Service, came to the same conclusions,[3] and showed further that one attack of this fever produced by inoculation protected against a second infection; also that the virus would not pass a Berkefeld filter. Lastly, Dreyer,[4] working amongst typhus cases in Egypt, without knowledge of these other investigations, has confirmed them with singular completeness, and has shown in addition that an ape which failed to react to filtered serum was yet not insusceptible, for when unfiltered blood was subsequently injected into it the usual fever developed. Our present knowledge drawn from these researches then amounts to this, that the exciting cause of typhus fever cannot at present be made visible either in fresh blood or in stained films of the blood or smears from organs, and that it is not a filter-passer. Dreyer suggests that it may be invisible because lodged within a cell; this would also prevent it from passing filters. None of the observers named have been able to get a growth from the blood on any medium. Inoculation of the blood of a typhus patient into certain apes is followed, after an incubation of from 8 to 18 days, by a fever of sudden onset, lasting a week, with hebetude and anorexia as its characteristic symptoms, and ending generally by crisis; a milder fever than typhus in the human subject, but yet presenting a quite characteristic and recognisable clinical picture. Blood taken from the animal during the pyrexia and inoculated into another ape will excite a similar condition, and one attack confers an immunity. Rabbits and guinea-pigs are not susceptible, but they do react to blood from cases of Rocky Mountain spotted fever, and this is partly why that fever has come to be thought different from typhus fever. But the most important question for us is how the disease spreads, and the epidemiology of the infection is supposed to point to an insect as the carrier, attention being directed to the louse, the bug, and the flea. Typhus fever, to be infectious, requires very close contact. It does not spread in a clean house, nor in a hospital, except to those of the staff who handle the clothing of the newly received patients (Nicolle). In Tunis, in one epidemic centre there were no bugs, in another no fleas, while in the mines that were infested with fleas the Europeans who had no lice escaped typhus fever altogether. Anderson and Goldberger decide that if the infection were carried by the flea, the disease would be infectious at greater range, and that it would not exclusively attack the poorer classes. Then they think that as it is a disease less attached to houses than to persons, and as it particularly attacks armies in the field (who have no beds), it cannot be carried by bugs. As, however, armies are specially apt to be infected with lice, suspicion falls on pediculus vestimentorum, and that would explain the marked incidence of typhus fever on people brought intimately into relation with the sick: medical men, nurses, clergymen, and laundresses. These writers have made some experiments confirming Nicolle's observations that lice were apt to die at temperatures over 70° F., and thus they explain the prevalence of tabardillo on the cool Mexican plateau (where the lice would be active and hungry), and its absence from the hotter zone down by the coast. Like Nicolle, they think that they have succeeded in conveying infection to an ape by the bite of infected lice. The Rocky Mountain spotted fever we have mentioned is also supposed to have an insect carrier, a wood-tick, for here the disease and the insect have a similar seasonal prevalence.

[1] Annals of the Pasteur Institute, 1910, vol. xxiv., p. 243.
[2] Journal of Medical Research, 1910, vol. xxiii., p. 71.
[3] Ibid., 1910, vol. xxii., p. 469.
[4] Archiv für Schiffs- und Tropen-Hygiene, May, 1911.

THE MEDICAL INSURANCE COMMITTEE.

A MEETING of the Medical Insurance Committee was held on Tuesday, July 4th, at the offices of the British Medical Association, when the annual report of the committee was read and adopted. The full committee at the present time consists of Dr. G. E. Haslip (chairman), Mr. L. E. Creasy, Mr. Guy Elliston, Sir Frederic Hewitt, M.V.O., Mr. Hugh R. Ker, Dr. J. A. Macdonald, Dr. Donald J. Mackintosh, M.V.O., Dr. S. Squire Sprigge, Mr. J. Smith Whitaker, and Dr. Dawson Williams. As the work of the committee has been regularly noticed in our columns it may seem unnecessary to describe its scope to our readers, but the movement, though becoming so successful, is still a very young one, and deserves all legitimate prominence. The committee had its origin in a correspondence in THE LANCET (?), the importance of which was recognised by certain influential members of the British Medical Association, and has now been carrying on its business close upon four years. The committee was started to secure for medical men the best terms possible for all classes of insurance, and after paying working expenses to distribute any surplus to deserving medical charities. It has fulfilled its objects in a thoroughly satisfactory manner. To quote from the chairman's report, which was adopted at this meeting: "That the main object has been achieved is demonstrated when it is borne in mind that up to the present the committee has returned to medical men insuring through the agency, in the form of rebates, a sum exceeding £1500, and has handed over to medical charities some £140." The

following figures of the annual turnover of the Medical Insurance Committee from the starting of the agency are also to be found in the chairman's report, and demonstrate that the advantages of the work done by the committee are being appreciated as its operations become more widely known :—

1907	1908	1909	1910
£1358	£1725	£2463	£4867

In turning to the figures for the year ending Dec. 31st, 1910, it is satisfactory to record progress all round. Employers' Liability and Personal Accident shows an increase in premium income of £94 ; Life, £245 ; Fire, £20 ; Burglary, £14 ; Motor Car, £1886 ; and Sundry Insurances, £91 ; giving a total increase of £2350 in premium income. As regards Motor Car Insurance over £2000 was taken in premiums. The "Red Cross" Doctor's Policies have been much utilised, as is proved by the large increase of business. In these circumstances we have no hesitation in commending the work of the committee to the close attention of our readers. They can do good to others and obtain substantial permanent benefit for themselves under it operations.

A SAFE AND EFFICIENT ANTIRABIC VACCINE.

EVERYONE will agree with Sir David Semple when he lays down that the two cardinal factors to be considered in the preparation and administration of vaccines, whether preventive or curative, are safety and efficiency. These were the two points on which Pasteur originally concentrated his attention, and the principles that he laid down have been universally adopted wherever antirabic treatment has been carried out. With regard to bacterial poisons, it has been established that the "vaccines" obtainable from the dead bacteria produce immunity; in small-pox itself the attenuated living vaccine of the modified disease, vaccinias is used as a prophylactic ; for inoculation against typhoid and cholera dead cultures of the specific bacteria are used ; for rabies Pasteur commenced treatment with a dead virus, and having procured a certain degree of immunity followed it up by injection of the living virus. Högyes of Budapest introduced an antirabic treatment by injecting high dilutions of a living virus to begin with, following on with lower dilutions carefully graduated; this is known as the "dilution method," it being supposed that a rabies toxin does not exist separated from the living virus. In the "dried cord" method of Pasteur the existence of a toxin is assumed in the nerve centres (brain and cord), the principal seat of the virus, and the focus of its multiplication. In a recent research [1] Sir D. Semple has endeavoured to ascertain whether animals can be as highly immunised against rabies with a dead as with a living virus ; for if this be the case, it would follow that such a vaccine would be both safe and efficient, and would possess the two most essential properties of an antirabic or any other vaccine. To procure a dead antirabic vaccine heat may be used, followed by the addition of antiseptic to preserve the vaccine and to guard against subsequent contamination ; or an antiseptic only may be employed. It was found that rabies virus was easily destroyed by heat ; a temperature of 50° C. kills a 5 per cent. dilution of "fixed virus" in 15 minutes. With regard to carbolic acid, it is to be remembered that an efficient rabies vaccine should contain at least 2 per cent. rabies virus, and not more than 0·5 per cent. carbolic acid, when administered to the patient; now such a vaccine cannot be obtained simply by killing the virus with carbolic acid at ordinary room temperature, for the amount of carbolic acid required would be too large to be capable of subsequent dilution without at the same time over-diluting the vaccine. After numerous experiments it was found that with an 8 per cent. dilution of rabies virus in normal saline the virus was killed by 1 per cent. carbolic acid at 37° C. in 24 hours ; this fluid being then diluted with an equal volume of normal saline becomes a "4 per cent. rabies virus in 0·5 per cent. carbolic acid normal saline solution" ; this is a very suitable strength of virus for antirabic treatment, and contains sufficient carbolic acid to prevent any chance of subsequent contamination when stored for use after being made up. The next point was to determine the efficiency of this vaccine against lethal doses of living rabies virus. Four monkeys, two dogs, and two rabbits were subjected to treatment, the vaccine being injected hypodermically on the sides of the abdomen, one dose daily ; all the monkeys, one dog, and one rabbit survived the subsequent subdural inoculation of lethal doses of living rabies virus ; control animals in every case died from rabies ; the two vaccinated animals that developed rabies did so later than the control animals, thus showing that they had a greater, though still insufficient, resistance. The serum of these eight animals was tested as to its rabicidal properties ; samples of blood were taken (previous to their being inoculated with living virus), and after separation of the serum this was mixed with an equal volume of diluted (1 in 200 or 1 in 300) living rabies virus, and incubated at 37° C. for two hours ; after which rabbits were inoculated subdurally with 0·2 c.c. ; at the same time control rabbits were inoculated with a similar mixture of virus and of serum from an *un*treated animal of the same species as the immunised animal ; 12 experiments and 12 controls were carried out ; the rabicidal power was complete in seven and considerable in the other five animals, which developed rabies later than the controls in which normal serum was used. Now, antirabic treatment is essentially prophylactic ; it differs from the preventive measures against other infectious diseases in being only carried out after infection has taken place, but before it has had time to assume an active phase. It is most important, therefore, that, when it is required, it should be commenced as early as possible ; hitherto it has been necessary for an infected person to journey to a Pasteur Institute, where the preparation of a "living vaccine" is carried on, and where this is always available, whether by the "dried cord" method of Pasteur, or the "dilution" method of Högyes ; in either case the fact that living vaccine is used precludes the possibility of sending it to a distance for the treatment of a patient without serious risk of interfering with its efficiency. On the other hand, a dead carbolised rabies virus, such as Sir D. Semple has here described, can be sent to any centre where treatment could be carried out without risk of injuring its properties. One central institute could supply the whole of India with vaccine, patients would be saved long and expensive journeys, and, most important of all, they would come under early treatment, which is of the very essence of success ; a treatment, moreover, free from all risks.

[1] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 44. The Preparation of a Safe and Efficient Antirabic Vaccine. By Lieutenant-Colonel Sir D. Semple, M.D. R.U.I., Director, Central Research Institute, Kasauli. Calcutta, 1911. Price 9*d*.

A REINFORCEMENT OF THE POISONS AND PHARMACY ACT.

LIQUID preparations containing more than 5 per cent. by weight of free ammonia have been prescribed, by an Order in Council, as substances to which Section 5 of the Poisons and Pharmacy Act applies. That is to say, these preparations must not be sold by retail except in bottles distinguishable by touch from ordinary bottles, and unless the bottles are distinctly labelled with the word "Poisonous," the words "Not to be taken," the name of the substance, and the name and address of the seller. The substances to which these

regulations previously applied[1] were sulphuric acid, nitric acid, and hydrochloric acid, and (as to the labels) the soluble salts of oxalic acid. The regulation as to the sale of ammonia will come in force on Feb. 1st, 1912.

RECENT URBAN MORTALITY IN THE UNITED KINGDOM.

THE published results of the recent Census, affording as they do a revised and trustworthy basis for the calculation of rates of mortality, have added interest and value to the statistical returns issued periodically by the Registrar-General. The present population of the 77 large English and Welsh towns dealt with in the Registrar-General's weekly returns is now estimated at 16,157,797, and is less by rather more than a million than the estimate previously based upon the rate of increase that prevailed between the two preceding Census enumerations in 1891 and 1901. The effect of this over-estimate of the population of these 77 towns was to understate the recently reported mean annual death-rate in the aggregate of these towns by about 1 per 1000. Calculated on the now revised estimate of their population, the mean annual death-rate in these English and Welsh towns during the 13 weeks of the past spring quarter (ending on July 1st) was equal to 13·8 per 1000. In the corresponding period of last year the recorded death-rate, calculated on the over-estimated population, did not exceed 12·6 per 1000. If, however, the unprecedentedly low death-rate in these 77 towns during the spring quarter of last year were corrected for the over-estimated population, the corrected rate would be but slightly below that recorded during the corresponding period of this year. The annual death-rate from the principal epidemic diseases in these towns during last quarter scarcely exceeded the corrected rate from the same diseases in the corresponding period of last year, notwithstanding the somewhat exceptional prevalence of measles in many of the large towns during last April and May. The death-rate of infants under one year in the 77 towns during the past spring quarter did not exceed 96 per 1000 registered births, and corresponded with the low rate that prevailed in the spring quarter of last year. On the whole, the mortality statistics for these 77 large towns during last quarter imply that their mean health-condition was almost identical with that prevailing during the spring of last year, when the death-rate, after correction for over-estimation of the population, was lower than in any previous corresponding period. In the eight principal Scotch towns the population of which is now estimated at 1,710,291, on the basis of the recent Census returns, the annual death-rate from all causes during the 13 weeks of last quarter was equal to 16·7 per 1000, and the rate from the principal epidemic diseases to 2·1 per 1000, owing mainly to the exceptional fatality of whooping-cough; and the death-rate of infants under one year was equal to 110 per 1000 registered births. In the 22 town districts of Ireland, having an estimated population of 1,149,495 (revised on the basis of the recent Census returns) the annual death-rate from all causes was equal to 17·9 per 1000, and from the principal epidemic diseases to 1·3 per 1000; while the death-rate of infants under one year of age did not exceed 95 per 1000 registered births. Thus the annual death-rate from all causes, calculated in each case on estimates of population based on the recent Census returns, showed during last quarter an excess of 2·9 per 1000 in the Scotch towns, and of 4·1 per 1000 in the Irish towns, in comparison with the rate during the same period in the 77 large English and Welsh towns. Thus in equal numbers living there were during last quarter 121 deaths in the Scotch towns and 130 deaths in the Irish towns to each 100 deaths registered in the 77 far larger English and Welsh towns. It is now impossible to ignore such excess in the rate of mortality as conclusive evidence of inferior sanitary condition and administration.

[1] THE LANCET, April 1st, 1911.

THE annual luncheon of the Continental Anglo-American Medical Society will be held in Birmingham on Thursday, July 27th, at 1 30 P.M., at the Grand Hotel, Colmore-row. The chair will be occupied by Sir William Osler, Bart., Honorary President. Members of the society who intend being present are requested to communicate as soon as possible with Dr. Charles G. Jarvis, honorary secretary, 81, Boulevard Malesherbes, Paris.

WE regret to announce the death on Monday, at the age of 69 years, of Mr. Henry Ebenezer Allen, B.A., LL.B., late Registrar of the General Medical Council and Clerk of Convocation of the University of London.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to July 5th (total available for distribution £37,250):—

	£	s.	d.
Christ Church, Lancaster Gate	1009	0	0
Holy Trinity, Chelsea	400	0	0
St. Columba, Pont-street	311	0	0
St. Paul's, Onslow-square	289	0	0
Essex Church, Kensington	233	0	0
Wimbledon Churches	213	0	0
St. Stephen's Church, South Dulwich	167	0	0
Brompton Parish Church	133	0	0
St. Nicholas, Chislehurst	103	0	0
Annunciation, Marylebone	101	0	0
Hampstead Parish Church	86	0	0
Christ Church, Hornsey	85	0	0
St. Andrew, Leytonstone	80	0	0
St. Mary's, Kilburn	79	0	0
St. James', Kidbrook	69	0	0
St. Stephen's, Ealing	60	0	0
Lewisham Parish Church	63	0	0
St. Paul's, Upper Norwood	56	0	0
St. Anne's, Soho	55	0	0
St. Andrew's, Wells-street	54	0	0
St. Barnabas, Kensington	53	0	0
St. Mary's, Stoke Newington	52	0	0
St. James's, Clapham Park	50	0	0
Gray's Inn Chapel	50	0	0
Christ Church, Highbury	47	0	0
Christ Church, Hampstead	44	0	0
St. John's, Wimbledon	43	0	0
St. Andrew's, Ashley-place	43	0	0
St. Gregory's, Earlsfield	43	0	0
St. Augustine's, Kilburn	42	0	0
St. Philip's, Sydenham	40	0	0
Trinity Presbyterian Church, Bromley	38	0	0
St. Luke's, Battersea	37	0	0
St. John at Hackney	37	0	0
Brixton Parish Church	36	0	0
St. Michael's, Highgate	31	0	0
St. Mary Magdalene, Munster-square	31	0	0
Islington Parish Church	31	0	0
Morden Parish Church	30	0	0
All Saints', Blackheath	28	0	0
St. Andrew's, South Streatham	28	0	0
St. Luke's, Westbourne Park	27	0	0
Hayes Parish Church	27	0	0
Park Church, Crouch End	26	0	0
St. Andrew's, Stockwell	25	0	0
St. Matthew and Missions, Upper Clapton	25	0	0
St. Barnabas, Dulwich	25	0	0
Woodford Parish Church	24	0	0
Orpington Churches	24	0	0
Catholic Apostolic Church, Gordon-square	24	0	0
All Saints', West Dulwich	23	0	0
Finchley Parish Church	22	0	0
St. John's, Lewisham	22	0	0
St. Stephen's, Lewisham	22	0	0
St. Matthew's, Westminster	22	0	0
Holy Trinity, Northwood	22	0	0
Plumstead Parish Church	22	0	0
St. Clement's, Notting-hill	22	0	0
Holy Redeemer, Chelsea	21	0	0
St. James's, Norlands	21	0	0
St. Luke's, Bromley	21	0	0
St. Mary's, Hendon	21	0	0
St. Augustine's and St. Faith's, Old Change	20	0	0
St. Giles's-in-the-Fields	20	0	0
St. Alban's, Acton, and Mission	20	0	0
Lingfield Parish Church	20	0	0

WHAT IS NON-INFLAMMABLE FLANNELETTE?[1]

THE question of the danger arising from the use of flannelette for articles of clothing was one of the subjects of inquiry referred to the Coroners' Committee by the Secretary of State for the Home Department in December, 1908. The committee issued a separate report on this particular question on August 23rd, 1910, and on the whole the members of this committee did not appear to regard the matter in a very serious light. "Legislation of the kind suggested," they concluded, "is the less justifiable in view of the fact that matters may, in course of time, be expected to right themselves. Great improvement has already been made in the manufacture of flannelette and further improvements may be anticipated. There is also the possibility that new and cheaper methods of diminishing the inflammability of the material may be discovered. ..... Having regard to these considerations, we are unable to recommend any legislation, except for the case in which there is a positive misrepresentation of the character of the goods offered for sale." But in Clause 7 of the report the committee state that for cases of misrepresentation there is no difficulty in providing. "Nothing more is required than to amend the Merchandise Marks Act, 1887, by adding a provision making it penal to describe as uninflammable material which will not stand certain prescribed tests. A proposal to this effect has been made by some of the witnesses, and we have no hesitation in recommending it for adoption." On the face of it the proposal seems perfectly reasonable, but as far as we can gather it has not received legislative sanction or acknowledgment, which it obviously should do assuming that such misrepresentation exists, and having regard to the real dangers to which such a deception might easily lead.

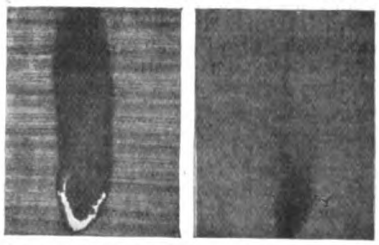
Our attention was drawn to this aspect of the question by the National League for Physical Education and Improvement, and on that body assuring us that such a state of things did exist we offered to undertake an experimental inquiry into the matter, the samples of material to be obtained by the League and to be forwarded to THE LANCET Laboratory for testing purposes without any intimation at all being given to us as to where they were procured or as to the name of the manufacturer. All the manufacturers of flannelette, as far as was known by the League, whose goods were advertised as being safe, were informed of the intention to submit the materials to fire tests, and were invited to send samples. A dozen pieces of material were eventually sent to us by the League, six coming from two of the manufacturers and six having been obtained in the open market. Each was marked with a distinctive mark placed upon it by the secretary of the League.

Flannelette is admittedly a cheap substitute for flannel or wool and the material has proved a veritable boon to the poor because of its comfortable and comforting qualities chiefly as an article of underclothing. It is soft and warm to the touch, wears well, and in many ways presents qualities as a material for clothing equal to wool itself, while it is infinitely cheaper. Its use is not by any means confined to the poor, for flannelette garments are now worn and appreciated by all classes. Moreover, flannelette is about half the price of real flannel, or even less, according to the quality supplied. It consists entirely of cotton, the secret of its success as a clothing material being merely the fact that it has a raised surface or nap which forms a kind of cotton-wool coating to the fabric. It is this nap which at the same time forms a source of comfort and a source of danger, the former because of its high non-conducting quality and the latter because of its ready inflammability. Real flannel possesses the double advantage of being warm and insulating and practicably non-inflammable.

In Figs. 1 and 2 illustrations (which are photographs of the material after testing) will be found of the difference in regard to the inflammability of flannelette and flannel before washing and after washing. It will be well to describe exactly how this experiment was performed, as it was applied eventually with the same detailed attention to the series of flannelette fabric submitted to examination and alleged to be "safe."

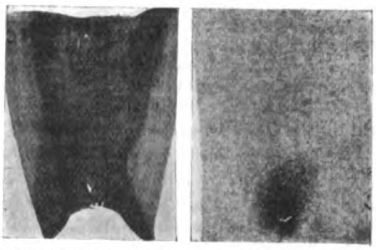
A piece of fabric 6 inches square was hung upon two fine hooks at the top. The tip of a small conical coal gas flame 3½ cm. long and 3 mm. thick was then brought into contact with the fabric at a point about 1 inch above the lower edge and as nearly as possible in the centre. The contact in every case was 2 seconds; at the expiration of 15 seconds the flame, if it persisted, was extinguished by pressing upon the burning material a pair of cardboard squares. It was felt that this method of testing the material approximated to the conditions of practice when a garment comes into contact with flame. It is quite obvious that a garment never has a fresh clean cut edge at the bottom of it: it is finished always with a hem, the cloth being doubled over and sewn. It is also probable that when contact occurs with

FIG. 1.—Flame test, 2 seconds' contact.



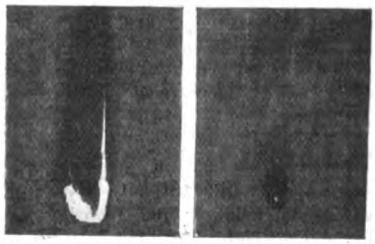
Common flannelette unwashed. Flannel unwashed.

FIG. 2.



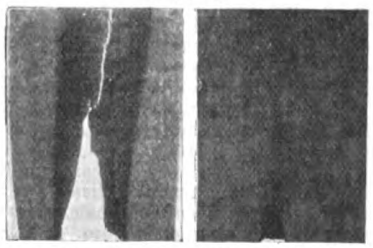
Common flannelette washed once. Flannel washed.

FIG. 3.—Flame test, 2 seconds' contact.



Common flannelette lit above edge. D 6 material lit above edge.

FIG. 4.



Common flannelette lit under clean-cut edge. D 6 material lit under clean-cut edge.

[1] A contribution from THE LANCET Laboratory.

a flame or fire it is rarely if ever immediately under the edge, it is practically certain to be against the surface. Moreover, the garment at the time of ignition is generally, if not necessarily, in an upright position, so that ignition once started proceeds upward to the portions heated already by the advancing flame. In Figs. 3 and 4 it will be seen that when common flannelette is ignited below under a clean cut edge the firing is more extensive than when the flame is applied a short distance above the edge. The former method, in short, exaggerates the inflammability of the material, while the latter more likely corresponds with the actual occurrence of ignition in practice.

Apart from illustrating the way in which the tests were made Figs. 1 and 2 show in a striking manner the inflammability of common flannelette as compared with real flannel. Real flannel, in fact, may for all practical purposes be regarded as non-inflammable. The material only burned so long as the starting flame was in contact, and there was no need to quench the flame after 15 seconds' interval; it went out. Incidentally it will be noted that common flannelette is much more inflammable after it is washed (Figs. 1 and 2). This is a point which will be developed when we come to the series of tests made with a number of flannelette materials said to be "safe."

The materials tested were just a dozen in number, and the results are given in the following paragraphs while certain information supplied in regard to them, and obtained by the League, is added with each description. A brief record of the results of the tests follows, and in each case the experiment is illustrated by a reproduced photograph, Series I. and Series II., of the burnt material.

Sample A, Price 4¾d. per Yard.

The following is an extract from an advertisement of this sample:—"It can be recommended for any purpose for which a high-class flannelette may be used. It is of short and even nap and is absolutely free from any tendency to flare."

Results of tests. — Unwashed the material burned sluggishly, but, as will be seen from the photographs—Series I. (*b*), (*c*), and (*d*)—it became decidedly dangerous even after the first washing, the general effect of washing being to "fluff" the material. The washing was done with soap and water by a person accustomed to washing domestic underclothing. The claim in regard to its non-flaring tendency is not sustained by these experiments.

Sample B, Price 7¾d. per Yard.

The following is an extract from an advertisement of Sample "B":—"A guaranteed fabric, equal to Ceylon flannel in appearance and infinitely superior in washing and wearing qualities, yet only half the cost, is 'B'; the best fabrics for shirts, blouses, and underclothing. Smart designs. Fast colours. Will not flare."

Results of tests.—This material ("B") did not burn vividly, and the flame was inclined to go out before it was purposely quenched in 15 seconds, but it became distinctly dangerous after first washings ("B," Series I. (*b*)) and after subsequent washings (Series I. (*c*), (*d*)) it was distinctly inflammable, and the claim "will not flare" is not sustained by these experiments.

Sample C, Price 6¾d. per Yard.

The following is taken from an advertisement of this material:—"A problem solved. Considerable interest at present attaches to the solution of the question, 'How to make a cotton flannelette at once warm, healthy to wear, and non-inflammable.' The 'C' flannelette possesses the above qualifications in the highest possible degree. ..... It has the further advantage that it raises better and closer, and is therefore less inflammable than an ordinary twilled flannelette. An article made in this manner will not take fire more readily than an ordinary night-dress. Every piece is warranted free from extraneous moisture and from all injurious chemicals. 'C' flannelette has stood the test of time and experience. ..... Being exceptionally short and close in the pile will not easily catch fire and is much safer than the ordinary makes of flannelette. Confidently recommended for all classes of underwear and for ladies' and children's nightdresses."

Results of tests.—The unwashed material ("C") behaved well on placing it in contact with the testing flame, the flame on the material not lasting more than five seconds, going out, that is, before the 15 seconds' interval, when, as in all the experiments, the progress of the flame was stopped by pressing upon the fabric two squares of cardboard on each side. Its inflammability increased distinctly after washing once, but it did not appear to get worse after the second and third washing, the flame tending to converge rather than spread, as the illustrations show (Series I.). The material is a decided advance on ordinary flannelette, and much safer.

Sample D 1, Price 8¾d. per Yard.

The following is taken from an advertisement of Sample D 1:—"The only safe and fire-resisting flannelette is 'D 1,' the cheapest life insurance in the world. It is the only flannelette proved to be safe by a committee of scientific experts; the only flannelette approved by the Home Office Commission. 'D 1' has a standing challenge to the whole textile world which has never yet been taken up, because it is invincible. 'D 1' combines all the advantages of high-class flannelette with a degree of safety possessed by no other. It is cosy, warm, most durable, pleasant to the skin, aseptic, easy to wash, and is flame-proof to the last thread."

Results of tests.—Material "D 1" was practically flame-proof when tested unwashed; it only seemed to burn during contact with flame, and when the flame was withdrawn the flame on the material went out in five seconds, and there was consequently no need to quench it at the 15 seconds limit. Its inflammability, however, increased distinctly after the first washing, but it was never inflammable to a dangerous degree, the flame proceeded unwillingly, so to speak, converging in most instances rather than spreading (Series I. (*c*)). The claims in regard to the safety of this material are established, we think, by our experiments.

Samples D 2, D 3, D 4.

The claims made for these fabrics were similar to those made for D 1, and it will be seen from the illustrations of the tests (Series I. and II.) that they were similarly flame-proof. The unwashed samples declined practically to burn at all. There was a slight tendency, however, to burn after washing, although the flame made a tardy advance and practically went out long before the 15 seconds interval. It will be seen that in these cases the flame converged and showed no inclination to spread. The materials D 2, D 3, and D 4 are therefore probably safe from flame and the claims made in this regard are sustained by our experiments.

Samples D 6, D 7.

These may be considered together, as similar claims are made for them as to flame-proof merits, and they went through the test of flame with very satisfactory results. The unwashed material practically refused to burn, the result of applying the flame for two seconds being merely a charred spot. This slightly extended on a washed specimen, but there was no flame after the contact flame was withdrawn. Both materials are free from fire danger and absolutely safe, and the advertised claims in regard to safety are sustained by our experiments. In spite of their non-inflammability there was a comfortable smooth nap or pile upon these fabrics.

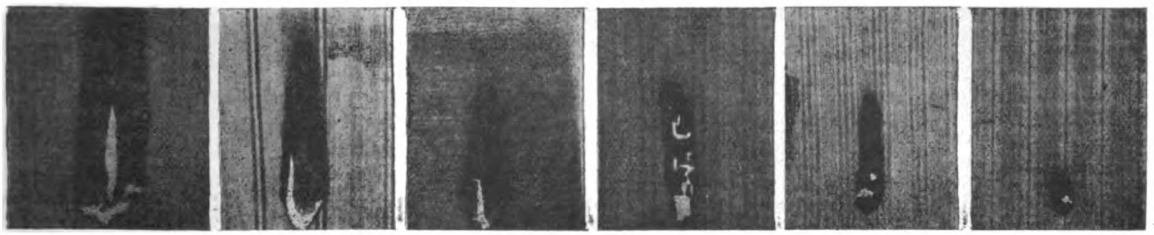
Sample E, Price 6¾d. per Yard.

The manufacturers of this fabric wrote in regard to their goods:—"We do not claim that they are non-inflammable, but that they are as safe as linen, and even safer than calico, muslin, &c. Our flannelettes were thoroughly tested before the Coroners' Committee; we enclose extracts from the record of the proceedings of that committee giving the chairman's description of the tests and his remarks, which show that the committee was satisfied with the result. ..... When we commenced the manufacture of flannelette we speedily realised that if loosely made and with a long nap it offers no resistance to fire. We therefore proceeded upon opposite lines and made our goods with a closely woven foundation with a short close nap which is obtained by a special process. This has been so successful as not only to merit the remarks of the chairman of the Coroners Committee, but no single burning fatality in connexion with 'E' flannelettes has ever been recorded. ..... If the public would refuse to purchase the low-class goods and only use cloths like 'E' flannelette, there would be no danger in any well-regulated household, as in these goods there are no chemicals which can possibly injure the skin of the tenderest child." The above statements occur in effect also in some advertisements of these goods. It is of interest to record, also,

that the assistant at the shop where Sample "E" was obtained said at the time of purchase, "This is quite as good as 'D 1'—it is practically 'D 1,'" while an assistant at another shop said, when safe flannelettes were asked for, "We only keep 'E,' and their 6¾*d.* flannelette is quite as good as 'D 1' at 8¾*d.*"

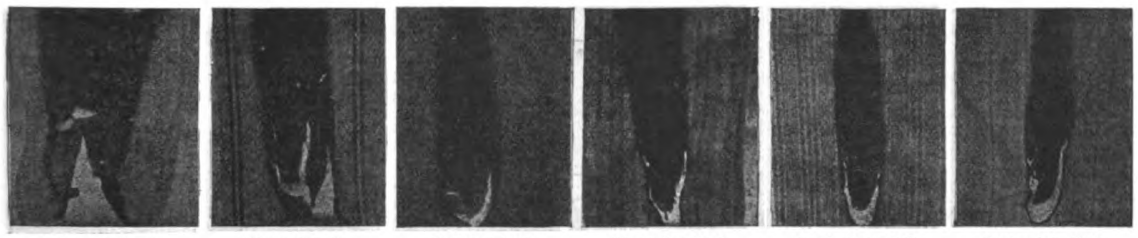
Results of tests.—An inspection of the illustrations of the flame test in Series II. (*a*), (*b*), (*c*), (*d*) will show that material "E" is decidedly superior to common flannelette, and even on repeated washing the inflammability was not increased. After the third washing the burnt area was no greater than was the case with the original unwashed material, and it will be seen that the flame converged to a point which invariably means that it is going out and not spreading. The makers deserve credit, we think, for their perfectly frank statement that "we do not claim that they are non-inflammable," while they add, "but they are as safe as linen." The statements are in complete accord with our experiments. The material does burn on contact with a flame, but burns sluggishly, and we are inclined to think that materials of the type of "E" may be regarded as reasonably safe. It is not in this regard, however, so completely proof against flame as the material which has been treated with certain fire-proofing materials, and therefore it is not correct for a shop assistant to describe, as was the case, "E" material as safe as a material so treated. The question of fire-proofing will be discussed further on.

SERIES I. (*a*).—Flame tests, 2 seconds' contact. Original material *unwashed.*



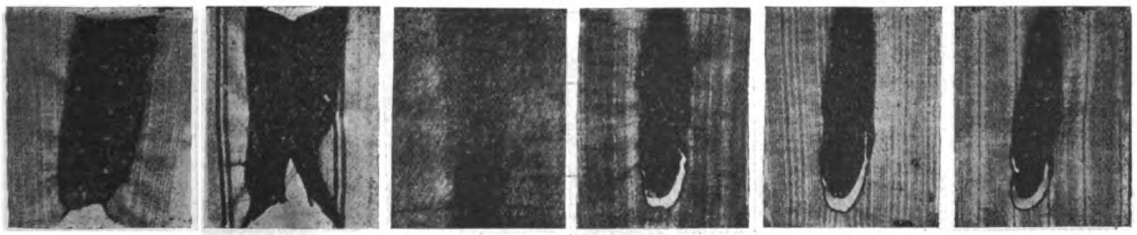
Material A. Material B. Material C. Material D 1. Material D 2. Material D 3.

SERIES I (*b*).—Flame tests, 2 seconds' contact. Material *once washed.*



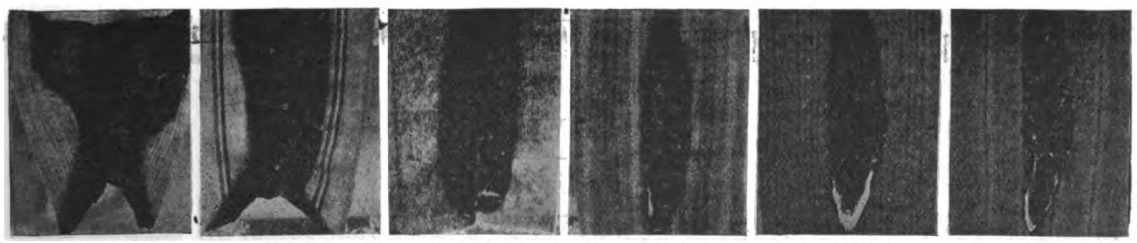
Material A. Material B. Material C. Material D 1. Material D 2. Material D 3.

SERIES I. (*c*).—Flame tests, 2 seconds' contact. Material *twice washed.*



Material A. Material B Material C. Material D 1. Material D 2 Material D 3.

SERIES I. (*d*).—Flame tests, 2 seconds' contact. Material *thrice washed.*



Material A. Material B. Material C. Material D 1. Material D 2. Material D 3.

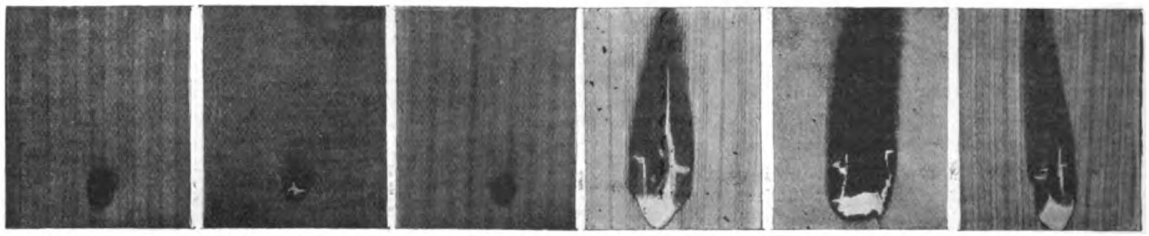
Sample F 1, Price 8¾d. per Yard.

The following is taken from an advertisement of this material:—"The safest substitute for flannel. Non-flashable, healthy, pure, warm and safe." A press opinion of this

material is quoted as follows:—"It is highly satisfactory to meet with a home-manufactured fabric that is absolutely non-flashable. ..... F 1 claims these qualities and is in every way equal to flannel."

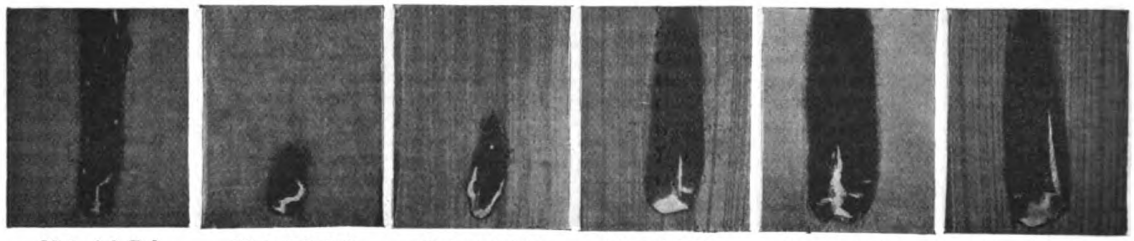
Results of tests.—The photographs of the material submitted to the flaming test described, Series II., show that it is decidedly inflammable, but its inflammability does not appear to increase after washing. An exception to this occurs in row (*d*), in which the fabric is seen to have flared badly. In these circumstances we cannot regard the material as "safe."

SERIES II. (*a*).—Flame tests, 2 seconds' contact. Original material *unwashed*.



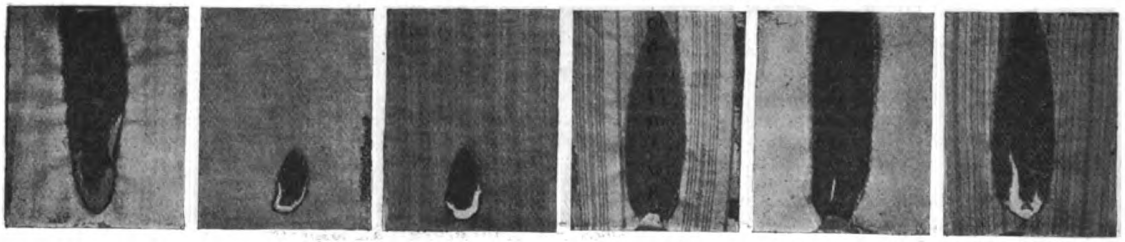
Material D 4. Material D 6. Material D 7. Material E. Material F 1. Material F 2.

SERIES II. (*b*).—Flame tests, 2 seconds' contact. Material *once washed*.



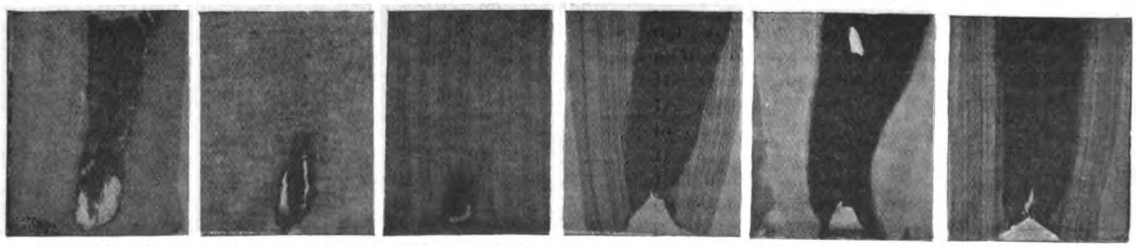
Material D 4. Material D 6. Material D 7. Material E. Material F 1. Material F 2.

SERIES II. (*c*).—Flame tests, 2 seconds' contact. Material *twice washed*.



Material D 4. Material D 6. Material D 7. Material E. Material F 1. Material F 2.

SERIES II. (*d*)—Flame tests, 2 seconds' contact. Material *thrice washed*.



Material D 4. Material D 6. Material D 7. Material E. Material F 1. Material F2.

Sample F 2.

This was sent in by the manufacturers in response to an invitation to do so. They made the following statements amongst others in regard to the fabric: "We wish specially to point out to you that we do not claim any specially fire-resisting qualities for this cloth, but what we do claim is that it is not dangerous as regards fire. It is made wholly of cotton which is a combustible article. The object we had in front of us when bringing out this cloth was to produce a material that was not dangerous. Should the cloth come in contact with a flame it would not instantly become alight from end to end, and in fact would not burn any quicker than ordinary plain calico. ..... We think we can claim for this cloth that it does not flash. That it will not burn too readily. That should it get alight it is easily extinguished; that should a lighted match be thrown on the cloth it does not flame but singes; that it is quite as safe as any ordinary calico, whilst in addition it has more warmth and is more comfortable than calico."

Results of tests.—It will be seen that when the original unwashed specimen of this cloth was subjected to our test

the flame was not a serious one, it converged almost to a point, and did not spread. In fact, the flame very nearly went out. But as soon as the washed fabric was experimented with the flame showed serious dimensions and progress. In row (*d*) in particular the result showed a spreading and upward progress of the flame. We think that the results of these experiments hardly justify us in saying that the material may be counted upon as safe.

Summary of Results.

It will be seen that out of the 12 specimens of fabric tested 7 may be classed as undoubtedly safe, 4 must be classed as unsafe, and 1 as doubtful. The "doubtful" one and the "unsafe" ones owe this classification, we think, to the fact of their increasing tendency to flare when the material is washed. The effect in this way of washing may be due to fire-proofing substances being removed or to a "fluffing" of the fabric, the washing process tending to loosen the fibres. The question whether fire-proofing materials are employed to render the fabric safe receives light by the determination of the mineral matter in the washed and unwashed fabric.

In the table given below will be found the mineral constituents of the fabrics which were tested as regards their inflammability by the method above described. The results show the percentage amount of mineral matter or ash remaining upon a clean incineration of the fabric both before and after washing.

Table Showing the Mineral Constituents of "Safe" and "Unsafe" Flannelette before and after Washing.

Fabric.	Original ash.	Ash after washing.	Percentage of residual ash.	Percentage of ash washed out.	Classed as "safe," "unsafe," or "doubtful."
A	5·61	0·21	3·75	96·25	Unsafe.
B	2·41	0·18	7·50	92·50	,,
C	2·18	0·81	37·16	62·84	Doubtful.
D 1	11·49	9·83	85·56	14·44	Safe.
D 2	11·69	7·66	65·53	34·47	,,
D 3	12·49	9·00	72·00	28·00	,,
D 4	18·73	8·86	47·30	52·70	,,
D 6	20·77	17·50	84·26	15·74	,,
D 7	21·35	15·15	70·20	29·80	,,
E	0·68	0·52	76·50	23·50	,,
F 1	8·86	0·20	4·50	95·50	Unsafe.
F 2	1·87	*Nil.*	*Nil.*	100·00	,,

It will be seen that there is an enormous variation in the amount of ash in different flannelettes. As a minimum the figure 0·68 per cent. is given, and as a maximum 21·35 per cent. The series marked by the letter "D" are all evidently flame-proofed by mineral material, and it is interesting to notice that with the increase of this loading so does a reduction occur in inflammability. As examples of this may be quoted the materials "D 6" and "D 7," Series II., which as regards non-inflammability give the most favourable results, but more particularly on washing, there being little if any increased tendency to burn, even after a third washing with soap and water. There can be little doubt, therefore, that "safety" can be obtained by impregnating the fabric with certain mineral salts, but when their amount reaches one-fifth part of the fabric it may well be asked whether this does not interfere with what may be called the "cloth-like" character of the garment. At any rate, it adds to the cost of the fabric, while it is conceivable that the insulating power of the cotton fabric is reduced. The mineral salts used appear to be present in real combination with the cellulose of the fabric, so that it is hardly likely that they would affect the wearer injuriously, and a long practical trial by wear of such treated material would appear to support this view, no irritating effects or harm to the health having been experienced over the experimental period. It has been suggested that the public should be enjoined to do the fireproofing for themselves by means of such substances as alum or borax, but common sense dictates the hopelessness of such an appeal. We may accept the evidence given before the Coroners' Committee in regard to the improbability of the poor women, whom the matter most concerns, going to the expense and trouble of using fireproofers as often as any article has been washed, besides which the question of the harmlessness of uncombined alum or borax next the skin is open to doubt.

An alternative method to fireproofing the fabric by the impregnation of metallic salts has evidently engaged the attention of flannelette manufacturers since the dangers of flannelette were brought into painful public prominence. This consists in reducing the looseness of the fabric and the nap or pile, which, as we have already pointed out, is the dangerous starting-point of a conflagration. A surface of loose cotton-wool, so to speak, burns with the facility and fierceness of spirit of wine. A close nap and a closely woven foundation seem to us to be a very desirable aim, and we have evidence in front of us that very valuable advances have been made in this direction. We have examined fabrics, at at events, which, according to some of the experiments above recorded, showed a very considerable improvement upon ordinary flannelette in regard to a reduced tendency to ignite, and yet which were not fireproofed by minerals. It is not possible to say, however, that these materials are at present as trustworthy in regard to safety from fire as the fabrics which are fireproofed by well-known fireproofing agents, for even the nap or "fluff" of the fireproofed material fails to catch fire on contact with a flame. We are in entire agreement with two conclusions of the Coroners' Committee, that (1) "great improvement has already been made in the manufacture of flannelette and further improvements may be anticipated," and that (2) "there is also the possibility that new and cheaper methods of diminishing the inflammability of the material may be discovered."

The present position is, however, unsatisfactory, for it is clear from our investigation that not only is flannelette still sold at large with no pretensions to being non-inflammable, but flannelette is sold also to the public which wrongly claims to be non-inflammable. This should be, it seems to us, a matter for immediate legislation, and we fail to understand why, in view of the strong recommendation of the Coroners' Committee to make penal the false description of an inflammable material, the matter has not been brought by the State promptly within the operations of the Merchandise Marks Acts. It should be remembered that all this time the matter is being discussed the number of victims to the inflammability of flannelette does not diminish. There is evidence, in fact, of an increasing toll.

ROYAL SOCIETY OF MEDICINE.

Annual General Meeting.

THE annual general meeting of the Royal Society of Medicine was held at the society's (temporary) house, 15, Cavendish-square, W., on July 7th, Sir HENRY MORRIS, Bart., the President, being in the chair.

The Report of the Council.

Dr. ARTHUR LATHAM, senior honorary secretary, read the report of the council for the year 1910–11. This showed that the membership of the society was now—Fellows, 2327; and members of sections, 919. Good progress was reported in the building of the society's new house, which was commenced on Dec. 1st, 1910, and which the builders are under contract to complete by December of this year. The finances of the society should be in a wholly satisfactory condition provided that the amount required for the new building was subscribed. The donations to the building fund were as follows: Received, £8982; promised, £2356; debentures presented, £1450; total, £12,788. The amount still required is over £17,000.

In the honorary treasurers' report to the council presenting the income and expenditure account for the year ending Sept. 30th, 1910, the treasurers note that the subscription income continues to increase. This amounted during that year to £8183 11*s.*, as against £7958 1*s.* 4*d.* for the preceding year. On the expenditure side there has again been a large increase, in great part due to the rent (at the rate of £800 per year) payable for temporary premises, 15, Cavendish-square, and to the amount paid for the use of meeting-room at 11, Chandos-street. The cost of the Proceedings was £2345 19*s.* 5*d*, being £247 2*s.* 6*d.* less than in the previous year. £965 17*s.* were spent upon the purchase and binding

of books and periodicals for the library, a diminution of £107 2s. 1d. The credit balance amounted to £202 6s. 5d.

The honorary librarians' report to the council shows that the work in the library during the past year has been satisfactory. 2537 books and pamphlets have been added. Of these, 691 are volumes of periodicals taken regularly and 305 are purchases, including nine periodicals which are new, or were needed for the completion of sets. The remaining 1541 are donations, including some duplicate sets of periodicals and pamphlets already in the library. 808 volumes have been bound. The number of readers has been 6693, a slight falling off from last year, which is probably accounted for by the cramped accommodation in the society's temporary house. The number of books borrowed has been 6805, and is about the same as in previous years. The report closes with the satisfactory news that Mr. J. Y. W. MacAlister, the secretary of the society, is recovering from a serious operation which he has recently undergone.

Sir WILLIAM S. CHURCH, Bart., K.C.B., senior honorary treasurer, explained the accounts, and the following motion was then carried unanimously:—

That the report of the council for the year 1910–11, together with the audited annual accounts for the year 1909–10, be received and adopted.

The following were elected officers and members of council for 1911–12:—President: Sir Henry Morris, Bart. Vice-Presidents (being the Presidents of the various sections): Dr. W. J. McCardie (Anæsthetics), Mr. G. H. Thompson (Balneological), Dr. G. A. Sutherland (Children), Sir William Osler (Clinical), Sir Malcolm Morris (Dermatological), Mr. Archibald D. Reid (Electro-Therapeutical), Dr. Theodore Thomson (Epidemiological), Dr. StClair Thomson (Laryngological), Dr. Frederick Taylor (Medical), Dr. F. W. Mott (Neurological), Dr. Amand Routh (Obstetrical), Mr. H. Lloyd Williams (Odontological), Dr. W. Milligan (Otological), Dr. R. T. Hewlett (Pathological), Mr. Clinton T. Dent (Surgical), and Dr. W. E. Dixon (Therapeutical). Honorary treasurers: Sir William Selby Church, Bart., and Sir Francis H. Champneys, Bart. Honorary librarians: Mr. Rickman J. Godlee and Dr. Norman Moore. Honorary secretaries: Dr. Arthur Latham and Mr. Herbert S. Pendlebury. Other members of council: Sir William Allchin, Dr. R. A. Gibbons, Mr. J. Warrington Haward, Dr. W. P. Herringham, Mr. R. Clement Lucas, Mr. D'Arcy Power, Dr. H. D. Rolleston, Mr. Charters J. Symonds, and Mr. E. F. White.

Mr. F. W. Lord, chartered accountant, was re-elected auditor to the society for the year 1911–1912.

Presidential Address.

The PRESIDENT then addressed the meeting on the work and prospects of the society. He referred to the difficulties with which the work had been carried on owing to the cramped space in the temporary premises at Cavendish-square; of the 118 meetings 42 had been held in the rooms of the Medical Society. On account chiefly of the difficulty of obtaining a suitable room no general discussion of the society had been held during the present year. Many of the sections, however, had had meetings, at which discussions of general interest had been held; among these he mentioned discussions on Syphilis in Relation to Otology and on Injuries of the Ear by the Otological Section; discussions on Fractures in the Neighbourhood of the Joints, on the Treatment of Cleft Palate, and a meeting was devoted to papers on Traumatic Myositis Ossificans by the Surgical Section; a discussion on Cæsarean Section and its Alternatives by the Obstetrical and Gynæcological Section; a discussion on Albuminuria in Adolescence by the Medical Section; the Samuel Hyde Memorial Lectures by the Section of Balneology and Climatology; and a discussion on Frontal Sinus Suppuration by the Laryngological Section. With regard to the new building there was every prospect that it would be completed by Dec. 1st next, this being the date fixed by the contract with the builders. Sir Henry Morris hoped that the deficiency of £17,000 on the building fund would be made up before the opening of the new building. If not, it would be necessary to borrow the sum, and though the society would not in that case be in financial straits, as the interest on this sum would be counterbalanced by the saving in rent, which was now paid for the temporary premises, yet the society would be hampered in providing many of the advantages for which it was instituted. For instance, in addition to the fine lending library now owned by the society provision of a standard reference library was obviously of the first importance. It would be a great boon to Fellows, too, if it could be found possible to arrange that they might be provided, at request, with abstracts of papers, &c.; this privilege was already given to Fellows residing abroad, and had been much appreciated by them. Altogether, then, he thought it might be said that the work of the society was being maintained at a good level, and no one could doubt the great usefulness and distinction of the services which the society rendered. Under those circumstances, it was gratifying to know that in a very few months they would be in a building worthy of the society, of its distinguished national and metropolitan position, and of the character and importance of the work which it carried on. At the same time, however, money was wanted, the occasion was exceptional, and the opportunity was very fitting to ask all Fellows and Members to do what they could to secure that measure of pecuniary support which would enable the society to be placed in a firm and sound financial position. He felt sure there were a large number of Fellows and Members of the society who could, if they would, render very material assistance at this juncture, and who probably by their personal influence upon others who were not members of the profession might induce them also to give the society support. Nobody could deny that there were good grounds for asking those outside to assist a large institution of national and scientific importance such as the Royal Society of Medicine, and they were not exceptional in taking that course. During the last few days the Royal Geographical Society had put forth, through its distinguished President, a claim for support, not only from Fellows of the society, but also from the friends of the society and from the over-sea members of this empire who were in this country at the present moment. Lord Curzon pointed out that although there were 5000 Fellows in the Geographical Society, most of them were not wealthy and had therefore appealed to the public to come forward to assist that society. There were many reasons why the Royal Society of Medicine, which was a national as well as a metropolitan institution of a very marked and useful order, should do the same. But Sir Henry Morris pointed out that to the Fellows and Members of the society must they look chiefly for the money to wipe the deficit off their present building fund.

The meeting closed with a unanimous vote of thanks to the retiring Vice-Presidents.

THE VALUE OF SANATORIUM TREATMENT.

WE are indebted to the Executive Committee of the Welsh National Memorial to King Edward VII. for the following memorandum on the functions of sanatoria which has been prepared at their request for general circulation in the Principality:—

"The public has formed a wrong impression of the value of sanatorium treatment, for it has not grasped the facts which prove that, in many cases, owing to the severity of the disease present, it must be useless; that in a few instances it is actually harmful; and that in may cases this method of treatment need not be carried out at an institution. Again, a number of people are under a misapprehension as to the meaning of sanatorium treatment. In many quarters it is considered to be synonymous with an existence under open-air conditions, together with an excessive supply of nourishing food. Fresh air and food play an important part it is true, but the cardinal factor in the treatment is the constant and skilled regulation of the amounts of rest and exercise prescribed from day to day for each individual patient.

"In order that these misapprehensions may be cleared away it is necessary to point out what takes place during the arrest of consumption in a given patient, and what are the principles of treatment. Consumption, as is well known, is due to the presence of minute organisms—called tubercle bacilli—in the lungs. The only protection we have against these invaders is what may be termed comprehensively the defensive forces of the body. What these forces are we do not exactly know, but they have representatives in the blood and other fluids of the body, the tissue cells, the blood cells, &c. There is no drug which has a specific action upon

tuberculosis. The vaccine known as tuberculin has a specific action, but there are a number of limitations to its power; one which may be mentioned here is that in many cases of consumption we have to deal not only with the tubercle bacillus, but also with other organisms against which tuberculin exerts no protective action."

"The defensive forces of the body successfully combat and defeat the tubercle bacillus in an overwhelmingly large proportion of cases. That this is so is shown by the result that practically every man or woman over 35 bears evidence—available after death—of having suffered from tuberculosis. In the vast majority of these cases the tubercle bacillus has been routed, and this even without the individual ever knowing that he has contracted the disease.

"What determines whether the defensive forces or the bacilli are to prove victorious? Naturally the defensive forces must be put in the best possible condition to fight. They require a constant supply of pure fresh air. Wind should also be avoided, as it increases the tendency to cough. Again, the defensive forces require a proper supply of good nourishing food with sufficient fatty food, such as milk, cream, butter, potatoes, &c., together with a careful regulation of the digestive processes. These requirements do not of course in themselves necessitate a sanatorium, but, in the majority of cases amongst the working classes, it is difficult to provide them except in such an institution.

"The chief reason which makes treatment in an institution a necessity is the need for constant supervision. This can only be explained by a consideration of certain pathological processes. The bacilli manufacture a poison called tuberculin. This poison has a local effect on the lung in which they are present, causing destruction of tissue and so leading to cough, expectoration, blood-spitting, and the signs detected by the stethoscope. The local action of the poison also stimulates a response from the local defensive forces. A more important fact is that some of the poison manufactured by the bacilli is absorbed by means of the lymph stream into the general circulation of the blood. If this poison in the blood-stream is in excess of the powers of the defensive forces of the body to deal with, it leads to lassitude, loss of appetite, loss of weight, sweating, and fever.

"If the dose of poison absorbed is a small one the defensive forces of the body are stimulated to attacking the bacilli. They go to the seat of conflict, surround the bacilli, and, as the result of repeated stimulation by further small doses of poison, eat up the weakened bacilli, and so in time arrest the disease. If the dose of poison is a larger one than the defensive forces can deal with, the latter are overpowered; the bacilli are left in command, multiply, cause the disease to spread in the lung and pour out more poison, which, as already said, leads to fever, sweating, loss of weight and appetite, and all the distressing symptoms of advancing consumption.

"Treatment must obviously be directed, then, to keep the dose of poison absorbed from the diseased area into the blood at such an amount that it stimulates and does not paralyse the defensive forces of the body on which we are so dependent. The amount of poison absorbed depends in large part upon the amount of lymph and blood which goes through the diseased portion of the lung in a given time. A larger quantity of lymph and blood must automatically sweep out a larger quantity of poison. The quantity of lymph and blood which goes through the lung in a given time depends largely on the physiological law that the more work an organ has to do the greater must be its supply of blood and lymph. If a lung moves more than usual, as in coughing, it receives immediately a larger supply of blood. If a man walks several miles, more blood and lymph will go through his lung, and consequently, in the case of a diseased lung, more poison will be swept out than if he lay quietly on a sofa during the same period of time. Movement therefore determines the quantity of blood and lymph which goes through the lung; this in turn determines the amount of poison swept into the general circulation, and this again determines the task which the defensive forces have to meet. In treatment, therefore, if the bacilli are not to be allowed to spread, and the disease to extend, the amounts of rest and exertion must be carefully and constantly regulated according to the ever-varying symptoms of the patient.

"It follows that in all cases of consumption where the dose of poison absorbed is capable of being in excess of the powers of the defensive forces—that is, in the majority of such cases in the class chiefly affected by the Insurance Bill—constant skilled medical supervision is only possible in the institution which is usually called a sanatorium. It also follows that this constant supervision is not so essential in cases in which the defensive forces are fully capable of dealing with the poison absorbed into the general circulation. Cases of consumption may be roughly divided into four classes.

"*Class 1.*—Those patients who become infected and recover without knowing that they have been infected. In these the dose of poison absorbed is practically never beyond the capacity of the defensive forces, and so acts as a stimulant.

"*Class 2.*—Those who would recover if given a holiday at the seaside or some measure of outdoor treatment. In these cases the defensive forces want assistance. The insanitary conditions, want of food, &c., under which the patient lives diminish the capacity of his defensive forces and so enable the bacilli to make further inroads. When the patient is removed from these devitalising conditions his defensive forces automatically become able to fight better, and to deal adequately with such doses of poison as may be absorbed. Consequently, in such cases, were we in a position to gauge the exact condition of affairs, treatment in a sanatorium would be unnecessary. This in the majority of instances we cannot do. It is the best policy, therefore, to send such cases to a sanatorium in the first place. When such supervision is possible, the duration of treatment will, of course, be much shorter than in the case of those who properly come under Class 3.

"*Class 3.*—Those who need careful treatment in a sanatorium. In this class the dose of poison is generally greater than the capacity of the defensive forces, and therefore the amounts of rest and exercise to be taken require constant supervision.

"*Class 4.*—Those who are going to die from infection, whatever may be done for them. This failure is probably due to (1) the incapacity of the defensive forces to respond; (2) the excess of the absorbed poison even in absolute rest is beyond the capacity of the defensive forces. These conditions can be ascertained only after skilled and close observation.

"It is clear, then, in the treatment of cases of consumption in which recovery is not going to occur spontaneously, the defensive forces require careful nourishment in the shape of fresh air and good food, and, above all, the amount of rest and exertion must be carefully regulated from hour to hour. It does not require much thought to see that, in a national campaign dealing with persons whose income is below £160, treatment in efficient sanatoriums is a vital necessity. It is asserted that tuberculin, used in dispensaries for patients who continue to work, gives results as good or better than treatment in a sanatorium. Treatment by tuberculin in Class 1 or in Class 2 is well known to give excellent results, but so does practically any other form of treatment. In Class 3, where doses of poison are on the whole in excess of the capacity of the defensive forces, tuberculin cannot safely be used except under *constant* supervision. If the regulation of the absorption of a man's own poison—his own tuberculin—requires constant supervision it follows that the administration of prepared tuberculin requires the same close observation.

"The success of the so-called tuberculin dispensaries rests largely on the fact that Class 1 and Class 2 are chiefly treated at them. A further part of their success is due to the many instances in which the diagnosis of the presence of active disease is faulty, with the result that many persons are treated with tuberculin and labelled as cures, in whom the disease has previously been arrested. The fact that the physicians attached to the hospitals for diseases of the chest send their patients to sanatoriums is a strong testimony to their usefulness, for it is much more lucrative to the physician to give tuberculin than to send patients to be treated elsewhere. Of the value of tuberculin there is no question. Its use is of great value, not only in Class 2, but also in Class 3—i.e., in patients who require sanatorium treatment. We come, therefore, to the conclusion that neither sanatorium treatment nor tuberculin should be depended upon solely, but that both should be used under conditions which facilitate the closest supervision.

"If sanatorium treatment has not hitherto met with universal acceptance as efficacious in a campaign against consumption, the mistrust is due to a number of causes. In the first place, the majority of existing so-called sanatoriums are inefficient, and the treatment given is not 'sanatorium treatment,' but a treatment in an institution labelled a sanatorium, and consisting of little more than fresh air and abundance of nourishing food, but without adequate medical supervision and the necessary regulation of rest and exercise. The results obtained by these inefficient sanatoriums have been regarded by the public, and by many members of the medical profession, as the results of efficient sanatorium treatment, and have done much to discredit it. The second reason is that sanatorium treatment has been asked to do the impossible, and has been regarded in some quarters as sufficient in itself and as a certain cure for every case of consumption. No responsible member of the medical profession, no level-headed layman, has ever regarded the treatment in this light. The sanatorium is an important link, but only a link, in a comparatively long chain. Unless it forms a part of a carefully thought out system, embracing amongst other things dispensaries, hospitals, homes for advanced cases and the dying, careful disinfection, and after-care of patients when they leave the sanatorium, together with assistance to the breadwinner's family whilst he is under treatment, it cannot help us much to eradicate consumption. Even sanatorium treatment does not cure all forms of pulmonary tuberculosis, and we can scarcely anticipate that any form of treatment ever will prove very efficacious in advanced and long-standing disease. Is it fair to condemn sanatorium treatment because it cannot accomplish the impossible? Again, if a working man in an early stage of consumption is sent to an efficient sanatorium there is every prospect of the disease being arrested; but if he is allowed to return to those conditions under which he contracted the disease—hard work, bad air, insufficient food—the disease will almost certainly relapse. Is it fair when this happens to say that sanatorium treatment is of no avail?

"The third reason is the fact that in the past the erection and maintenance of sanatoriums have cost far too much. This objection no longer holds, as, apart from the cost of land, a sanatorium of a permanent character can be erected and equipped for a little over £100 a bed. The cost of maintenance and administration should amount to rather less than 25*s.* a week per patient. The fourth reason has been the difficulty of making such arrangements for maintaining the family when the breadwinner is away, that the patient may be persuaded to go to a sanatorium early enough, and to stay long enough. Much of the difficulty, however, should be swept away by an intelligent administration of the Insurance Bill.

"Sanatorium treatment, as a link in a chain, confined to those who are capable of being cured within a reasonable period, and supervised by a competent and special trained medical man with administrative capacity, is one of the most valuable offensive weapons we have to-day in our fight against consumption. We have shown that its value in the past has been obscured for several reasons—the inefficiency of many sanatoriums, improper selection of cases, inadequate length of treatment, inadequate 'after-care,' and the like. In the future most of these defects should be removed by efficient administration. In the past many men did not apply for treatment because they knew there was no likelihood of it being obtained in time, as the sanatorium accommodation was insufficient for more than about 1 per cent. of the consumptive population. Under the new Act there should be much greater accommodation; and this in itself should do much to secure treatment in the earlier stages of the disease, and to rehabilitate sanatorium treatment in the opinion of the general public."

(Signed) CLIFFORD ALLBUTT.
LAUDER BRUNTON.
ARTHUR LATHAM.
WILLIAM OSLER.

NEW NURSING HOME FOR EDINBURGH.—The subscription list opened for the building of a nursing home for patients of limited means has been most cordially supported. The sum required is £10,000, and of that amount £8640 8*s.* 11*d.* have been now subscribed.

FIFTY-THIRD ANNUAL REPORT OF THE GENERAL BOARD OF COMMISSIONERS IN LUNACY FOR SCOTLAND.[1]

Total Number of Insane.

ON Jan. 1st of the present year there were, exclusive of insane persons maintained at home by their natural guardians, 18,636 persons of whom the Board of Commissioners had official cognisance. On Jan. 1st, 1910, the number was 18,337, so that an increase of 299 has taken place during the past year. These figures include inmates of training schools for imbecile children and criminal lunatics. Among registered lunatics—that is, not including inmates of schools or criminal lunatics—there was a total increase of 267, of which number 13 were private patients and 254 were pauper patients. In the Criminal Lunatic Department of Perth Prison there were three more patients than last year and in the training schools there were 29 more children. Decreases among pauper lunatics, amounting in all to 58, have occurred in 11 counties, while increases, amounting in all to 312, have taken place in 27 counties or urban areas. The decreases are distributed among counties with falling populations, while the increases have mainly occurred in industrial counties with increasing populations. It should be noted that the increases are not necessarily due to a larger number of patients being sent to asylums, for they are equally certain to arise through accumulation whenever a falling off occurs in the number of the discharged.

Admissions.

The total number of persons admitted to asylums and other establishments, excluding transfers, was 3312. The number admitted to private establishments was 506, being 10 more than in the preceding year, but 53 less than the average for the years from 1905 to 1909 The number of pauper patients admitted was 2806, being 53 more than the number during the previous year, and 84 below the average for the years 1905 to 1909. With regard to the admission of voluntary patients, the Commissioners are able to state that nothing has occurred to indicate any disadvantage traceable to their presence in asylums, and they continue to be of opinion that it is a useful provision of the law which permits such persons to place themselves under care. At present the process whereby patients can be admitted, although simple, involves a certain amount of delay, which has resulted on more than one occasion in serious consequences, and the Commissioners are therefore in favour of a change in the law which would permit of a person being received into an asylum and being kept there for three days on his own written application to the superintendent, provided that the sanction of the Board be at once applied for in the usual way on admission, and that no voluntary boarder be retained for any longer period than three days without such sanction.

Discharges.

During the year 1910 there were discharged recovered 215 private patients—that is, 14 below the average for the five years 1905–09. The number of pauper patients discharged recovered was 1031, which is 120 less than the average for the five years 1905–09. It appears that during the last 30 years, while the proportion of recoveries among private patients has varied from year to year, it has shown no certain indications of falling off. Among pauper patients a continuous decrease is recorded. The Commissioners are of opinion that the recovery rates have in recent years been unfavourably affected by the increased use of observation wards connected with the parochial hospitals of several large parishes which receive persons suffering from passing attacks of mental disorder, of whom some, in the absence of these wards, would have been admitted to asylums and would have been discharged recovered shortly after admission. The lowering of the rate is further to be ascribed to the accumulation of chronic patients and to the fact that the development of nursing and the improved means of hospital care in asylums have led to their being more freely used for the reception of patients whose age and whose

[1] London: H.M. Stationery Office. Price 1*s.*

mental and physical condition are such as to preclude hope of recovery.

The number of private patients discharged unrecovered was 112, which is 37 less than last year and 25 below the average of the five years 1905–09. The number of pauper patients discharged unrecovered was 375, which is 6 more than the number so discharged in the preceding year and 35 less than the average for the five years 1905–09. The proportion of patients discharged unrecovered to the average number resident has been steadily falling for the past 26 years and last year reached its lowest point. With a falling admission-rate and an increased death-rate this is a matter to be regretted, as the resident population of asylums ought to have fallen rather than to have increased, as has on the whole been the case. There is reason to believe that the cause may be sought in the fact that the general fall in the numbers admitted has either left vacant beds or diminished the pressure upon the accommodation, and has thus removed a strong stimulus towards the discharge of chronic harmless patients. The experience of the Board has shown that there is no greater inducement towards the removal of patients who have ceased to require asylum care than the occupation of beds to an extent which threatens the necessity for further building, and, on the other hand, that there is nothing more likely to cause inactivity in the discharge of patients than the existence of an undue number of empty beds.

Death rate.

The number of private patients who died during the year was 163, which is 46 less than in 1909 and 28 less than the average of the five years 1905–09. The number of pauper patients who died was 1181, which is 3 less than in 1909 and 25 above the average of the five years 1905–09. The death-rate remains at about the level at which it has stood for many years past.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

THE annual general meeting of this association was held on July 6th in the council chamber of the British Medical Association.

The minutes of the last general meeting were read and confirmed. A letter was read from Dr. W. Brown (Bristol) intimating that an invitation would shortly be received from the Lord Mayor of Bristol to hold the next annual meeting in that city. The annual report of the council for the year and the balance sheet were received and adopted. The officers for the preceding year were then re-elected: Surgeon-General G. J. H. Evatt, C.B., President; Mr. D. B. Balding, chairman of council; Mr. A. A. Napper, treasurer; Dr. Major Greenwood, honorary secretary; and Mr. A. Withers Green, auditor.

Dr. MAJOR GREENWOOD then read a paper on the National Insurance Bill and the Poor-law Medical Service, on which an interesting discussion took place. Dr. Greenwood viewed the position of Poor-law medical officers under the Bill with extreme apprehension. He suggested that in some ways even the Minority Report scheme would be preferable. Dr. A. E. LARKING (Buckingham) said he thought the views of Dr. Greenwood were too pessimistic. He thought that the Poor-law Medical Service on the present lines would be improved, and he disagreed entirely with the proposal that it should be made a whole-time service. The agitation about "choice of doctors," in his opinion, was a craze, but he agreed that the policy of the British Medical Association should be strictly adhered to.—Mr. W. HOLDER (Hull) also considered Dr. Greenwood's views too gloomy. If capitation fees were paid for his paupers at the rate proposed by the Bill, he would get about £500 a year. He disagreed with a system of whole-time officers. It was a mistake in the Education Department to have whole-time officers.—Mr. GEORGE JACKSON (Plymouth) said that "free choice of doctors" would not injure the present club medical officers, if they had done their work properly in the past. They would certainly be selected by most of their former patients.—The PRESIDENT thought the National Insurance Bill should not be regarded as being put forward by Mr. Lloyd George, but by the rising democracy, and believed that medical men would not be injured thereby. He said there had been similar denunciations of changes that had taken place in his time in the army, but the army medical officers had come out all right, as would the Poor-law medical officers.—Dr. GREENWOOD said he could not help being pessimistic. The whole profession of the country was so at the present time. Some of those who had spoken seemed to suggest that he favoured whole-time appointments in the Poor-law. He did nothing of the kind. Again, the views of the Minority Commissioners, which he thought should be reconsidered, did not necessarily imply whole-time appointments. They could be worked by part-timers. It was only implied that Poor-law medical officers and sanitary medical officers must be under the same authority. He must confess he had always hitherto consistently opposed such union, but that was before this Bill appeared.

Dr. R. A. LYSTER read a paper on the Organisation of the Poor-law Medical Service and Public Health Service as a uniform institution. He said that treatment and prevention cannot be separated. The medical work now done by Poor-law authorities should be made part of the Public Health work of the district.—Mr. HOLDER supported the view that the Poor-law medical service and the sanitary medical service should be under the same authority. He thought there would be an increase in the number of offices, not a lessening.—Mr. JACKSON pointed out the impossibility of whole-time medical officers in sparsely populated districts.—Mr. T. LLOYD BROWN thought it was not just to speak of the perfunctory character of much of the Poor-law medical work. Similar complaints were made of much of the work of sanitary medical officers. It often happened both in Poor-law and sanitary work the medical officers were practically unable to do anything with the means in their power.—Dr. LARKING did not agree with Dr. Lyster in placing Poor-law medical officers under the sanitary authority. He would keep preventive and curative work absolutely apart, and under different authorities. The Poor-law medical service should be under a Public Assistance authority. There was, further, a great disparity in the number of Poor-law unions and sanitary authorities throughout the country.—The PRESIDENT said he did not agree with Dr. Larking. The mixing sanitary duties with Poor-law would mean extra payment for Poor-law medical officers. Proper sanitary administration was only beginning. He thought it would be much better for a single authority to direct the Poor-law and sanitary medical services. He thanked Dr. Lyster for his admirable paper.—Dr. MAJOR GREENWOOD also considered the arguments put forward by Dr. Lyster to be very strong, and he was glad he had specially emphasised that there was no idea of putting Poor-law medical officers under sanitary medical officers; that they would work together on terms of perfect equality. He must confess he had always been a strong opponent of the single authority plan, being in agreement with Dr. Larking in this matter. The present Bill, however, had made a radical alteration in everything, and it was justifiable to change opinions in the circumstances. He had been very pleased to hear Dr. Lyster's condemnation of a recent proposal of the Local Government Board that part-time medical officers of health should be made whole-timers by having given to them most of the other part-time medical posts now held by general practitioners, such as the Poor-law medical appointment, that of public vaccinator, factory surgeon, police surgeon, and postal medical officer.—Dr. LYSTER, in replying, expressed his appreciation of the way his paper had been received and the sympathy shown for many of his views. He strongly deprecated the notion that there would be any inequality between Poor-law and sanitary medical officers, and, for his part, he would rather serve under a professional principal than a lay one, as was the case of nearly all Poor-law medical officers, who practically were subordinate to the various clerks of the unions.

EXTENSIONS AT ABERDEEN CITY HOSPITAL.—Two open-air shelters for the treatment of tuberculous cases are being erected at the Aberdeen City Hospital. One of these will accommodate 15 male patients, and the other 8 or 10 female patients. Each will have a small dressing-room and bath-room attached. The shelters are of wood on brick foundations. It is hoped that they may be utilised by persons who may only sleep there during the night, going out to attend to their work throughout the day.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON July 6th the Fellows of the College had to elect two members of Council. Usually there are three vacancies, but as Sir Henry Butlin, one of those whose terms should have expired on July 6th, is President, he obtains another year of office. Mr. C. T. Dent and Mr. G. H. Makins were the two retiring members of Council and offered themselves for re-election, and Mr. B. G. A. Moynihan of Leeds was also a candidate. 735 Fellows voted by post, and there were seven personal voters; only one voting paper was spoilt, but two arrived too late. The result of the poll was as follows:—

	Votes.	Plumpers.
Mr. G. H. Makins	575	57
Mr. C. T. Dent	401	24
Mr. B. G. A. Moynihan	334	92

At the conclusion the PRESIDENT announced that Mr. Dent and Mr. Makins had been re-elected members of the Council.

The election was peculiar in that there was no real vacancy, for each of the two retiring Fellows offered himself for re-election.

We think it fortunate that both Mr. Dent and Mr. Makins were returned, for they are useful members of Council and have done good work there. Mr. Moynihan, from his position as a surgeon, thoroughly deserves a seat on the Council, and we believe that he would have been returned if a real vacancy had existed. Should he offer himself later as a candidate, we do not doubt that he will be elected.

MEDICINE AND THE LAW.

Rex v. *George Douglas Hay—Guilty but Insane.*

EARLY in June an unusual case of shooting, apparently with the deliberate intent to murder, attracted attention in the newspapers. The victim, Mr. Samuel Splitter, had been riding a motor bicycle near Barnet, but having run short of petrol was pushing it. The prisoner, a stranger to Splitter, riding a bicycle, met him, and after some conversation undertook to ride to Barnet and get him some petrol. Splitter accordingly seated himself by the roadside to wait, when he was suddenly assailed by his new acquaintance, who after striking him on the head produced a revolver and commenced firing at him. Splitter succeeded in escaping and had had enough opportunity for observing his assailant to be able to give a description of a young man named George Douglas Hay, from which he was arrested. The facts as to the shooting were not disputed at the trial at the Old Bailey which has now taken place, the only question for serious consideration being the state of the prisoner's mind when he committed an assault, the bare facts of which, including the absence of any motive or preliminary quarrel, were consistent with mental derangement. The evidence of Dr. S. R. Dyer, medical superintendent of Brixton Prison, was practically conclusive upon this point. He had had the prisoner Hay under close observation and was satisfied that he was of unsound mind at the time of the shooting and that this condition continued. Dr. Dyer was of the opinion that Hay suffered from impulsive homicidal mania, and he produced a remarkable document supplied to him by the prisoner which purported to record his life's history and the progress of his derangement. He was 24 years of age and had been brought up in circumstances which caused Mr. Justice Darling to suggest that he was the illegitimate son of someone who had provided a variety of temporary homes for him during early life. The document in question, which has been quoted at length in the daily newspapers, showed that the prisoner had long led a life of solitude and of close and continual introspection, varied with an attempt at self-treatment for mental malady, of the growth of which he was fully conscious. During the last two years he stated, "so excruciating became the nervous tension when in the presence of other people that I was now driven to carry my revolver with me." Needless to say, he had no difficulty in obtaining and carrying a revolver under a condition of the law against which frequent protest has been made in THE LANCET, and it was good fortune rather than any protection afforded by the legislature which saved Mr. Splitter's life. If Hay had taken an interest in politics and inspired by an insane desire to affect the destinies of his country had shot a Cabinet Minister, or had taken advantage of one of the numerous occasions in which the King and Queen have recently appeared in public, probably a strenuous effort to prevent the carrying of revolvers would have followed, but it might have been too late to avert a national disaster.

Action for Libel by a Medical Man against Another: Pocock v. Hornibrook.

In the London Sheriff's court recently an action for libel brought by a medical man against another member of the medical profession practising in the same district came before the Under Sheriff and a jury for the assessment of damages, the defendant having allowed judgment to go against him by default in the High Court. The plaintiff, Dr. A. R. G. Pocock, had practised at Beaconsfield in Buckinghamshire for nine years, and the defendant, Mr. W. Hornibrook, for five years at Gerrard's Cross. They had been acquainted with one another, and it was stated that at one time the defendant had suggested to the plaintiff, who had declined, that they should enter into partnership. On a more recent occasion, however, Mr. Hetherington, a patient of the plaintiff, called in the defendant to attend a lad in his service; and this the defendant did, but later refused to repeat the visit, and intimated that he wished the fee he had earned to be sent to Dr. Barnardo's home. In the course of a correspondence which followed this incident the defendant wrote one of the libels complained of, offering to double the gift to the institution mentioned if Mr. Hetherington could get an admission from a single medical man in Beaconsfield or Gerrard's Cross, with one possible exception, that he would be willing to attend any patient of Dr. Pocock or to meet that gentleman in consultation. The defendant was represented by counsel, who suggested that he was of an excitable nature, and in addition submitted that the plaintiff had suffered no damage. As, however, the defendant had allowed judgment to go by default in a case in which he had made a serious attack upon the reputation of another medical man in a letter written to a patient of the latter, the jury could not be expected to accept this view, and they assessed the damages at £500. Dr. Pocock's action was undertaken for him by the London and Counties Medical Protection Society, Limited.

Action for Negligence against Sherborne School.

An action of considerable medical importance was heard last week in the King's Bench Division before the Lord Chief Justice and a special jury, when the governors of Sherborne School, the headmaster, and a housemaster were jointly sued for damages by a schoolboy and his father, who alleged that through the negligence of the defendants the boy had lost his right arm. The story in brief is as follows. At the close of the winter term of 1909 the boy, who had always been delicate, was in poor health and contracted a whitlow on the left thumb, which was treated by the matron and by the school medical officer. The boy was allowed to travel home for the Christmas holidays, but on his arrival he was found by the family medical adviser to be suffering from bronchitis. The bronchitis and the whitlow both seem to have disappeared, but shortly afterwards the boy developed symptoms of septic poisoning, and the right shoulder was found to be infected. The shoulder was operated on and subsequently the elbow, and on examination the pus was found to contain a micro-organism common in whitlows. At a further operation necrosis was found, and two days later the right arm had to be amputated. The plaintiffs alleged that the infection which caused the loss of the right arm was due to the negligent treatment which the whitlow had received at school. In support of this the surgeons who operated gave evidence to show that the whitlow was wrongly treated at Sherborne, and that this had caused the subsequent mischief, although it was admitted that no record existed of osteomyelitis following a whitlow. It was claimed for the defence that there was no evidence to show that the boy's subsequent infection could be traced to the whitlow which disappeared in a few days and left no trace afterwards. They asserted that the school medical officer did all that was necessary and proper, that the treatment at school had been correct throughout, and that there

had been no negligence. Mr. Edmund Owen and Professor Sims Woodhead gave evidence that in their opinion the subsequent disease of the right arm had nothing to do with the whitlow on the left thumb, except in so far as both conditions were due to the presence of the same micro-organism. Other medical evidence for the defence was called to prove that the whitlow was subcutaneous and trivial, and that it was correctly treated at Sherborne. The Lord Chief Justice said that the questions for the jury were whether there had been any negligence on the part of the school doctor, the matron, or the housemaster; and if so whether that negligence brought about the loss of the arm? After a brief adjournment the jury answered both the questions in the negative, and the Lord Chief Justice concurred in their verdict, adding that he could not have permitted any other to stand, although he was glad that the matter had been thoroughly investigated. We think that this verdict must meet with the approval of all medical men who have carefully studied the evidence given during the four days' hearing of the action. Also we must all feel deep sympathy with the boy in his irreparable loss. Osteomyelitis is one of the most tragic diseases of early life, and its actual origin is often difficult to determine.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 8169 births and 3715 deaths were registered during the week ending July 8th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been equal to 11·3 and 11·7 per 1000 in the two preceding weeks, further rose to 12·0 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 13·8 per 1000, and in London during the same period the mean annual death-rate did not exceed 13·2 per 1000. The recorded annual death-rates during last week in the 77 towns ranged from 4·6 in Bournemouth, 5·6 in Aston Manor, 6·9 in Northampton, and 7·0 in King's Norton, to 17·1 in Burnley, 17·6 in Liverpool, 18·4 in Stoke-on-Trent, and 19·4 in Tynemouth. The 3715 deaths from all causes in the 77 towns last week showed a further increase of 92 upon the low numbers in recent weeks, and included 284 which were referred to the principal epidemic diseases, against 273 and 268 in the two preceding weeks. Of these 284 deaths, 87 resulted from infantile diarrhœa, 79 from measles, 54 from whooping-cough, 36 from diphtheria, 19 from scarlet fever, 8 from enteric fever, and 1 from small-pox. The mean annual death-rate from these epidemic diseases was equal to 0·9 per 1000, and corresponded with the rate from the same diseases in each of the two preceding weeks. The deaths attributed to diarrhœal diseases among children under two years of age in the 77 towns, which had been 88, 86, and 70 in the three preceding weeks, rose again to 87 last week, and were proportionally most numerous in Liverpool and in Merthyr Tydfil. The fatal cases of measles in the 77 towns, which had steadily declined in the preceding 17 weeks from 474 to 76, were 79 last week; the highest annual death-rates from this disease recorded in these towns last week were 1·4 in Bolton, 1·6 in Wolverhampton, and 2·8 in Great Yarmouth. The 54 deaths from whooping-cough showed a further decline from recent weekly numbers. The deaths referred to diphtheria, which had been 21 and 35 in the two previous weeks, were 36 last week, and included 14 in London and its suburban districts, 5 in Stoke-on-Trent, 3 in Manchester, and 2 both in Portsmouth and Swansea. The 19 fatal cases of scarlet fever showed a further slight increase upon the numbers in recent weeks; 5 occurred in London, 3 in Liverpool, and 2 both in King's Norton and in Rhondda. The 8 deaths referred to enteric fever corresponded with the number in each of the three preceding weeks, including 2 in London and 1 in West Ham. The fatal case of small-pox was registered in Wallasey. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased in the 12 preceding weeks from 982 to 1226, had further risen to 1264 at the end of last week; 191 new cases of this disease were admitted to these hospitals during the week under notice, against 159 and 163 in the two previous weeks. These hospitals also contained, at the end of last week, 780 cases of diphtheria, 414 of measles, 278 of whooping-cough, and 35 of enteric fever, but not one of small-pox. The 954 deaths from all causes in London last week were fewer by 9 than the number in the previous week, and included 102 which were referred to diseases of the respiratory system, against 139, 111, and 117 in the three preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 136 and 169 in the two previous weeks, declined again to 155 last week; 313 inquest cases were registered. The causes of 25, or 0·7 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in London and its suburban districts, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 50 other smaller towns; the 25 uncertified causes of death in the 77 towns last week included 6 in Birmingham, 5 in Liverpool, and 2 each in Stoke-on-Trent, Leicester, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, with an estimated population of 1,710,291 persons, 885 births and 477 deaths were registered during the week ending July 8th. The annual rate of mortality in these towns, which had been equal to 13·3 and 14·2 per 1000 in the two preceding weeks, further rose to 14·6 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 16·7 per 1000 of the revised estimate of their population, and exceeded by 2·9 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during last week in the eight Scotch towns ranged from 8·7 and 9·3 in Perth and Aberdeen to 16·2 in Glasgow and 19·4 in Greenock. The 477 deaths from all causes in the eight towns last week showed a further increase upon the low numbers in the two preceding weeks, and included 49 which were referred to the principal epidemic diseases, against 64, 58, and 63 in the three preceding weeks; of these 49 deaths, 14 resulted from measles, 14 from infantile diarrhœa, 12 from whooping-cough, 7 from diphtheria, and 2 from scarlet fever, but not one either from enteric fever or small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·5 per 1000; the mean rate last week from the same diseases in the 77 English towns did not exceed 0·9 per 1000. The fatal cases of measles in the eight Scotch towns, which had been 16 and 13 in the two previous weeks, were 14 last week, and included 11 in Glasgow and 3 in Edinburgh. The 14 deaths of infants under two years of age attributed to diarrhœal diseases were fewer by 6 than the number in the previous week; 8 occurred in Glasgow and 3 in Edinburgh. The fatal cases of whooping-cough, which had steadily declined in the five preceding weeks from 43 to 22, further fell to 12 last week, of which 9 were registered in Glasgow and 2 in Greenock. The 7 deaths referred to diphtheria showed an increase upon the numbers in recent weeks, and included 5 in Glasgow. The 2 fatal cases of scarlet fever occurred in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had been 51 and 48 in the two previous weeks, rose to 56 last week, but were 10 below the number in the corresponding week of last year. Of the 477 deaths from all causes in the eight towns last week, 151, or 35 per cent., were recorded in public institutions, and 26 were attributed to different forms of violence. The causes of 19, or 4·0 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the recent Census numbers), 556 births and 312 deaths were registered during the week ending July 8th. The annual rate of mortality in these towns, which had been equal to 13·5 and 17·0 per 1000 in the two preceding weeks, declined again to

14·2 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 17·9 per 1000; the mean rate during the same period in the 77 English towns did not exceed 13·8, and in the eight principal Scotch towns was 16·7 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 13·9 in Dublin (against 11·0 in London), 12·4 in Belfast, 15·8 in Cork, 8·9 in Londonderry, 16·3 in Limerick, and 28·5 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 16·5 per 1000. The 312 deaths from all causes in the 22 towns last week showed a decline of 62 from the number in the previous week, and included 22 which were referred to the principal epidemic diseases, against 27 and 21 in the two previous weeks; these 22 deaths were equal to an annual rate of 1·0 per 1000, slightly exceeding the mean rate from the same diseases in the 77 English towns. These 22 deaths from the principal epidemic diseases in the Irish towns last week included 8 from diarrhœa, 6 from measles, 3 from diphtheria, 2 from scarlet fever, and one each from whooping-cough, enteric fever and typhus, but not one from small-pox. The 8 deaths attributed to diarrhœal diseases were all of infants under two years of age, and included 4 in Dublin and 2 in Belfast. The 6 fatal cases of measles were fewer by 3 than those in the previous week; 4 occurred in Dublin and 2 in Cork. Of the 3 deaths referred to diphtheria, 2 were returned in Dublin and 1 in Belfast; and of the 2 fatal cases of scarlet fever 1 each occurred in the same towns. The fatal case of enteric fever was registered in Dublin, and that of typhus in Cork. The deaths referred to diseases of the respiratory system, which had been 48 and 54 in the two previous weeks, declined to 46 last week. Of the 312 deaths from all causes in the 22 towns last week, 94, or 30 per cent., were recorded in public institutions, and 8 were referred to different forms of violence. The causes of 17, or 5·4 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·7 per cent. in the 77 large English towns, and was equal to 4·0 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Colonel M. W. Kerin, C.B., principal medical officer of the Bareilly, Garhwal, and Dehra Dun Brigades, has been appointed Principal Medical Officer of the Seventh (Meerut) Division, in succession to Colonel F. B. Maclean. Lieutenant-Colonel M. J. Sexton, at present serving in Dublin, has been placed under orders for duty in South Africa. Lieutenant-Colonel S. C. Philson has been granted three months' leave of absence. Lieutenant-Colonel H. A. Haines has been appointed Senior Medical Officer of the Eastern Coast Defences in succession to Lieutenant-Colonel R. P. Bond. Lieutenant-Colonel J. F. Donegan, from the Military Hospital at Parkhurst, has been selected by the War Office as Recruiting Medical Officer at Woolwich. Lieutenant-Colonel J. M. F. Shine, commanding the Military Hospital at Naini Tal, has been granted leave of absence home from India until Oct. 31st next. Lieutenant-Colonel J. Fallon, in medical charge of the troops at Preston, has been detailed for a tour of service with the Northern Army in India. Lieutenant-Colonel C. E. Nichol, D.S.O., commanding the Station Hospital at Maymyo, Upper Burma, has been appointed to officiate as Principal Medical Officer of the Burma Division. Lieutenant-Colonel C. T. Blackwell has been appointed to command the Military Hospital at Rangoon. Major J. D. Alexander, on completion of a tour of service at Thayetmyo, has been appointed to the Station Hospital at Darjeeling. Major E. W. Slayter, from Wellington, has been appointed to command the Station Hospital at Bellary, Madras Presidency. Major H. E. Staddin, from the Curragh Camp, has joined at Dover. Major E. W. Bliss has been transferred from Mhow to the Station Hospital at Quetta. Major H. G. Martin, from Calcutta, has taken over the command of the Military Hospital at Lebong, Presidency Brigade. Major G. J. Stoney Archer, from Secunderabad, has taken up duty as Specialist in Advanced Operative Surgery at Maymyo, Upper Burma. Major C. W. R. Healey has been granted three months' leave of absence home from India. Major F. Smith, D.S.O., has been granted one year's extension of his Indian tour of service by H.E. the Commander-in-Chief. Major F. J. W. Porter, D.S.O., in medical charge of effective troops at Cosham, has been appointed for duty with the Northern Army in India. Captain J. H. R. Bond, from Mhow, has taken up duty at the Station Hospital, Nasirabad. Captain F. E. Rowan-Robinson, from Colchester, has joined at Norwich. Captain M. B. H. Ritchie has been granted one year's extension of his Indian tour of service. Captain W. A. Woodside, Adjutant of the East Anglian Royal Army Medical Corps School of Instruction at Ipswich, has been placed under orders for duty with the Northern Army in India. Captain C. H. Straton has been detailed for duty as sanitary officer in South Africa. Captain M. C. Wetherell, from Meerut, has joined for duty at the Curragh. Captain T. Biggam has been transferred from Aldershot to Bordon. Lieutenant H. H. Blake, from Allahabad cantonment, has joined the Station Hospital at Peshawar for duty. The following Lieutenants have been detailed for a tour of duty in South Africa: C. T. V. Benson, G. P. Taylor, O. W. McSheehy, C. L. Franklin, J. R. Hill, H. F. Joynt, and H. R. Edwards.

INDIAN MEDICAL SERVICE.

Surgeon-General A. M. Crofts, C.I.E., has been appointed Principal Medical Officer of the Second (Rawal Pindi) Division of the Northern Army in India, in succession to Surgeon-General H. Hamilton, C.B. Lieutenant-Colonel C. E. L. Gilbert has been granted an extension of six months' leave of absence home from India on medical certificate. Major H. Boulton has been recognised as a Specialist in the Prevention of Disease. Major W. Glen Liston has been appointed to officiate in charge of the Bacteriological Laboratory under the Education Department of the Government of India. Captain F. C. Fraser has been appointed for temporary duty in the Madras Presidency. Captain G. A. Jolly has been selected to officiate as Civil Surgeon of Mainpuri. Captain W. D. Wright has arrived home on leave of absence from India. On transfer from Ferozopore, Captain A. F. Babonan has been appointed District Plague Medical Officer of the Ambala District. Captain J. M. A. Macmillan, civil surgeon at Hoshangabad, has been appointed on special deputation duty at Pachmarhi. Captain C. G. Seymour has taken up duty as Specialist in the Prevention of Disease and Charge of the Brigade Bacteriological Research Laboratory at Dehra Dun.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant John J. M. Shaw is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Eastern General Hospital, Royal Army Medical Corps: The undermentioned officers to be Lieutenant-Colonels (dated May 21st, 1911):—Major Edward F. Maynard and Major Frederick J. Paley. The undermentioned officers to be Majors (dated May 21st, 1911): Captain Frank G. Bushnell and Captain Walter A. Bowring. Captain William D. Calvert resigns his commission (dated July 8th, 1911).

Attached to Units other than Medical Units.—Major James Malpas resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 8th, 1911).

For Attachment to Units other than Medical Units.—George Bell Brand to be Lieutenant (dated May 15th, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

Among the many interesting articles in the July issue of this journal is a joint one by Colonel Sir David Bruce, Captain A. E. Hamerton, Captain H. R. Bateman, and Captain F. P. Mackie, I.M.S., on the Trypanosome Diseases of Domestic Animals in Uganda. Captain P. J. Marett writes on the Life-History of the Phlebotomus, the article, which concludes with some suggested measures for lowering the incidence of the "sandfly" fever, being illustrated by drawings which are well reproduced. The subject of marching is one which still

requires much careful investigation, and the thoughtful and suggestive lecture on the Physiology of the March, originally delivered by Lieutenant-Colonel C. H. Melville at the Staff College, and subsequently printed in the *Journal of the Royal United Service Institution*, now finds a place in the *Journal of the Royal Army Medical Corps* where it will receive a still wider publicity which it undoubtedly deserves. Mr. G. G. Nasmith, Ph.D., and Dr. R. R. Graham detail a simple method of treating impure water by means of chloride of lime, which can be used by miners, campers, and others for purifying suspected drinking water on the spot.

Correspondence.

"Audi alteram partem."

THE INCIDENCE OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—The controversies that have ranged round the pronouncement of Koch in 1901 have resulted in the accumulation of a certain and definite amount of knowledge, but it is still uncertain if bovine tubercle—that is to say, if the ingestion of milk or meat derived from tuberculous cattle—can produce human tuberculosis of the lung. In this connexion the facts and figures that can be derived from the tropics have been neglected in a way that seems curious to me, seeing that many hints have from time to time been given in various medical journals showing that the incidence of tuberculous disease in the tropics is very different from what it is in temperate climates; and, in addition to this, the incidence of tuberculous disease in domestic animals in the tropics differs very considerably from what it is in temperate climates. And these two facts bear, I think, on this controversy.

In Perak, or Selangor, and in Pinang, on the authority of the veterinary surgeons of each of those countries, there has never yet been found a single case of tuberculosis in any kind of bovine animal; and cattle-keeping for milking and draught purposes is a very large industry. And according to the annual report of the Director of Medical Research, Kuala Lumpur, for the year 1908, no tuberculosis had been found in any domestic animal.

According to the veterinary surgeon of Pinang, tubercle was found in only 11 pigs out of 62,000 slaughtered, a percentage of 0·017, which is extraordinarily small—so small, in fact, as to suggest that there was none was all. At the Ipoh abattoir, on the other hand, there were no cases of tubercle in the year 1909 out of 35,029 pigs slaughtered—not a single case. These pigs I had every opportunity of seeing; I was searching for tubercle but I could find none.

Now, seeing that about 4 per cent. of all pigs in England are tuberculous, while in Copenhagen in 1897 tuberculous pigs varied from 3 per cent. to 14 per cent., and seeing that inoculation of the guinea-pig was resorted to in none of the Pinang cases, I think it is fair to assume that the real percentage in Pinang was 0·000 and not 0·017—in other words, that tuberculosis does not occur in pigs in this country.

I do not deny the possibility of tubercle occurring in pigs in this country, as there is the possibility of a small number of phthisical pig-keepers who might just possibly infect their pigs with their sputum, but this must be very rare, and as no inoculation experiments have been made in any of the 11 out of 62,000, and as there were no cases of tubercle in 35,000 pigs examined in Ipoh, and as the ratio of tuberculous pigs in tropical countries is so extraordinary, I think that this percentage of 0·017 is open to question. And as it has been shown that the amount of tubercle in pigs is proportionate to the extent of the dairy farming in the country in question (that is to say, that the pigs get their tubercle from tuberculous cattle), and as there is no tubercle in cattle in this country, it would not be expected that tubercle would be found in the pigs of this country.

Now, Dr. Nathan Raw has claimed that the human bacillus of tubercle causes phthisis pulmonalis, secondary ulceration of the intestines, and tuberculous laryngitis; and that the bovine bacillus causes the tuberculous diseases known as acute miliary tuberculosis, tuberculous peritonitis, intestinal and mesenteric primary disease, tubercle of pelvic organs, tuberculous lymphatic glands, tuberculous joints and bones, lupus, tuberculous meningitis, and ulceration of the cornea. This was at a meeting of the Royal Medical and Chirurgical Society, and no one disagreed with him; and I think the experience of this country is quite in accordance with his ideas. If these theories are correct, that the typus humanus attacks only certain parts of the human being and that the typus bovinus attacks other parts, it would be expected that those forms of tubercle said to be due to the bovine type would be uncommon in this country, and such is the case; I have never seen one. I have had a bad case of tuberculous adenitis handed over to me which turned out to be a sarcoma, but I have never got any nearer than that to any of the cases described by Nathan Raw as due to the bovine type of bacillus.

In the annual returns of the Medical Department of the State of Perak the dissimilarity of the figures from those of England is remarkable; in the year 1907, out of 27,178 patients only 37 were recorded as having "other tubercular diseases"—that is, other than pulmonary; and since, as I have said, the only one so diagnosed that I have seen turned out to be sarcoma, perhaps this figure may include other errors of diagnosis or they may have been direct importations from China. The incidence of tubercle in this country practically bears out Nathan Raw's contention. There is no tubercle in animals of any kind, and very little—I think none—of the tuberculous diseases in man ascribed by Nathan Raw to the bovine organism. There is plenty of phthisis; about 10 per cent. of the hospital deaths are from phthisis, and it may be remarked that the disease is apparently increasing. There is plenty of susceptible material, but it gets infected with the human type only, apparently because of the absence of the other.

It is unnecessary here to discuss the antagonism of Koch's and von Behring's views; but if the latter were correct there should be no phthisis in this country, which is unfortunately not the case. Koch's view does not explain the absence of the non-pulmonary forms of the disease. Nathan Raw's explains both. Here we have only personal infection. The converse of this is shown by Dr. Mayo of Rochester, Minn., who says that phthisis pulmonalis is uncommon in that State and that the other forms are common. That is in a grazing country with, I presume, a rural population. Countries like these can be used as controls for the work that is being done in other lands. I send the facts about this country in the hope of adding a little to what is, I believe, the correct view, and because there is much to show that this view is not at all generally accepted; for instance, in the recent discussion on tuberculin dispensaries, now going on in the medical papers, no mention is made of the kind of tuberculin to be used, as though it did not matter. Dr. Bosanquet, in the *British Medical Journal* so recently as Jan 21st, 1911, says, "On the other hand, in pulmonary disease the remedy seems on the whole disappointing," but he makes no mention of the use of a tuberculin from a bovine source; and in a discussion opened by D'Arcy Power and reported in THE LANCET and *British Medical Journal*, "On the Value of New Tuberculin in Surgical Tuberculosis," no mention is made of the idea that these surgical lesions are of bovine origin and that the new tuberculin is made from the bacillus typus humanus.

If these views are correct, the treatment of the disease in temperate climates will be put on to a better plane, while in the tropics the prevention of tubercle is shown to be much more simple than it is in other parts of the world, as it becomes only a matter of personal infection, and so must be dealt with on the lines which are adopted for the prevention of other infectious diseases.

I am, Sir, yours faithfully,

J. TERTIUS CLARKE, M.R.C.S. Eng.,
L.R.C.P. Lond., D.P.H.,
Medical Officer, Lower Perak, F.M.S.

*** This letter forms an interesting commentary on the results of the Royal Commission on Tuberculosis (Animal and Human), to which we refer in a leading article on p. 166. It also emphasises the importance of adequate measures to protect the community against the dangers of tuberculous milk and meat.—ED. L.

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—Perhaps you will kindly allow me space to refer to the amendments suggested by the British Medical Association in reference to representation on the various bodies that will control medical attendance under the State Insurance Bill. The demand made by the Association I regard as quite insufficient.

To the most casual reader of this Bill it must have appeared evident at the first glance that everything is complicated through the overlapping that must necessarily ensue between the Insurance Commissioners and the Local Government Board, and between the Local Health Committees and the existing public health authorities. This may concern us as citizens, but what more particularly concerns us as medical men is that no provision is made for the settlement of disputes that will undoubtedly arise in large numbers between medical men and the insured after the passing of this Bill. To whom are they to be referred? To the Insurance Commissioners? If every petty dispute in every town or village is to be referred to the Insurance Commissioners an enormous department will be required, or, as is more likely, decisions will be hung up and there will be dissatisfaction among all concerned. To the Advisory Committee? This may quite possibly be a temporary body that will disappear after the completion of the Bill. The natural forecast is that unless the Association takes strong action all disputes will be referred to the Local Health Committees. And here it is that the danger lies. If the medical men in a Local Health Committee are, as proposed in the Bill, to be limited to two or even as according to the demands of the Association to one-third or one-fourth of the membership, and the great majority of the committee is to be composed of members of Friendly Societies and representatives of the insured, it is quite evident that when any dispute arises a decision in favour of Friendly Societies and the insured will be a foregone conclusion. For the settlement of these disputes it seems but reasonable that medical men should have the same number of representatives as those providing the funds—namely, the Government and contributories. I readily admit that the appointment of medical committees is a step in the right direction, but it is far from being all that is required.

Perhaps you will allow me to add that the experience of medical men during 30 years of State insurance in Germany has aroused them to the importance of this matter, and in the debates on the new German Bill and in the pages of the journals it has occupied a space only less than that given to freedom of choice. Among medical men in this country the necessity of definite action in this matter has been hitherto entirely ignored, and its importance must be my excuse for again urging the medical profession not to let this Bill pass before some definite action is taken.

I am, Sir, yours faithfully,

Greenwich, July 10th, 1911. J. H. KEAY.

To the Editor of THE LANCET.

SIR,—I note in your article in last week's issue of THE LANCET on this subject that you refer to a proposal of the Chancellor of the Exchequer to add an amendment for contracting out on the part of beneficiaries from the medical benefits and permitting contributions for the same to accumulate to afford a fund to pay a doctor in any future illness to the extent of these accumulations. If such an amendment were accepted it would be an improvement to the Bill as it stands, but it is earnestly to be hoped that the profession will not accept it in the place of an income-limit of £2 a week.

If the profession is pledged to anything it is pledged to decline to accept any appointments under the Bill unless an income-limit of £2 a week is secured by the same. Any surrender of this principle will be fatal to the union of the profession. I am, Sir, yours faithfully,

London, E.C., July 10th, 1911. MAJOR GREENWOOD.

To the Editor of THE LANCET.

SIR,—In the leading article in your last issue you state that the Chancellor is considering the introduction of an amendment securing that persons who can pay fees to medical men, although beneficiaries under the Bill, should continue to pay fees.

If in his amendment to Clause 8, Section 7, the Chancellor puts that every beneficiary receiving a total income over £2 a week *cannot claim medical benefits under the Bill and must* do this, then the demand of the medical profession is met. If he will go further and add that the Local Health Committee in conjunction with the Local Medical Committee in any area *may* fix an even *lower* wage limit it would still further please the medical profession, and prevent future local trouble for his scheme.

If, however, the Chancellor omits the first eight words in italics and puts *may* for *must* then the demand is not met. For human nature being as it is, 90 per cent. of these beneficiaries in receipt of an income over £2 a week having had medical benefits conferred on them by Clause 8 of the Bill, will undoubtedly demand such benefits without any further cost to themselves. Mr. Goldman, the Member for Penryn, has put down an amendment that meets the demand of the profession. I am, Sir, yours faithfully,

July 10th, 1911. M.B., B.S.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—In the last issue of THE LANCET appears a letter under this heading from the facile pen of Mr. Hugh Wansey Bayly, M.R.C.S., stating that I, amongst others, in criticising the treatment of syphilis by salvarsan "appear to have relied on either very slight experience of the intramuscular method, or on the careful gleanings from the reports of the few opponents and the remarkably small casualty list." I plead guilty to having given my personal experience (a necessarily brief one, as I am not a *protégé* of Professor Ehrlich) of this treatment at a discussion held at the Harveian Society in December last, which discussion was reported in some of the medical journals in a few lines, and on these reports I assume that Mr. Bayly bases his remarks. I can assure Mr. Bayly that I had not the time or the inclination to carefully glean anything from the writings of the few opponents or even from those of the many early friends of this treatment, and why, if I was a hostile critic, I should allude to what Mr. Bayly is pleased to call the remarkably small casualty list passes my understanding. At the discussion alluded to I stated my conviction that salvarsan was a valuable addition to our anti-syphilitic therapeutics, and one which in appropriate cases would enable us rapidly to relieve some of the urgent manifestations of syphilis.

It is a source of deep regret to me that my opinions should not have appeared to coincide with those of Mr. Bayly, pathologist to the Lock Hospitals, to which I happen to be the senior surgeon, the more so as I have been invited to open a discussion at the end of this month on the treatment of syphilis by salvarsan, of which compound Mr. Bayly seems to have constituted himself a champion. The remarkable interest in the treatment of syphilis by salvarsan shown by the pathologist to the Lock Hospitals is a certain augury of its future success in this country, and must be a source of congratulation to the firm of chemists who are retailing this somewhat expensive preparation.

I am, Sir, yours faithfully,

J. ERNEST LANE,
Senior Surgeon to St. Mary's and to the London Lock Hospitals.

July 10th, 1911.

CHLORETONE IN SEA-SICKNESS.

To the Editor of THE LANCET.

SIR,—Professor Welsh gives such striking examples in illustration of the efficacy of chloretone in the prevention and cure of sea-sickness that it seems almost an impertinence to cite instances contrary to his. I am emboldened to do so in the hope of helping, even indirectly, to treat this troublesome complaint.

I am a bad sailor, at my best I feel but indifferently well on the sea; as, however, I have often observed other unfortunates succumb sooner and suffer longer, I need not condemn myself to the category of "very bad." My experiences are limited mainly to cross-Channel passages and entirely to voyages of shorter duration than 36 hours. I have tried all the usual preventives, including "specifics" and even the most minute details of preparation and posture;

and during my last two voyages I tried chloretone. Travelling *viâ* Queenborough-Flushing *en route* for Vienna I took 10 grains three times at hourly intervals, the last being swallowed as I embarked. I slept most of the night during a moderate passage, but I woke with such an appalling headache, which together with a feeling of malaise persisted throughout the greater part of the next day, that I held exemption from *mal de mer* dearly purchased at this price. I have never taken hypnotics and cannot say if I have a particular intolerance of them. On my return journey *viâ* Ostend-Dover I adopted the same precautions. The passage was a rough one; after one and a half hours I started to vomit (from previous experiences I would calculate one and a half hours as my usual limit of endurance unassisted by any "anti-sickness specifics"), and I continued to vomit and retch for the next two hours not only as violently as I have ever done, but on this occasion to the usual horrors was added the offensive taste of the chloretone or whatever product of its decomposition was vomited.

I have prescribed chloretone twice to ladies about to undertake crossings. One was spared sea-sickness (there was no certainty that she would have been sick without its administration), but she experienced a headache next morning as I have mentioned in my own case, and she willingly agreed that sea-sickness was a lesser evil. The other patient said that the drug "narcotised" her and that she vomited only during intervals of wakefulness; she complained bitterly of the taste of the vomit.

These few observations upon short sea passages seem very trivial in comparison with those described by Professor Welsh, but they may be the means of drawing some generalisations. I venture to say that sea-sickness is not entirely understood, probably because a number of factors enter into its causation, and it is partly physiological, partly pathological. It is notorious that seasoned travellers who have vanquished the Indian Ocean almost without a qualm are often the worst on board during the short Channel crossing. The conclusion is a tempting one that chloretone is less effectual in Channel sea-sickness because the particular motion in these waters produces a condition which is not affected by chloretone. My explanation of the entire failure of chloretone on the return journey to which I have referred is that the sea passage was after a train journey of 28 hours, for many have observed that fatigue strongly disposes to sea-sickness.

I personally would be only too willing to take any drug administered in any way; but, so far as a short sea journey is concerned, I shall for the future feel more disposed to meet sea-sickness and struggle with it, *quâ* sea-sickness, rather than complicate it with the doubtful advantages I have experienced from chloretone.

I am, Sir, yours faithfully,
ADOLPHE ABRAHAMS, M.B., B.C. Cantab.,
M.R.C.S. Eng., L.R.C.P. Lond.

St. Bartholomew's Hospital, E.C., June 26th, 1911.

To the Editor of THE LANCET.

SIR,—I was very much interested by Professor D. A. Welsh's paper upon the use of chloretone in sea-sickness which appeared in THE LANCET of June 24th. During the first three months of last year, a very stormy season on the North Atlantic, I acted as ship's surgeon on boats running between Scotland and Canada. I tried the effect of chloretone for sea-sickness first upon myself, as previously I had proved a bad sailor, and subsequently upon a few passengers. In my own case I took 5 grains two hours before sailing, 5 grains at the time of sailing, and 10 grains when rough water was encountered, some two hours after sailing. Beyond a slight feeling of nausea at dinner, enough to show that I should have probably been very sea-sick if I had taken nothing, I experienced no discomfort at all, and have since never been troubled by sea-sickness. As my supply of the drug was limited, I could only try its effect upon a few bad cases of *mal de mer*, and in every instance the administration of 15 to 20 grains in 5-grain doses proved sufficient to check the vomiting, and in only one case was there subsequent sickness. On the return journey I was consulted by a young lady at Newfoundland, who had four times previously crossed to Glasgow, and on each occasion had been so sea-sick that she had not been able to take a single meal in the saloon and had landed at the end of the voyage in a weak and prostrated condition. I followed the same treatment in her case as I had in my own, with the result that on the second day out from St. John's she was up on deck feeling quite well, and for the remainder of the passage took all her meals in the saloon. She felt slight nausea an hour after reaching the open sea, and against my advice she took to her cabin and prepared for her usual voyage of misery. Much to her surprise, however, she slept well and did not vomit once.

I am, Sir, yours faithfully,
KENNETH C. G. GRAY, M.B., Ch.B. Glasg.

Glasgow, July 2nd, 1911.

DIET IN SCHOOLS.

To the Editor of THE LANCET.

SIR,—The committee of the National Food Reform Association propose calling at an early date a conference of headmasters of public and private schools, together with members of their staffs, to consider the feeding in such institutions. In coming to this decision the association has been influenced by the very general interest in the subject, of which abundant evidence has lately been forthcoming.

The success of the Conference of Matrons on the Feeding of Nurses in Hospitals, of which a report has been published with a preface by Dr. Robert Hutchison, encourages the hope that a similar exchange of views among those responsible for the health of so important a section of the next generation during the critical years of body-building could not fail to yield valuable results.

In making arrangements for such a meeting, the committee are naturally anxious to act in consultation with the heads of the scholastic profession, from whom, as well as from any others interested, they would be glad to hear.

I am, Sir, yours faithfully,
CHAS. E. HECHT,
Secretary, National Food Reform Association.

178, St. Stephen's House, Westminster, July 5th, 1911.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—In your issue of March 11th, 1911, you published an article by me entitled "Infantile Scurvy in a Child Fed on Sterilised Milk." Without any authority whatever, Mellin's Food, Limited, have had that article reprinted, and have been sending it out with their literature as an advertisement. This, I conclude, because Mellin's Food is once mentioned. The advertisement has been sent to me with inquiries by a friend, and has caused me considerable inconvenience. On demanding an explanation from the firm, they wrote me that they "regarded the article as of sufficient importance to merit a wider publicity." I must apologise for troubling you in drawing your attention to the matter, and in conclusion I should be glad if you would let me know if Mellin's, Limited, have any right to act as they have.

I am, Sir, yours faithfully,
FRANCIS BRACHI, M.R.C.S. Eng., L.R.C.P. Lond.

Southsea, Hants.

*** The manufacturers of Mellin's Food should certainly have obtained our correspondent's permission and our own. Our rule in these matters is never to allow republication of any signed article in our columns until the author has satisfied us that he has himself no objection.—ED. L.

LEGISLATION WITH REGARD TO ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—Might I be permitted to express opinions somewhat at variance with those contained in your annotation on this subject in your issue of July 8th?

The mere fact that it has taken Sir Frederic Hewitt four years' hard work to bring the matter to its present position is, to my mind, very suggestive. It would almost appear as though there were a lack of enthusiasm in the profession; that the evil which such legislation proposed to correct was not a very crying one; and that the benefit to the public was rather imaginary than real. These at any rate are the views which I (and many others) hold, and have always held, and I venture to think that it is somewhat misleading to state that "there is, practically speaking, unanimity" on the

subject. Sir Frederic Hewitt's recent pronouncements have not, in my opinion, introduced any substantially new facts or arguments in favour of legislation, and I do not, therefore, propose to reiterate the views in opposition which I expressed in your columns and elsewhere in the early part of 1909.

I am, Sir, yours faithfully,

Devonshire-street, W., July 10th, 1911. J. FRED. W. SILK.

THE NECROPSY OF NAPOLEON I.

To the Editor of THE LANCET.

SIR,—The version of the report on the post-mortem examination on Napoleon, which you quote in THE LANCET of July 8th, tallies with a copy of the report preserved in the pathological museum of the University of Aberdeen. Writing without having references at hand, I am unable to say what were the relations between the medical attendants at St. Helena. It may be worth recording, however, that the two foreign doctors did not sign the report as copied; and further, that it is signed not only by Arnott, surgeon, 20th Regiment, but also by Thomas Shortt, M.D., physician and P.M.O.; Charles Mitchell, M.D., Surgeon, H.M.S. *Vigo;* Francis Bruton, M.D., Surgeon, and Matthew Livingston, Surgeon, H E.I.C. Service. Mitchell was M.D. of Marischal College and University, Aberdeen, and his copy of the report was presented by one of his descendants to the surgeon's medical school.

I am, Sir, yours faithfully,

JAMES RAE.

Park Hospital for Children, Hither Green, S.E., July 8th, 1911.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE degree Congregation was held on July 8th. The Right Hon. Sir Joseph Ward, Bart., K.C.B., Premier of New Zealand, was the recipient of an honorary LL.D. degree. Eleven degrees of M.B., B.Ch. were conferred. Henry Percy Pickerill of the University of Otago received the degrees of M.D. and M.D.S. *in absentiâ*. After the degree ceremony a large company of graduates and friends partook of the annual luncheon arranged by the Guild of Graduates. Dr. Stanley Barnes, the President of the Guild, occupied the chair, and among the numerous guests were Sir Joseph and Lady Ward and other colonial visitors. Mr. J. Furneaux Jordan has been appointed to deliver the Ingleby lectures in 1912.

The After-care of Children.

The report of the special schools after-care sub-committee of the Birmingham Education Committee contains a review of ten years' work and emphasises the need of continuous control of the majority of the feeble-minded. It gives a complete account of the present condition of the cases which have been under observation. The report states that, although in this district there is better provision than almost anywhere else, it must once more be insisted that no enterprise or foresight on the part of individual authorities can effectually deal with the problem till the recommendations of the Royal Commission in favour of a single authority and continuous care all over the country are carried out. This would be much more satisfactory than mere promises of legislation. The committee has since its formation dealt with 1174 cases, of which the following is a summary: (1) mentally defective, 763; (2) deaf, 118; (3) cripples, 293; total, 1174. Of the mentally defective 173 are doing remunerative work, 6 work with their parents or other relations at home, 62 are living at home and doing no paid work, 32 were dismissed from special schools as incapable through mental or physical disability, 84 have been transferred to normal schools, 8 have been transferred to schools for the deaf and 1 has been transferred to a school for physically defective children, 43 are in workhouses, 65 in other institutions, 25 are dead, and 210 have been lost sight of. In its general conclusions the committee states that an investigation of statistics shows that out of 425 feeble-minded persons who have left school and are still alive and whose whereabouts are known only 40·7 per cent. are earning wages; only 8·0 per cent. are earning as much as 10*s.* per week; and only 1·4 per cent. 15*s.* per week. The committee repeats its convictions that for the majority permanent control is necessary for the following reasons: (1) to enable them to contribute towards their own support; (2) to save them from harsh treatment at home and in the streets; (3) to prevent their becoming drunkards, criminals, and prostitutes; and (4) to prevent their giving birth to children who must almost certainly grow up to be a burden to the community.

Yardley-road Sanatorium.

Since October last the Emergency Hospital at Yardley-road, which was built for the accommodation of small-pox patients, has been used for the educational treatment of consumptives. A large number of men and women have passed through the institution, and besides the instruction in the methods of open-air treatment all suitable cases have been treated with tuberculin, not only whilst in the sanatorium but afterwards as out-patients. The excellent work carried on by Dr. W. H. Wynn, the visiting physician, and Mr. G. B. Dixon, the resident medical officer, has, unfortunately, been interrupted by a case of small-pox arising in the city. The consumptive patients were sent home and provision was made for the accommodation of this patient and any others that may arise. Since the hospital was built there has been no previous case of small-pox, and when the Greater Birmingham scheme comes into force in November other provision will be made for these cases, and the Yardley-road establishment will be devoted entirely to consumptive cases. Plans are being made to increase greatly the accommodation. It is hoped that the interruption will be of short duration and that no further cases of small-pox will occur.

A Scheme for a Natural History Museum.

A very important scheme has been arranged for a natural history museum for the city. The whole of the third floor on one side of the recent Art Gallery extension will be occupied by it. The committee, of which Professor Gamble is secretary, has formulated proposals for fitting up the rooms. The leading idea is topographical—that is to say, to illustrate the character of the sea, of fresh water, and of land (mountain, moor, desert, meadow, and prairie), and to show the characteristic animals and plants of these divisions of the earth. Side by side with the main idea, which will be extended through two long galleries, there will be a continuous arrangement of specimens, classified in the usual scientific manner, beginning with man and ending with crystals.

July 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Bill.

AT a meeting of the Scottish Association of Medical Women, held in Edinburgh on July 1st, a discussion took place on the medical aspects of the National Insurance Bill. The discussion was opened by Dr. Annie Mercer Watson, Aberdeen, and the following motion, proposed by Dr. Elsie Inglis and seconded by Dr. Beatrice Russell, was carried unanimously:—

That the six points embodying the policy of the British Medical Association, as contained in the Smith-Whitaker circular of June 3rd, be adopted by this meeting as essential, and that members of this association be urged to join the British Medical Association, and to sign the undertaking to refuse to give medical attendance and treatment to persons insured under this Bill, excepting on such terms as shall be satisfactory to the medical profession, and in accordance with the declared policy of the British Medical Association.

—At a meeting of the medical profession of Caithness held in the Bignold Cottage Hospital, Wick, resolutions were unanimously passed upholding the policy of the British Medical Association regarding the National Insurance Bill. Mr. A. Wilkie, M.P. for Dundee, was interviewed on July 7th by representatives of the Dundee branch of the British Medical Association. The question was raised of the professional status as involved in the relation of doctors to approved societies under the State Insurance Scheme. The Chancellor of the Exchequer having agreed to the principle of free choice of doctors for those insured under the Local Health Committees, they urged that the same principle should be applied to the whole of the medical relief.

Edinburgh University Graduation Ceremonial.

At the summer graduation ceremonial of the University of

Edinburgh, held in the M'Ewan Hall on July 7th, the honorary degree of Doctor of Laws was conferred on H.H. Maharaja Sir Madho Rao Scindia Bahadur, of Gwalior, and among others Thomas Smith Clouston, M.D., late physician-superintendent of the Royal Edinburgh Asylum; James Mackenzie, M.D.; Ernest Rutherford, F.R.S., professor of physics in Manchester; and Sir William Gowers, M.D., F.R.S. On July 8th a special graduation ceremonial was held in the M'Ewan Hall, when honorary degrees were conferred on Sir John Anderson, G.C.M.G., Sir Walter Egerton, K.C.M.G., Sir Everard Im Thurn, C.B., K.C.M.G., Sir Charles A. King-Harman, K.C.M.G., the Right Hon. Sir Edward Patrick Morris, K.C., Sir Sidney Olivier, K.C.M.G., and Sir Alfred Sharpe, C.B., K.C.M.G. After the ceremony the guests were entertained to luncheon in the Students' Union.

Queen Margaret College, Glasgow.

The annual celebration of Founders' Day took place last week at Queen Margaret College. A reception was held in the afternoon and was attended by 400 guests, including Principal Sir Donald MacAlister and Lady MacAlister, members of the Senatus and University Court, and graduates of the College. The visitors were received by the mistress of the College, Miss Melville, M.A., B.D.

The Rectorship of the University of Aberdeen.

Mr. Andrew Carnegie has consented to become a candidate (on non-political grounds) for the Lord Rectorship of the University of Aberdeen.

Aberdeen Parish Council Medical Officers: Attendance at Confinements.

The question as to whether parish council medical officers are obliged by the terms of their appointments to attend paupers at confinements has been under discussion at the Aberdeen parish council. The rule which refers to this matter is as follows: "Every medical officer appointed by the parish council to any such parish or to a district of any such parish shall duly and punctually attend upon, and prescribe for, all poor persons requiring medical or surgical assistance within the parish or district to which he is appointed, whenever he shall be thereunto required by a written or printed order from the parish council or the inspector of the poor; or in cases of sudden or urgent necessity, from a member of the parish council; or by the production, on the part of any poor person, of their pay card." The committee of the council, which had the matter under consideration, resolved that the medical officers were bound to attend to all the poor on the outdoor rolls of the parish when called upon, irrespective of the nature of the ailment.

Small-pox in Paisley.

Last week five cases of small-pox were notified in Paisley. The cause of infection in the first case has not been ascertained, but the other cases were direct contacts. Unfortunately one patient has died in hospital, but the others are doing well, and no new case has occurred for more than a week.

Effects of the New Arts Ordinance on the University of St. Andrews.

The University of St. Andrews closed its summer session (now the third term of the academical year) on June 27th, and the degree examinations have begun. The operation of the new arts ordinance is seen in a substantial increase in the numbers attending the University classes in the summer session both at St. Andrews and at Dundee.

Sanitary Congress at Dundee.

The annual Congress of the Sanitary Inspectors of Scotland was held at Dundee on June 30th. Mr. Thomas Bishop, chief sanitary inspector of Leith, presided. In his opening address he spoke of "Loopholes in Sanitary Law," and said that 14 years ago, when the Public Health Act was passed, farmed-out houses were little known outside of Glasgow, but the system had spread there, and though these houses had not yet found a footing in Dundee, it would be strange indeed if they were not in the near future established there. When once a start was made the number of these houses spread with great rapidity. House factors with property of a certain class saw in this system a way of collecting rents with a minimum of trouble to themselves. The law with regard to the prevention of smoke was much behind the times, and manufacturers ought to be compelled by law to instal modern appliances. The law relating to dairies was antiquated. More control should be given to local authorities, and the premises as well as persons should be licensed. Registration should apply to dealers residing without the jurisdiction of the local authority, but who supply milk wholesale to shops, while cows should with reasonable frequency be examined by a veterinary surgeon. The Food and Drugs Act should be amended to prevent the sale of adulterated food, and also to regulate the manufacture and sale of quack medicines. Mr. Peter Fyfe, chief sanitary inspector, Glasgow, said in speaking on the Destruction or Reconstruction of Slums, that sanitary inspectors in their search for the disease-bearing house and family were met with such an infinite variety of circumstances and such fine shades of differences that they looked in vain for a firm foundation upon which to base their opinion as to whether a given area, small or large, was a slum to be dealt with under Part I. or Part II. of the Housing of the Working Classes Act. Slum reconstruction offered an alternative policy, which was not dependent upon Acts of Parliament, but the keen desire of some housing reformers not unseldom overran their discretion. "Back to the land" was the battle-cry of the garden city enthusiast. The destruction of the city slums, and the erection for the people who inhabited them of delightful cottages in the country or suburbs, on cheap ground was an ideal plan, but a quite Utopian one. In the first place, such people did not want them, and secondly, they could not afford to pay for them. The most successful line of policy was the one which had been to a considerable extent followed by the Glasgow Workmen's Dwellings Company, which was to improve the structure and management of dilapidated slums, let the houses at rents within the reach of the labouring classes, and return 4 or 5 per cent. dividend on the capital expended. Councillor M. Cabe, Dundee, said that in one tenement they would find a man with £2 or £3 a week living in filth and squalor and another man earning 18*s.* a week living in a clean, sweet house. The problem was what to do with the slummer, who in five or six weeks would reduce an up-to-date property to the level of a slum. In the last ten years Dundee town council had compelled property owners to spend £90,000 on improvement, and to-day much of the property was worse than before. Drastic measures must be taken to deal with the slummer. Mr. Thomas Kinnear, chief sanitary inspector, Dundee, said his experience was that if caretakers were appointed in connexion with poor properties there was no difficulty with the tenants. Fifty years ago the greater part of the central area in Dundee was slum property, and could not be otherwise, but there were few properties in the city to-day which he would characterise as slum properties.

July 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Visit to Dublin.

On Monday morning last Her Majesty the Queen honoured the Coombe Lying-in Hospital with a visit. On her arrival she was received by the master, Dr. Michael Gibson, and the matron. Sir John Moore (consulting physician), Dr. F. W. Kidd and Mr. F. T. Heuston (consulting surgeons) were presented to Her Majesty. The Queen visited all the wards of the hospital and conversed with the patients. She took particular interest in a baby born on Coronation Day, and in twins, born on the morning of her visit, who are to be named respectively George and Mary. Her Majesty inspected the new Pembroke Dispensary, which had been opened a few days previously by Her Excellency the Countess of Aberdeen. It is a commodious set of rooms for the examination and treatment of out-patients. Addresses of welcome to Their Majesties were presented by the Royal College of Physicians of Ireland, represented by the President, Dr. J. Hawtrey Benson, and the registrar, Dr. T. P. C. Kirkpatrick, and by the Royal College of Surgeons in Ireland, represented by the President, Mr. R. H. Woods, and the Vice-President, Mr. R. D. Purefoy. On Tuesday afternoon Their Majesties visited Charles-street and opened the new Dispensary for Tuberculosis.

The National Insurance Bill.

Considerable dissatisfaction is felt at the suggestion that the administration of the Insurance Bill in Ireland is likely

to be left in the hands of the Local Government Board for Ireland. That body has never shown much sympathy, it is urged, with the claims of Poor-law medical officers, and it is believed to have blocked the path to reform of the Poor-law on the lines recommended by the Vice-Regal Commission a few years ago. The view is held that if the Insurance Bill is made to apply to Ireland there should be a special body of Insurance Commissioners for Ireland, distinct from any other Government Department. At present there seems to be the greatest uncertainty as to what will be the outcome for Ireland of the Insurance Bill, and this very doubtful state of affairs looks as if some coup were pending. The Bill may be passed, at the Government's suggestion, with the conditions for Ireland, England, and Scotland the same, or special arrangements may be introduced to suit Ireland, or Ireland may be eliminated altogether from the measure. He would indeed be a wise man who would prophesy at the present juncture.

The Queen's University of Belfast.

At the recent summer (June) matriculation 105 candidates entered, of whom 63 passed. Of the successful students, 34 were men and 29 were women. In the Faculty of Medicine 23 out of 35 men passed and 1 out of 2 women; in the Faculty of Arts 18 men entered, of whom 8 passed, and 35 women, of whom 21 passed; while in the Faculty of Science out of 4 men who entered 3 passed, and 7 out of 12 women were successful. Taking the two faculties together—arts and science—there were 28 women who passed and 11 men, while in the Medical Faculty 23 men and 1 woman were successful. The preponderance of women entering in the Faculties of Arts and Science is very remarkable.

The Mater Infirmorum Hospital, Belfast.

As a result of the recent Saturday collection a sum of £976 1*s.* 1*d.* has been realised, which it is expected will be much increased.

Dr. G. Johnstone Stoney, F.R.S.

Many old Queen's University graduates will regret to hear of the death at his London residence, on July 5th, of Dr. G. Johnstone Stoney, a man of the highest scientific attainments, who for so many years—up to the time of its dissolution—was secretary of the old Queen's University of Ireland.

James Anderson Browne, L.R.C.P. & S. Irel.

Among medical men the deepest sympathy is felt with Dr. J. Walton Browne, senior surgeon and chairman of the medical staff of the Royal Victoria Hospital, Belfast, in the death, under particularly sad circumstances, of his only son, Mr. J. Anderson Browne, which occurred suddenly on July 4th in Millbank Military Hospital, London. The deceased, who was just 38 years of age, was a second lieutenant in the Queen's University contingent of the Officers' Training Corps, and in that capacity left for London on the night of Saturday, July 1st, in order to take part with the detachment of his corps in the Royal review at Windsor on the following Monday. He seemed quite well and in good spirits on leaving, but on Sunday he became suddenly unwell and was removed to Millbank Military Hospital, where he passed away on the Tuesday, the cause of death being cardiac disease. A young man of exceptionally kindly nature and of social qualities, Mr. Browne was a great favourite, and his early demise is deeply regretted, both on his own account and because he was his father's son. He was accorded a military funeral in Belfast on July 8th.

July 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A New Hospital in Paris.

A NEW hospital has been built in Paris to replace the ancient Hôpital de la Pitié, which is to be demolished. The new Pitié is situated on the Boulevard de l'Hôpital, alongside the Salpêtrière. It will contain 998 beds and will comprise 32 medical and surgical buildings. The cost is 11,000,000 francs. Its construction, which was begun in 1905, has been several times interrupted by strikes and more recently by the floods. It is, indeed, a model hospital, as near perfection as possible in regard to the disposition of the wards, the isolation of the pavilions, the heating system, the sterilising plant, the various kinds of laboratories, a radiographic installation, and so forth. It was opened last week, and a part of the beds are already occupied. It is expected that in two months its entire bed capacity will be in use.

Syphilis as an "Industrial Accident."

A singular case has recently been tried before the Tribunal of the Seine. Last year a Parisian dentist's assistant was entrusted by his employer with the adaptation of a dental apparatus to a patient. In the course of the work the assistant wounded his little finger. The patient happened to be a syphilitic, and the assistant thus became infected through the wound. The assistant brought an action, under the law relating to industrial accidents, against his employer, demanding an annuity of 2912 francs. He adduced the moral prejudice inflicted on him by the accident, in that being married and the father of two children, he would henceforth live in fear of infecting the members of his family, and also that from the knowledge that he was now exposed to the remote consequences of syphilis, his physical health and resistance would become diminished. This diminution he estimated at 80 per cent. The Tribunal has just decided that the law concerning industrial accidents is not applicable in his case; for the assistant is engaged in the practice of a liberal profession, and is to be considered as a collaborator of the dentist rather than as a workman or a commercial employé paid to do work distinct from that of his employer. He is not to be regarded as simply a cog in the machinery of a commercial enterprise. In short, the Tribunal has decided that in the liberal professions syphilis cannot be regarded as an industrial accident. This decision has occasioned not a little surprise, for up to now in the hospitals nurses and midwives contracting syphilis in the course of their professional duties have received a pension from the Administration of Public Assistance, which has regarded itself as justly responsible; for the definition of an industrial accident, according to the best legal opinion here, is such an accident as would not logically have occurred if the sufferer had been a free agent, and not one performing a task imposed by his employer.

Arsenical Poisoning among Viticulturists.

The Senate and the Academy of Medicine, on the instigation of M. Cazeneuve, formerly Dean of the Faculty of Medicine at Lyons, a correspondent of the Academy, and a Senator, have again taken under consideration the accidents occurring among vineyard employés from arsenical substances used as insecticides. Since he first took up the subject last year M. Cazeneuve has noted an increase in the number of such accidents, the appearance of a new vineyard pest, the cochylis, having necessitated the use of much greater quantities of sodium arsenate. In the departments of Hérault and of the Ardèche numerous fatal accidents have been observed. The insecticides thus employed are all arsenical, and in some of them the base is arsenate of lead. The poisoning is contracted for the most part when the vine-dresser is using the very primitive insufflators to blow the powder on the leaves of the infested vine. Other accidents, however, happen later to those workmen who handle the vine, in consequence of the absorption of the arsenical dust. Accidents of still another character have ensued in consequence of the peasants keeping stored in their houses for the purposes of viticulture considerable quantities of these arsenical salts, which have been mistaken by their wives and children for foodstuffs, such as salt, soda, or cornflour. These accidents are found only among the vine-workers. The wine from the vines thus treated contains no, or accidentally only negligible, traces of arsenic; but the health of the vineyard workers is seriously menaced, even though it be through their own imprudence. M. Cazeneuve has proposed the appointment of a commission, whose duty it shall be, in the two affected departments, to supervise the use of arsenical preparations, and if necessary, to suppress their use next season. Many members of the Academy of Medicine, M. Gautier, M. Pouchet, M. Chantemesse, and M. Weiss, have strongly supported M. Cazeneuve. M. Bouchardat has even insisted on immediate interdiction; for the vineyard workers, much alarmed by the new invasion of the cochylis, are preparing to enter on a fresh arsenical treatment of their vines just as they are on the point of bearing fruit, and serious fears are entertained that the latter may be rendered toxic thereby.

July 11th

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Grievances of Medical Professors.

A SHORT time ago the titular principals or heads of the Austrian universities and high schools, academical dignitaries whose official title is rector, held a meeting to which also the professors and teachers of these institutions were invited. One of the chief subjects of discussion was the remuneration or so-called honorarium of the professors, both ordinary and extraordinary. Up to a few years ago it was the general custom that a professor received as payment the fees paid by his students, and also certain fees for the examinations, minus a small administrative discount. Under this system each professor felt that his reputation and skill were the real sources of his income, for the students preferred to attend the classes in which they had the best opportunity of learning, and the medical schools in Vienna and Austria generally were flourishing. The Government, however, decided a few years ago to pay the ordinary professors fixed salaries, while the fees of their students were being received by a Government official, but this arrangement was not made applicable to private or special classes or lectures. The result is that the extraordinary professors have for their income only what they can earn by holding special classes, attendance on which is optional and not obligatory on the students. The fixed salaries of the ordinary professors are low, varying between £200 and £400 a year, and a scientific man who has no leisure or no desire to seek private practice in addition to his official work must content himself with this meagre remuneration. It is therefore somewhat difficult to get a medical man of eminence to become a university teacher unless he knows that he will be able to supplement his income by private practice, a course which is not to everybody's taste. The theoretical branches of the medical curriculum, or branches such as experimental pathology and forensic medicine, which are not altogether compatible with private practice, can only be undertaken by teachers possessed of independent means. The above-mentioned meeting of rectors accordingly resolved that the Government should be asked to stop the wholesale appointment of *privat-docenten* and extraordinary professors who have no opportunity for teaching. A professorship ought not to be a mere titular distinction: it is a responsible position for which a competent man is required, and one whose services and time should be paid for.

The Decrease of the Birth-rate in Austria.

In an address recently delivered before the Gesellschaft der Aerzte in Vienna, Dr. Jellner discussed the decrease of the birth-rate and the operation of the various factors which contributed to it. He said that within the last ten years the birth-rate has gone down from 38·2 to 34·1 per 1000 of the population. In the year 1897 statistics showed that 38 women out of every 1000 living and of the child-bearing age had had a child or children, but in the year 1906 the corresponding figure was 36. The decrease of the birth-rate was to some extent compensated for by the decrease of the number of deaths of children during labour, for in 1897 the stillborn children were 1·1 per 1000 births, whereas in 1906 the proportion was only 1 per 1000. The figures would be still better if the excess of births over deaths was considered. In 1897 there were per 1000 of the population 11·8 more births than deaths; in 1906 the corresponding number stood at 12·4. The actual number of births was, nevertheless, decreasing constantly. Several reasons contributed to this result. The industrial population married early and had few children, the agricultural population, although marrying later, had many children, the intentional limitation of the family being evident in the first-mentioned group. The reduction of the birth-rate extended also to illegitimate children; the proportion of whom has gone down from 144 to 123 per 1000 births. On the other hand, the mortality has also gone down, and the progress of science has improved the expectation of life of children. On a general review of the whole subject Dr. Jellner came to the conclusion that the principal factor in the decline of the birth-rate was the intentional prevention of conception or interruption of pregnancy. It occasionally happened that such interference with the natural course of events was quite legitimate from a medical point of view, because it was not always advisable that women suffering from tuberculosis or heart disease or mental derangement should take the risks of childbirth at full term. On the other hand, social considerations might force medical men to reconsider their attitude towards this problem of sexual life. Dr. Jellner said that in families of the poorer classes or where the mother was engaged in some employment which prevented her from giving sufficient attention to a large number of children there was some ground for believing that one or two children, carefully brought up, were better for the community than four or five who must suffer from underfeeding or parental neglect. Many women, however, to whom none of the foregoing conditions applied were found to use either the preventive expedients so widely advertised in the newspapers, or else to interrupt their pregnancy by means of instruments or medicines. He refrained from giving any opinion as to the lawfulness or otherwise of such a procedure, but he emphasised the necessity of improving present legislation on this subject from a social point of view. The extent of the trade in preventive appliances, both in the towns and the country, might be estimated from the fact that one of the firms which supplied the so-called "obturator" for this purpose has sold 8000 of these instruments within two years. Dr. Jellner maintained that this traffic should be prevented by law, and that medical considerations should be paramount in judging when it might be necessary to interfere with the normal course of conception and pregnancy.

July 10th.

Obituary.

ALFRED STILEMAN BOSTOCK, M.R.C.S. ENG., L.S.A.

Mr. Alfred Stileman Bostock, whose death took place at the residence of his son at Leatherhead on July 1st, was born at Horsham in 1846. He became a Member of the Royal College of Surgeons of England in 1867, and a Licentiate of the Society of Apothecaries of London in the following year. He settled at Chichester in 1871 and soon gained a large practice. He took a keen interest in municipal affairs, and in 1884 was elected Mayor of Chichester. He was re-elected to this office in 1891. Early in 1909, owing to failing health, Mr. Bostock relinquished his practice at Chichester and went to Pinnock in Gloucestershire. On leaving Chichester Mr. Bostock received a public presentation "in recognition of the skill, patience, and attention which he has shown, and his great faithfulness and kindness of disposition." He contributed to the *Medical Times and Gazette* in the year 1868 notes upon a case of subclavicular dislocation of the humerus which were made interesting by the fact that reduction was effected after eight years by manipulation.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Franz Kral, professor of bacteriology in the German University of Prague.—Dr. E. v. Hibler, extraordinary professor of pathological anatomy in the University of Innsbruck from septic infection contracted during his demonstrations.—Dr. G. Krönig, *privat-docent* of medicine in Berlin.—Dr. H. Stilling, professor of physiology and pathological anatomy in the University of Lausanne.—Dr. Samuel E. Maynard, professor of gynæcology in the University of Vermont, Burlington.—Dr. Carl Beck, professor of surgery in the New York Post-Graduate School and Hospital.

DONATIONS AND BEQUESTS.—After the disposal of several charitable legacies, particulars of some of which were published in THE LANCET of July 1st, p. 60, the residue of the estate of Miss A. Thorne Harris of Plymouth, which is estimated at about £2100, is to be divided between the South Devon and East Cornwall Hospital, the Didworthy Sanatorium for Consumptives, and the Three Towns Church Extension Fund.—Miss M. Goodenough Cox, of Staplegrove, near Taunton, has bequeathed £3000 to the Taunton and Somerset Hospital.

THE NATIONAL INSURANCE BILL.

OUR readers will have followed in the daily papers the progress which the Bill has made in Committee during the week, while our correspondent in the Lobby of the House summarises in another column the chief points so far as they will affect the position of the medical profession.

On Tuesday evening, in debating the provisions of Clause 8, which details the rates and conditions of medical benefit, some very important speeches were made, especially by the Chancellor of the Exchequer. An amendment was moved to omit the subsection dealing with medical treatment and attendance until the House was in possession of the negotiations at present in progress between the Chancellor of the Exchequer and the medical profession. Mr. Lloyd George submitted that under Clause 14 of the Bill, which deals with the administration of medical benefits, the position of medical men could more conveniently be discussed, but undoubtedly a strong feeling prevailed in the House that it would be necessary to make sure that the terms offered to medical men were such that they would be able and willing to carry on the medical work before proceeding to decide as to the details of that work. The Chancellor pleaded that discussion just now of the medical claims would prejudice pending negotiations, and expressed his anticipation that a satisfactory solution would be reached, adding that the only outstanding question of difficulty was the limit for beneficiaries which should be laid down. Strong representations were made by distinguished Members that the House ought to be allowed to preserve its liberty of action with regard to the clause until after the issue of the pending negotiations, and in the end the Chancellor said that, though in his opinion all the questions could be raised on Clause 14, which would be the fit occasion to discuss whether medical men should attend persons having incomes of more than £2 a week, he would undertake, if he was wrong in this opinion, to recommit the necessary parts of Clause 8 for full debate. The amendment was accordingly withdrawn.

On Wednesday evening the subject of sanatorium benefit was closely debated, when the Chancellor refused to extend the benefit to the wives and children of insured persons. In view of the differences of opinion expressed in the House as to the value of sanatorium treatment we may refer our readers to the important memorandum which appears on p. 180 of this issue of THE LANCET.

The British Medical Association and the Bill.

The British Medical Association has issued to all Members of Parliament a statement of the grounds for the proposals put forward by the Association in connexion with the National Insurance Bill, and we understand that the Council of the Association has decided to open a Central Guarantee Fund of £100,000 to be used for compensation to medical practitioners incurring loss through the operation of the Bill, and to recoup the Association for its expenses in connexion with the Bill.

The memorandum to Members of Parliament, after admitting that in the present state of society interference is to some extent necessary with regard to the relations between the public and the medical profession, states clear preference for the independence of private practice despite its risks to the security of an official service with its restraints. It enumerates the terms of service which were adopted at the mass meeting of the medical profession in the Connaught Rooms on June 1st, which were, it will be remembered, as follows:—

1. An income limit of £2 a week for those entitled to medical benefit. 2. Free choice of doctor by the patient subject only to the consent of the doctor to attend him. 3. Medical and maternity benefits to be administered by Local Health Committees and not by Friendly Societies. 4. The method of remuneration of medical practitioners adopted by each Local Health Committee to be according to the preference of the majority of the medical profession of the district of that committee. 5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service. 6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Local Health Committees; and statutory recognition of a local Medical Committee representative of the profession in the district of each Health Committee.

As our readers know, certain of these demands of the medical profession have already been met—that is to say, it is understood that one of the Insurance Commissioners will be a medical man, that experienced medical practitioners will find a place on the Advisory Committee, and that each Local Health Committee will contain two medical men. With regard to the fourth and fifth demands, the memorandum points out that the provisions of the Bill can be made to meet the demands of the medical profession if the beneficial arrangements are satisfactory; but with regard to the first, second, and third demands amendments to the Bill are necessary.

Concerning the administration of medical benefits, the memorandum strongly urges that on all grounds such administration should be placed in the hands of the Local Health Committees proposed to be constituted under the Bill. This is, of course, in direct consonance with all that we have written on the matter out of a full knowledge both of the inefficiency of the medical service offered in so many instances by Friendly Societies, and of the relations between those societies and their medical officers.

The memorandum also points out clearly, as we have ourselves, that unless the remunerations and the conditions generally of medical practice are made adequately attractive there will be a serious shortage of medical practitioners in the country. We have already said that the number of students during the last decade having declined steadily, and the standard of the test of qualification having with equal steadiness been raised, unless medical practice offers a reasonable chance of a professional livelihood candidates will be too few.

The question of a wage limit for the time remains in abeyance; presumably the Chancellor's attitude will not be exactly defined until after he has heard the views of the Council of the British Medical Association which meets on July 22nd in Birmingham.

The memorandum of the Association contains the suggestion for mutual agreement to which we alluded last week. It points out that there is general agreement with the view put forward by the medical profession, on the merits of the case, that the section of the community whose income exceeds £2 per week can afford to, and do at present, employ doctors privately to attend them in a very large proportion of cases, and that there is no necessity for insurance or a State subsidy to enable them to obtain ordinary medical attendance. But special surgical skill or institutional treatment may be wanted. If "medical benefit" can be interpreted in such a way that contributions from the Insurance Fund may be made towards the cost of treatment under a private agreement with a practitioner both the profession and the insured may be satisfied. Some such system as we outlined last week, whereby medical benefits may be accumulated against emergencies by compulsorily insured persons who are privately attended, will be required.

The capitation method of remuneration is adopted in the memorandum, but no amount of remuneration is for the present suggested.

The Chancellor's Amendment as to Administration of Medical Benefits.

The Chancellor has put down an amendment to Clause 14 enacting that the Local Health Committees shall make arrangements with practitioners in accordance with regulations made by the Insurance Commissioners, and proposes the following provisions:—

The regulations made by the Insurance Commissioners shall provide for the arrangements being made subject to the approval of the Insurance Commissioners and being such as to secure that insured persons shall receive adequate medical attendance and treatment from the medical practitioners with whom arrangements are so made, and shall require the adoption by every Local Health Committee of such system as will secure:—

(*a*) The preparation and publication of lists of medical practitioners who have agreed to attend and treat insured persons whose medical benefit is administered by the committee and resident within the area to which the list relates;

(*b*) A right on the part of any duly qualified medical practitioner who is desirous of being included in any such list as aforesaid of being so included, except in cases where the Insurance Commissioners, after inquiry, are satisfied that his inclusion or continuance in the list would be prejudicial to the efficiency of the medical service of the insured;

(*c*) A right on the part of any insured person of selecting from the appropriate list the practitioner by whom he wishes to be attended and treated and, subject to the consent of the practitioner so selected, of being attended and treated by him;

(*d*) The distribution amongst the several practitioners whose names are on the lists of the insured persons who after due notice

have failed to make any selection, or who have been refused by the practitioner whom they have selected:

Provided that if the Insurance Commissioners are satisfied that the practitioners included in any list are not such as to secure an adequate medical service in any area, they may dispense with the necessity of the adoption of such system as aforesaid as respects that area and authorise the committee to make such other arrangements as the Commissioners may approve.

Pharmaceutical Interests and the Bill.

No event has occurred in our time which has had the effect of uniting chemists and druggists so firmly as the introduction of the National Insurance Bill. The mass meeting held at the Holborn Restaurant on July 6th was at least twice as large as any gathering of pharmacists that has ever assembled in this country and ten times bigger than the historic meeting held at the Crown and Anchor Tavern in the Strand 70 years ago, at which it was resolved to form an association, under the title of the Pharmaceutical Society, "for the purpose of protecting the permanent interests and increasing the respectability of chemists and druggists." The number of pharmacists at last week's meeting was little short of a thousand, some of whom had come from as far north as Aberdeen, while practically all the large towns in Great Britain were represented; there was also a fair sprinkling of women pharmacists. The object of the meeting was to consider the form of proposed amendments of the National Insurance Bill, and with only four or five dissentients the large gathering expressed approval of amendments embodying the principles formulated by the Council of the Pharmaceutical Society. In many instances these amendments are in the same terms as amendments which have been drawn up on behalf of the medical profession, as, for instance, those which provide that Local Health Committees and not Friendly Societies shall control the medical and pharmaceutical services under the proposed scheme. Mr. Lloyd George has intimated to pharmaceutical representatives that he regards this proposal favourably, and although the amendments may not be adopted by the Government Ministerialists will be free to vote for them. Their fate, therefore, depends upon the impending fight in the House of Commons between the Friendly Societies and the united forces of the medical profession and pharmacists. The efforts which pharmacists are making, individually and collectively, to induce Members of Parliament to support these amendments should materially assist medical practitioners in their campaign. Just as medical men are desirous that insured persons should have a "free choice of doctor," so pharmacists desire that insured persons should be allowed a "free choice of chemist," and one of the amendments of Clause 14 of which the meeting approved proposes that Local Health Committees shall prepare lists of "persons, firms, and corporate bodies ..... lawfully entitled to carry on the business of a pharmaceutical chemist or chemist and druggist"; that the lists shall include all those who apply to be included, provided their appointment would not be prejudicial to the efficiency of the service; and that every insured person shall be entitled to make a free selection from the local list. As to the method of remuneration, the meeting approved of an amendment providing that payment should be made in accordance with a scale of charges to be agreed upon between the Local Health Committee and those carrying on business as chemists within the area of the committee, and, failing such an agreement, upon a scale of charges to be fixed by the Insurance Commissioners. It is also proposed to add a new clause to the Bill, providing for the formation of local pharmaceutical committees to advise the Health Committees on all matters affecting arrangements for the supply of drugs, the clause being in similar terms to that which is to be moved on behalf of the medical profession. The object of other amendments is to prevent Friendly Societies from establishing dispensaries and to secure that the dispensing of medicines and the supply of drugs under the proposed scheme shall be in the hands of qualified persons. It will be remembered that it was pointed out in these columns[1] that there was nothing in the Bill which would prevent societies from making arrangements for the dispensing of medicines by unqualified persons, who need not be under the supervision of registered medical practitioners and pharmacists, and that subsequently, on the General Medical Council drawing the attention of the Chancellor to this defect, he promised to amend it. It is, therefore, understood that the Government will support the amendment embodying the principle that the supply of drugs shall be in the hands of properly qualified persons. With regard to the position of those dispensers holding the certificate of the Society of Apothecaries, who at present are engaged as dispensers to medical practitioners, many of them will be thrown out of employment if the proposed scheme comes into operation whereby medical practitioners will not provide medicines for insured persons. But the transference to chemists' shops of a considerable amount of work that is now done through medical practitioners will necessarily require pharmacists to obtain further assistance, and there would appear to be no reason why those who have been acting as dispensers to medical practitioners should not be employed in chemists' shops, but their work will be done under the supervision of registered pharmacists.

[1] THE LANCET, May 20th, 1911, p. 1362.

The London Provident Dispensaries and the Bill.

The London Provident Dispensaries Council, representing upwards of 40 provident dispensaries in London, met recently, under the chairmanship of the Duke of Devonshire, to consider the National Insurance Bill in its relation to the work of provident institutions. The following resolutions were unanimously adopted:—

1. That in the interests of more than 110,000 members of the working classes, earning not more than £2 a week, and contributing for their own medical treatment, it is most desirable that the provident dispensaries of London, which are approved by the medical profession, and many of which have existed for more than 50 years, should be utilised for the administration of the medical benefits under the National Insurance Scheme.
2. The appointments on the medical staff of provident dispensaries should be open, as now, to all general practitioners, and that each insured person or subscribing member should have a free choice of doctor from that staff.
3. That, in accordance with the customary regulations, only those persons whose total income is not more than £104 a year should be eligible for medical benefits in the dispensaries.
4. That the attention of the Chancellor of the Exchequer should be specially drawn to the great value of provident dispensaries as providing adequate medical relief on provident lines for women and children as well as for men.

These resolutions are supported by 22 of the principal country provident dispensaries with a membership of more than 174,000 persons. It is hoped that a deputation representative of the provident dispensary movement generally will have an early opportunity of bringing the resolutions before the Chancellor of the Exchequer.

The London County Council and the Bill.

The London County Council on July 11th adjourned to a special meeting on Monday next the consideration of the reports of various committees upon the effect of the National Insurance Bill from a local government point of view, summarised in THE LANCET last week, p. 112. The Education Committee meanwhile has reported in detail upon the Bill in relation to school medical work, urging incidentally that to avoid overlapping with the educational work of the Council the duties of the new Local Health Committees of "organising instruction in the principles of public health" should be of an advisory character only. The Committee also raised the consideration that if the employers' contribution in respect of persons under 18 years of age be less than for adults a premium would be placed on the employment of juvenile labour.

Mr. M. A. Curry desires through our columns to tender his gratitude to the colleagues who gave him their votes at the recent election for the position of Direct Representative on the General Medical Council.

DUNDEE INSTITUTION FOR THE BLIND.—At the annual meeting of the supporters of this institution the chairman, in moving the adoption of the reports, made reference to the munificence and untiring attention given to the institution by Mr. and Mrs. Molison, and afterwards by Sir William and Lady Ogilvy Dalgleish. These two families had given over £20,000 to the institution. Reference was made in the reports to the increased allowance to the poorer paid inmates. It was well known that not only in Dundee, but throughout the country, many people were interesting themselves in an attempt to get State assistance of some kind towards these greatly afflicted classes, and he trusted that something would be evolved which would deal generously with the blind and not unjustly with other people. The reports were unanimously approved.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology, held on June 29th, 30th, and July 3rd and 5th, 76 candidates presented themselves, of whom 43 passed and 33 were referred. The following are the names of the successful candidates:—

Hallowes Lloyd Addison, King's College; Irene Bastow, Royal Free Hospital; George Arthur Batchelor, St. Mary's Hospital; William Arthur Hazlerigg Noel Bell, St. Thomas's Hospital; Guy Kenneth Butterworth, St. Mary's Hospital; Paulin Roger Chevreau, Guy's Hospital; Francis Howard Cleveland, St. Bartholomew's Hospital; John Duncan Legge Currie, Cambridge University and St. Bartholomew's Hospital; Henry Speldewinde de Boer, Ceylon Medical College and Middlesex Hospital; Cassidy de Wet Gibb, Guy's Hospital; Stanley Willoughby Green, Leeds University; Owen Hairsine, Middlesex Hospital; Mostafa Hammouda, Cairo and London Hospital; Arthur Geoffrey Patteson Hardwick, London Hospital; William Clavering Hartgill, London Hospital; Henry Sydney Colchester Hooper, London Hospital; Alfred Morgan Hughes, Westminster Hospital and King's College; Manishanker K. Joshi, Bombay University and Middlesex Hospital; Sydney Hudson Keys, Middlesex Hospital; Mahomed Moosa Khan, Bombay University and London Hospital; Joseph Kinnear, St Thomas's Hospital; Allan Osborne Knight, Middlesex Hospital; Robert Ancel Leembruggen, Ceylon Medical College and Middlesex Hospital; Cecil Granville McClymont, Guy's Hospital; Kenneth Holl McMillan, St. Thomas's Hospital; William Fidler Mason, Leeds University; Walter Edgar Masters, London Hospital; Henry Marie Alphonse Menagé, St. Bartholomew's Hospital; Edward Hugh Morris, Charing Cross Hospital; Duncan Westlake Pailthorpe, Charing Cross Hospital; Lily Fanny Pain, Royal Free Hospital; Arthur Bennet Preston, London Hospital; Ibrahim Rashad, Cairo and St. Thomas's Hospital; Pierre Joseph François Louis Rathier du Vergé, Guy's Hospital; Clive Watney Roe, Charing Cross Hospital; John Patrick Shaw, Middlesex Hospital; Thomas William Sheldon, Cambridge University and Guy's Hospital; Gavin Stiell, St. Thomas's Hospital; Aly Heidar Taymour, Cairo and Guy's Hospital; George O'Neill Waddington, London Hospital; Rupert Edward Shawe Waddington, Middlesex and St. Bartholomew's Hospitals; Thomas Mansergh Wood-Robinson, Middlesex Hospital; and Frank Hamersley Woods, St. Bartholomew's Hospital.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees held in Easter term the following candidates were successful:—

FIRST EXAMINATION.

Part I., Chemistry.—C. G. Ainsworth, B.A., Downing; S. L. Bhatia, Peterhouse; J. C. Bramwell, B.A., Trinity; J. S. Eloff, Trinity Hall; F. G. Lewtas, Caius; C. R. Mackenzie, Trinity; and A. G. P. Wills, Corpus Christi.

Part II., Physics.—C. G. Ainsworth, B.A., Downing; S. L. Bhatia, Peterhouse; J. C. Bramwell, B.A., Trinity; and J. M. Howlett, B.A., Downing.

Part III., Elementary Biology.—J. T. Bleasdell, H. Selwyn; J. R. Earp, St. John's; J. S. Eloff, Trinity Hall; C. Gardiner-Hill, Pembroke; J. R. Harris, Queens'; and W. D. Newcomb, Trinity.

SECOND EXAMINATION.

Part I., Human Anatomy and Physiology.—A. C. Ainsley, Caius; S. G. Askey, B.A., St. John's; M. L. Atkinson, B.A., Emmanuel; K. B. Bellwood, Pembroke; H. J. Bower, B.A., Emmanuel; I. M. Brown, B.A., Downing; B. Burnside, Clare; H. A. Crouch and E. V. de Souza, B.A., Downing; E. Donaldson, B.A., Trinity; B. J. L. Fayle, Emmanuel; C. H. M. Gimlette, Caius; C. H. Gow, Emmanuel; B. Graves, B.A., Christ's; N. Gray, B.A., Emmanuel; L. M. Ingle, King's; R. W. P. Jackson, Clare; B. B. Jareja, Trinity; A. S. L. Malcolm, Caius; J. B. Matthews, Clare; G. C. Metcalfe, Caius; S. H. Miles, Clare; S. C. Miskin, Emmanuel; A. V. O'Keefe, Sidney Sussex; C. F. Pedley, B.A., Jesus; J. R. Rees, King's; E. C. W. Starling, B.A., Jesus; W. G. Thompson, Downing; L. H. D. Thornton, B.A., Emmanuel; G. S. Trower, King's; R. L. M. Wallis, B.A., Downing; T. Warrington, Emmanuel; G. C. Wells-Cole, Caius; and F. B. Winfield, Downing.

Part II., Pharmacology and Pathology.—H. A. Bell, B.A., Jesus; B. K. T. Collins, B.A., H. P. Dawson, B.A., and H. V. Deakin, B.A., Trinity; H. Hartridge, B.A., King's; T. J. H. Hoskin, B.A., and H. A. Lucas, B.A., Trinity; R. K. Merson, B.A., Emmanuel; H. A. Richards, B.A., Clare; C. J. Scholtz, B.A., Emmanuel; J. E. Sharp, B.A., Caius; A. G. G. Thompson, Pembroke; and H. A. Williams, B.A., and H. G. Wiltshire, Emmanuel.

THIRD EXAMINATION.

Part I., Pharmacology and General Pathology.—D. S. Bryan Brown, B.A., Downing; E. Calvert, B.A., and C. G. H. Campbell, B.A., St. John's; G. W. B. Garrett, B.A., and B. Haigh, B.A., Caius; R. Heaton, B.A., Christ's; J. M. Jarvie, B.A., Emmanuel; R. H. Mawhood, B.A., Trinity; H. M. B. Nicoll, B.A., Caius; M. J. Petty, B.A., Downing; N. P. Pritchard, M.A., Trinity; A. H. Richardson, B.A., St. John's; R. M. Soames, B.A., Trinity; G. W. Spencer, B.A., St. John's; H. M. Stephenson, B.A., Caius; P. Verdon, B.A., and H. Walker, B.A., Jesus; and S. Wood, B.A., Christ's.

Part II., Surgery, Midwifery, and Medicine.—The following have now satisfied the examiners in all three sections: R. L. Barker, B.A., Caius; A. W. Bourne, B.A., Downing; H. Bowring, B.A., King's; R. D. D. D. Brownson, B.A., St. John's; H. G. P. Castellain, M.A., Trinity; H. J. M. Cursetjee, Caius; F. C. Davies, B.A., Downing; K. J. A. Davis, B.A., King's; H. T. Depree, B.A., Clare; S. Dixon, M.A., Trinity; G. H. Dunn, M.A., Pembroke; C. Ede, B.A., and R. Gamlin, M.A., King's; E. St. G. Goodwin, M.A., J. P. Hill, B.A., and G. Hoffmann, B.A., Caius; J. C. John, B.A., King's; A. C. Johnson, B.A., Downing; R. J. B. Leney, B.A., and D. N. McLeod, B.A., Caius; W. G. Marsden, B.A., Emmanuel; O. de B. Marsh, B.A., Pembroke; R. M. Miller, B.A., Clare; A. H. Moore, B.A., Trinity; A. F. Morcom, B.A., Clare; H. M. B. Nicoll, B.A., and P. A. Opie, B.A., Caius; B. A. Playne, B.A., Pembroke; J. B. Pulling, B.A., Christ's; A. H. Richardson, B.A., St. John's; F. H. Robinson, B.A., Queens'; A. Sandison, B.A., Trinity; W. Shipton, B.A., Emmanuel; C. Strickland, M.A., and F. H. Watson, B.A., Caius; V. T. P. Webster, B.A., Emmanuel; and V. J. Woolley, M.A., King's.

UNIVERSITY OF BIRMINGHAM: FACULTY OF MEDICINE.—The following is the list of successful candidates at examinations held in June:—

I. *Degree of Doctor of Medicine.*—Henry Percy Pickerill.

II. *Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Class II.: Evan Davies, John Selwyn Edwards, Oscar Madeley Holden, Elizabeth Stephens Impey, Charles Crawford Jones, Ronald Douglas Nelson, and Charles Ernest Salt.

III. *Fourth Examination for the Degrees of M.B., Ch.B. (Forensic Medicine, Toxicology, Public Health, and Therapeutics).*—Class II.: George Herbert Alabaster, Ralph Alexander Broderick, Eric Francis Buckler, George Ernest Elkington, David John Evans, Travis Hampson, Elsie Mary Humpherson, John Christopher Jones, John Burman Lowe, Horace Clarence Nickson, Percival Thomas Priestley, Herbert Sheasby, Charles Lovell Spackman, Ronald Joseph Tennant Thornhill, and Alan Ayscough Wilkinson.

IV. *Third Examination for the Degrees of M.B., Ch.B. (Pathology and Bacteriology and Materia Medica and Pharmacy).*—Class II.: Elsie Mary Humpherson. Passed in part of the Examination: James Henry Ritchie (Pathology and Bacteriology). Completed the Examination: David John Evans.

V. *Second Examination for the Degrees of M.B., Ch.B. (Anatomy and Physiology).*—Class II.: John Clifford Brown, John Edward Foley, Henry Gauntlett Langdale-Smith, Arthur David Millington, Kenneth Bernard Pinson, Cyril Alban Raison, Leslie Douglas Roberts, Alfred Percy Smith, Cecil George Teall, Bernard Wood-White, and Montague Sydney Woolf.

VI. *First Examination for the Degrees of M.B., Ch.B. (Physics, Chemistry, and Biology).*—Class II.: John Henry Crosskey, Lillie Mary Donovan, Alice Muriel Evans, George Cecil Mathie, Raymond Fearle Pinson, Hilda Nora Shufflebotham, and Arthur Peregrine Thomson. External candidates: Frank Newey and Baron Theodore Rose. Passed in part of the Examination: Francis Charles Lees (Chemistry and Biology) and Mabel Eliza Prosser (Chemistry and Biology). Completed the Examination: Eric Shirley Jones.

VII. *Degree of Master of Dental Surgery.*—Henry Percy Pickerill.

VIII. *Degree of Bachelor of Dental Surgery.*—Class 1: Humphrey Francis Humphreys.

IX. *Third Examination for the Diploma in Dental Surgery (Anatomy and Physiology and Dental Anatomy and Dental Histology).*—Arthur Bernstein and John Jessop. Completed the Examination: Edgar George Jones.

Russell Memorial Prize in Nervous Diseases.—Oscar Madeley Holden.

VICTORIA UNIVERSITY OF MANCHESTER.—The following candidates have been approved for the degree of M.D.:—

*H. E. Allanson, W. E. Bamber, G. H. Brown, H. H. Bywater, J. F. Corson, *J. R. Hutchinson, G. H. Leigh, *Peter Moran, †R. H. Titcombe, *Herbert Tomlin, H. G. Ward, *Henry Whitehead, *B. M. Wilson, James Wood, M. S. Wood, A. E. Woodall, and *J. S. Young.

* Commendation. † Awarded gold medal.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Julius v. Michel, Director of the Ophthalmic Clinic in the Ziegelstrasse, will retire at the close of the current session.—*Gratz:* Dr. Fritz Hartmann, Extraordinary Professor of Psychiatry and Neurology, has been promoted to the Ordinary Professorship.—*Halle:* Dr. Hans Kathe has been recognised as *privat-docent* of Hygiene.—*Kiel:* Dr. A. Böhme has been recognised as *privat-docent* of Medicine.—*Königsberg:* Dr. Klieneberger, *privat-docent* of Medicine, has been granted the title of Professor.—*Lemberg:* Dr. R. Renckci, *privat-docent* of Medicine, and Dr. M. Herman, *privat-docent* of Surgery, have been promoted to Extraordinary Professorships.—*Naples:* Dr. Alfredo Perrone has been recognised as *privat docent* of External Pathology and Dr. Francesco Visco as *privat-docent* of Pædiatry.—*Prague (German University):* Dr. F. Hofmann of Innsbruck has been appointed to the chair of Physiology in succession to Dr. Gad.—*Rome:* Dr. Giuseppe Franchini has been recognised as *privat-docent* of Internal Pathology.—*Rostock:* Dr. Unterberger has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Siena:* Dr. Metello Francini has been recognised as *privat-docent* of Surgery and Operative Medicine.—*Upsala:* Dr. Gunnar Forssner of Stockholm has been appointed Professor of Pædiatry and of Medicine.—*Vienna:* Dr. Norbert Ortner of Innsbruck has been appointed to the chair of Clinical Medicine in succession to Dr. von Strümpell. Dr. Clemens v. Pirquet of Breslau has been appointed to the chair of Pædiatry in succession to the late Dr. Escherich.

UNIVERSITY OF LEEDS.—At a Congregation of the University held on July 1st, the degree of Doctor of Medicine was conferred on Mr. Harold Vallow.

The Worthing education committee has received a letter from the secretary of the Worthing Hospital intimating that until the effect on the hospital of the proposed Insurance Bill has been ascertained, it is not proposed to make any arrangements for the X ray treatment of children suffering with ringworm.

Dr. J. E. M. Finch, medical superintendent of the Leicester Borough Lunatic Asylum, has indicated his intention to resign from that post this year. In September Dr. Finch will complete 42 years of service. He was appointed medical superintendent when the asylum was built in 1869. It then had accommodation for 300 patients; additions and enlargements since have brought up its capacity to 856.

ABERCHIRDER COTTAGE HOSPITAL.—The annual meeting of the trustees of the Rose-Innes Hospital, Aberchirder, took place on June 30th. The balance sheet for the year was submitted, and showed an income of £191 5*s.* 11*d.* and an expenditure of £184 2*s.* 10½*d.*, leaving a balance of £7 3*s.* 0½*d.*; and also showing a bank balance of £62 and an endowment fund of £3860 11*s.* 4*d.*

THE BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual meeting and banquet of this association will be held at the Garden Club, Coronation Exhibition, on Saturday, July 22nd, at 7.30. All graduates of the University of Brussels are welcome, and members are invited to bring ladies. Tickets, price 7*s.* 6*d.* (not including wine), may be obtained from the honorary secretary, Dr. Arthur Haydon, 23, Henrietta-street, Cavendish-square, London, W.

ASSOCIATION FOR THE ORAL INSTRUCTION OF THE DEAF AND DUMB (11, FITZROY-SQUARE, W.).—At the Portman Rooms, Baker-street, W., on Monday next, July 17th, at 3.30 P.M., the annual meeting of this association will be held, and a short illustration of the system given. The Right Hon. Sir John Gorst is announced to preside. All medical men will be welcome. The admirable educational work done by this association is too little appreciated by the public.

WOMEN'S IMPERIAL HEALTH ASSOCIATION.—A *fête* and two days congress were held last week under the auspices of this association. The object of the association is to disseminate the elementary principles of hygiene among the general public through the women of the Empire, instructing them in the care and nurture of children, the values of food and cookery, the prevention of disease by simple knowledge of sanitation, and so forth. Lectures and educational meetings are held in London and the provinces, lantern slides and cinematograph pictures are shown, and two caravans, one staffed by medical men and the other by nurses, travel through the country holding health meetings and demonstrations in all the towns and villages they pass through. The Duke of Argyle (in the absence of H.R.H. Princess Louise) opened the *fête* in the Botanic Gardens, London, on July 5th, when one of the caravans was open to inspection. The congress was held at the Caxton Hall, Westminster, on July 6th and 7th, and the subjects dealt with included "Tropical Diseases as they Affect Women and Children" (Dr. C. W. Daniels), "The Prevention of Plague" (Dr. F. M. Sandwith), "The Endowment of Maternity and its Relation to Eugenics" (Dr. R. Murray Leslie), and "The Tuberculosis Problem" (Dr. Marion B. Andrews). An interesting memorandum on some of the medical organisations at work in India for the relief of women, by Surgeon-Lieutenant-Colonel Sir Warren Crooke-Lawless, C.I.E., was read. It revealed the rapid and extraordinary development of the association commonly known as the Countess of Dufferin's Fund, founded in 1885 for the provision of female medical practitioners for the native women, who were not allowed to see or consult doctors of the opposite sex. It also established a system of scholarships to help Indian ladies to become duly qualified practitioners, and the scheme met with the cordial support of all India. Another association which has steadily increased and is doing excellent work is the Victoria Memorial Scholarship Fund, established by the late Lady Curzon to improve the conditions of childbirth in India. Speaking of the more serious effect of tropical climate upon women than upon men, Dr. Daniels maintained that it was due to the lack of outdoor occupations and interests among women who, leading idle lives, lost ability to resist the enervating influence of the climate. Dr. Sandwith insisted on the necessity for keeping watercourses absolutely clear of all weeds and other growths in order to prevent the spread of plague through mosquito beds, and gave some interesting facts concerning rats and the fleas which have been proved a great source of infection. The discussion on the Endowment of Maternity might be described more as having a political and social economy bearing than as a strictly medical or "health" subject, but it brought out the co-responsibility of the father in all maternal relations with the child. The possibility of State endowment interfering with such responsibility was also referred to. The discussion emphasised the opinion that, in spite of the falling birth-rate, our population and the population of America are maintained by the marked decrease in the death-rate, owing, as Dr. Woods Hutchinson believed, to the improved health and fitness of the mothers.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Bill in Committee.

THE House of Commons commenced the consideration of the National Insurance Bill in committee on Wednesday, July 5th. The Chancellor of the Exchequer is in charge of the measure, but he is receiving the assistance of several other Ministers in conducting it through the House. The Bill contains 87 clauses, 59 of which have relation to National Health Insurance. The administration of medical benefit is dealt with in Clause 14, and it is on it that the demands of the medical profession for fairer treatment will be raised in their acutest form. However, matters of the very closest concern to the profession arise on other clauses. The second part of the Bill deals with unemployment insurance.

On Wednesday, July 5th, a motion was made to enable the Committee to divide the Bill into two Bills, but this proposal was defeated by 254 votes to 165. In the course of the discussion on this motion Mr. LLOYD GEORGE made two important statements. He said, in the first place, that subject to the limitation that the commitments of the Exchequer should not be increased he should not regard any change which the House would think fit to make in the Bill either as a defeat of the Government or as a defeat inflicted on himself. If there were any suggestions from any part of the House which commended themselves to the House as a whole as better than the suggestions of the Government, by all means it was the duty of the House to carry those suggestions through. His second important statement had reference to the demands of the medical profession. "After all," he said, "the criticism which has most body in it as far as one can judge from what has appeared in the press in that of the doctors. The criticism of the doctors has had far more attention given to it in the press than any other criticism which has been directed to the Bill. Substantially I think the honourable Member (Mr. LANSBURY) will find that they are reconciled to the proposal which the Government has made." In the course of the day's debate Mr. LLOYD GEORGE let again fall a similar remark in regard to meeting the opposition of the medical profession.

Clause I. of the Bill concerns insured persons. An amendment to include in the scope of the Bill the wives of insured persons was rejected. A proposal to include in the category of insured persons all the members of five years' standing of friendly societies becoming approved societies was opposed by Mr. LLOYD GEORGE on the ground that it would admit well-to-do persons to the benefits of the Bill. He pointed out that this would really entail a further inroad on the private patients of medical men. This proposal was defeated by a large majority.

Towards the end of Wednesday's debate Mr. JOYNSON-HICKS brought forward an amendment to exclude from the voluntary contributors persons whose income amounted to £160 a year and upwards. In accepting the amendment, Mr. LLOYD GEORGE said that its adoption would simplify matters so far as the medical profession was concerned. One of the greatest difficulties which the Government had had was the apprehension under which medical men were labouring that the class of patients which enabled them to give more liberal treatment to the lower wage-earning community would be taken from them and that they would have in future to deal with them on contract terms. Therefore, the Chancellor added, he could not resist an amendment of this kind. He agreed that a great scheme of national insurance of this kind should provide medical and maintenance benefits for those who are unable to provide them for themselves, and he thought that those who

were over the income-tax limit hardly came within that category. The amendment was adopted. Clause I. as amended was agreed to before the House rose on Wednesday night.

On Thursday, July 6th, the House of Commons considered the second clause of the National Insurance Bill, which dealt with exemptions to the categories of insured persons. On it the Chancellor of the Exchequer intimated that he had directed his actuaries to prepare statistics which would enable him to deal in a special class with hospital nurses, who as part of their contract service already enjoyed free medical treatment and care during sickness, but not disablement benefit. Later in the evening, in committee of ways and means, a resolution was passed authorising the payment of sums necessary for carrying out the purposes of the Bill out of moneys provided by Parliament. Sir HENRY CRAIK strongly criticised the provisions of Clause 14, which throws upon county councils the burden of making up the excess expenditure on medical benefit to the extent of one-half in cases where it "is reasonable and proper in the circumstances."

These points of financial adjustment were again discussed on Friday, July 7th, on the report of the money resolution. Various points dealing with the Post Office contributors and the sanatorium benefit were raised in the course of the debate. Sir PHILIP MAGNUS expressed the opinion that the House should be informed of the communications which had taken place between Mr. LLOYD GEORGE and the medical profession. Dr. ESMONDE later in the debate expressed the opinion that it was rather unfair to ask the Chancellor to give the House the facts that led him to make a statement in connexion with the settlement with the medical profession. It was perfectly well known that there had been deputations to the Chancellor of the Exchequer and interchange of views, and it was also well known by those who were studying this question that no arrangements could possibly be made between the medical profession and the Chancellor until such time as they were submitted on July 21st to a representative medical meeting. Therefore Dr. ESMONDE thought that it was hardly fair to press the right honourable gentleman at this stage to make any further statement with reference to that question. Mr. LLOYD GEORGE, in his reply, did not enlighten the House as to the nature of his negotiations with the medical profession. He alluded, however, at some length to the sanatorium part of his scheme as an experiment well worth making, but most of his points on it are familiar now to those who have followed his utterances on the Bill. The report of the financial resolution was agreed to.

On Tuesday evening when the House of Commons came to the consideration of Clause 8 (Rights and Conditions of Benefits) an attempt was made to induce the Chancellor of the Exchequer to give a statement of the position of his negotiations with the medical profession. Clause 8 provided that one of the benefits which insured persons were to receive was medical benefit, and Mr. JOYNSON-HICKS moved as an amendment the deletion of this provision on the ground that the House ought to have the pending negotiations explained before it dealt with medical benefit. Mr. LLOYD GEORGE at once replied that the proper place to discuss the arrangements with the medical profession was on Clause 14. He said that it was through no fault of his that he was not in a position to inform the House as to the exact situation, but certain proposals were before the medical profession. Debate in Parliament would undoubtedly prejudice the discussions now going on. When Clause 14 was reached, he was sanguine that an arrangement would have been arrived at satisfactory to the medical profession and to those who wished to see medical treatment given under the best conditions. He asked Mr. JOYNSON-HICKS not to press his amendment, as it would make the discussions with the medical profession very difficult. He must at the present stage decline to enter into full particulars on this matter until he heard the views of the medical profession on the proposals before them. Otherwise there would be "an infinity of harm."

Some discussion took place as to the necessity of securing to the House full opportunity to deal with the effect of the Bill on the medical profession after a disclosure of the negotiations had been made. Sir ROBERT FINLAY expressed the view that it was essential, before the House committed itself to the inclusion of medical benefits, that honourable Members should know in general terms what the attitude of the Chancellor of the Exchequer to the medical profession was going to be. Dr. ADDISON said that he was quite confident that any detailed discussion of the position of the medical profession at this stage would be thoroughly mischievous. Sir PHILIP MAGNUS took a similar line to that followed by Sir ROBERT FINLAY. Sir HENRY CRAIK, who spoke as the representative of 5000 medical graduates, asked for assurances for an adequate discussion subsequently of the points concerning the medical profession. Mr. LLOYD GEORGE still kept to his view that these quetions were appropriate only to Clause 14. He mentioned that within the last hour or two he had received a communication from the British Medical Association, and it would be hard to force the Government to pronounce upon it then. He went on to allude to the question of income limit, and remarked that it was the only question that still presented difficulty. The amendment proposing a "£2 a week limit" could, he said, be raised on Clause 14. He promised that if it was found out of order or inconvenient to discuss such matters on Clause 14 he would undertake to have Clause 8 recommitted in order that they might be debated. This pledge satisfied the House, and the amendment of Mr. JOYNSON-HICKS was withdrawn.

On Wednesday the House of Commons had the subject of the sanatorium benefit before it. The debate in its earlier stages took the shape of a general discussion on the treatment of tuberculosis, and many interesting medical views as to the best way to deal with the disease were quoted. Later a proposal was brought forward to extend the sanatorium benefit to the wives and children of insured persons. Mr. LLOYD GEORGE could not accept it owing to the additional cost which it would entail. However, he showed himself sympathetic to a suggestion that this extension of the benefit should be undertaken by local authorities, with assistance from the Treasury.

Amendments to National Insurance Bill.

Fresh amendments to Clause 14 of the National Insurance Bill dealing with the administration of medical benefit have been put on the notice paper. The important one put down by the Chancellor will be found elsewhere (see p. 194). Many of these are duplicates of amendments of which notice has already been given, and others approximate closely to the terms of those which have already been recorded. Several new amendments may be noted.

Mr. BARTON has an amendment to secure that the rate of medical remuneration is to be so calculated as to produce an amount equal to that which would be produced by private practice at the rates general in the district.

Mr. HUME-WILLIAMS will propose to insert a provision in the clause to the effect that "every Local Health Committee shall prepare a panel comprising the name of every medical practitioner in the locality who shall intimate a desire to have his name placed thereon, from which panel an insured person shall have the right to choose the medical practitioner from whom he is to receive such medical attendance as he may become entitled to under this Act. Provided that, having made such choice, the insured person shall not be at liberty to change his medical practitioner more than once in 12 months without the sanction of the Local Health Committee."

The honourable Member has given notice of another amendment in the following terms: "Every Local Health Committee shall have the power, on the request of an insured person or on that of the medical practitioner attending such person, to sanction the obtaining of a second medical opinion in regard to the patient, whether such second opinion has already been obtained or not at the time of such request; and in cases where such sanction has been obtained the expenses incident to the obtaining of such second opinion shall be met by the Local Health Committee and included in the amount provided for by Subsection (4) of this section."

A large number of amendments to protect pharmaceutical chemists have also been placed on the paper.

Amendments by the Chancellor.

Mr. LLOYD GEORGE has now placed on the notice paper several amendments relating to matters concerning the medical profession. One of those amendments on Clause 14 sets out that the Local Health Committee shall make arrangements with duly qualified medical practitioners in accordance with regulations made by the Insurance Commissioners. (See p. 194, where the amendment is printed in full.)

In an amendment which he has put down to Clause 41 the Chancellor of the Exchequer proposes that one of the Insurance Commissioners at least shall be a duly qualified medical practitioner who has had personal experience of general practice. On the Advisory Committee he also proposes that there shall be duly qualified medical practitioners who have personal experience of general practice. The Chancellor in another amendment proposes that the Local Health Committees shall consist of not less than 12 or more than 24 members. The numbers contemplated by the Bill are 9 and 18 respectively. According to a further amendment two members of the Local Health Committee "shall be elected in manner provided by regulations made by the Insurance Commissioners, either by an association of the duly qualified medical practitioners resident in the county or county borough which may be formed for the purpose under such regulations, or if no association has been formed, by such practitioners and the others, of whom one at least shall be a duly qualified medical practitioner."

Final Report of the Royal Commission on Tuberculosis.

The final report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis was issued to Members of the House of Commons on Tuesday evening. The report is signed by Sir W. H. POWER, Professor G. SIMS WOODHEAD, Professor SIDNEY MARTIN, Principal MCFADYEAN, and the late Sir R. W. BOYCE. The Commission was appointed in 1901, and the questions which it was empowered to investigate were: (1) whether the disease in animals and man is one and the same; (2) whether animals and man can be reciprocally infected with it; and (3) under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances, favourable or unfavourable, to such transmission. These questions are discussed in the final report. It may be mentioned that the investigations of the Commission have cost more than £75,000.

HOUSE OF COMMONS.

WEDNESDAY, JULY 5TH.

Milk Legislation.

Mr. COURTHOPE asked the President of the Local Government Board when the Milk and Dairies Bill would be introduced.—Mr. BURNS replied: I hope to introduce the Bill in the course of next week.

New Patent Medicine Stamp.

Mr. FLETCHER asked the Home Secretary whether a new medicine stamp was being prepared which would more clearly indicate that the stamp did not imply any Government guarantee.—Mr. CHURCHILL wrote in reply: I am informed that the answer is in the affirmative.

Pulmonary Tuberculosis in Germany.

Sir J. ROLLESTON asked the Chancellor of the Exchequer whether his attention had been called to the fact that during the ten years ending 1908 the death-rate from pulmonary tuberculosis was 13·3 per 10,000 of the population of the United Kingdom and 17·9 per 10,000 of the population of that part of the German Empire for which returns had been furnished to the Registrar-General for England and Wales; and whether he could give the House information as to the cause of the higher death-rate from this disease existing in Germany despite State sick insurance there for many years.—Mr. LLOYD GEORGE replied: It is undoubtedly the case that the rate of mortality from pulmonary tuberculosis is higher in Germany than in the United Kingdom. There has been a large reduction in the death-rate from this cause in Germany since the sickness and invalidity insurance laws have been in full operation, and German authorities attribute the reduction in part to the beneficial influence of these laws upon the health of the nation, and particularly to the measures adopted, including an extensive system of sanatoria, for the treatment of consumption in the early stages of the disease. The same authorities agree that unsatisfactory conditions of life, and especially of housing, contribute largely to the existing high rate of mortality from consumption.

THURSDAY, JULY 6TH.

Medical Referees.

Mr. HODGE asked the Secretary of State for the Home Department whether he was aware that it was becoming common for medical referees under the Workmen's Compensation Act to accept fees from, and to appear as witnesses for, insurance companies in cases arising in the courts to which such referees were attached; whether his attention had been drawn to a case at Gloucester, on May 20th last, where the judge stated that, although it was a case which he naturally would have referred to a medical referee of the court, he could not do so because the referee had given evidence, and there being no power to appoint another referee he would have to act as doctor himself; and whether he could take any steps to prevent a recurrence of such incidents and secure a more impartial standing on the part of the medical referees.—Mr. CHURCHILL replied: The Home Office regulations forbid medical referees from acting for the employer or insurance company in any case in which the workman is receiving a weekly payment for compensation or which is otherwise likely to come before them as referees, and I believe these instructions are generally observed. In the Gloucester case I find on inquiry that the workman was sent to the medical referee under a mistaken impression on the part of the applicant's solicitor that Stroud was outside his district. I will consider whether an additional referee should be appointed, but it is in the power of the judge in such a case to call in a medical referee from an adjoining district.

Mr. GILL: Has the right honourable gentleman considered the question of the appointment of medical referees to devote the whole of their time to the duties, and may I ask whether he will make such appointments in accordance with the promise made by Lord Gladstone when he was Home Secretary?—Mr. CHURCHILL: I have not had the opportunity of studying the reports of my predecessor, but I will take steps to look into the matter if the honourable gentleman will put a question on the paper.

Tropical Diseases Investigation.

Dr. HILLIER asked the Chancellor of the Exchequer whether he proposed increasing the grant to tropical diseases investigation, and if so by what amount.—Mr. HOBHOUSE (Secretary to the Treasury) answered: The Treasury has recently sanctioned the appointment of a special commission under Sir D. Bruce, and including at the outset the services of Professor Newstead, to make further investigations into trypanosome diseases, the cost of which, amounting for this year alone to about £5000, will ultimately fall upon the Exchequer. In view of this large provision of money the Chancellor of the Exchequer does not see his way to increase the amount of the grants provided in the estimates for tropical diseases investigation, as Sir D. Bruce's commission will be carrying out this very work with great prospects of successful results.

Poor-law Cases in Sanatoria.

Mr. GOULDING asked the Chancellor of the Exchequer whether it would be possible for boards of guardians to send Poor-law cases to sanatoria established under the National Insurance Bill.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) wrote in reply: The position of sanatoria which are established by means of grants from the Local Government Board in regard to the accommodation of patients other than insured persons will be a matter for arrangement.

Small-pox and Vaccination in the Navy.

Dr. HILLIER asked the First Lord of the Admiralty to state the number of cases of small-pox in the Navy reported annually from 1897 to the present time; and what were the regulations in regard to vaccination in the Navy.—Mr. MCKENNA furnished the following written answer: I. Statement showing the number of cases of small-pox in the Royal Navy for the years 1897–1910 inclusive: 1897, 51; 1898, 24; 1899, 15; 1900, 13; 1901, 9; 1902, 15; 1903, 3; 1904, 12; 1905, 2; 1906, 6; 1907, 3; 1908, 4; 1909, *nil*; 1910, 1. II. Regulations respecting vaccination in the Navy: All persons entering the service are to be revaccinated; should no results follow on the first operation a second vaccination is invariably to be performed. In the case of candidates for artificer and artisan ratings the operation is to be deferred till they have been finally accepted for the service. All persons who have not been revaccinated between their first entry into the service and the age of 18 shall be revaccinated as soon as possible, however good their primary vaccination cicatrices may appear, or even should they present unmistakable evidence of having suffered from small-pox previous to that age. The revaccination is to be made with calf lymph from a recognised establishment which is carried on under proper supervision. No person shall be considered revaccinated who has had the operation performed with lymph taken from the arm of a revaccinated person, but all persons so revaccinated shall again be vaccinated with lymph taken from the sources specified above. A notation of the date of revaccination is to be made by the medical officer on each man's medical history sheet, specifying the result, whether successful or otherwise, and such cases are only to be considered successful in which either vesicles, normal or modified, or papules surrounded by areolæ, have resulted. When the first operation is followed by no result, which should, however, be rare when it has been carefully performed, vaccination should be repeated in 14 days from the first attempt. The medical officer, as soon as convenient after he joins a ship, will satisfy himself by personal inspection that each officer and man has been successfully vaccinated, and when necessary revaccinated, and so also with regard to every officer and man who may subsequently join, except those borne for disposal or as temporary supernumeraries in home ships, and whose stay in them will be but short.

MONDAY, JULY 10TH.

Medical Examination of Lead-workers.

Mr. WEDGWOOD asked the Secretary of State for the Home Department, with regard to the certifying factory surgeons for the districts of Burslem, Hanley, Stoke-on-Trent, and Tunstall, what was the number of lead-workers examined monthly by each certifying surgeon; what remuneration in respect of such work did each certifying surgeon receive annually; and did the payment include the treatment of lead-workers suffering from lead poisoning or advice as to treatment.—Mr. CHURCHILL replied: The average monthly numbers of lead-workers examined are approximately as follows: Burslem, 1400; Hanley, 1400; Stoke, 2100; Tunstall, 650. The surgeons' fees for these examinations are under the Act required to be paid by the employer, and I cannot therefore give the total amount of remuneration received for the work. The payment includes only the examination of the workers for the purposes of the special rules, and does not therefore cover treatment or any advice as to treatment, though I understand the surgeons often advise workers to obtain treatment either of their own medical man or at the North Staffordshire Infirmary. I should like to add that the chief inspector and the medical inspector of factories have a very high opinion of the manner in which the work of examination is done by the surgeons in question.

Furloughs at Netley.

Mr. PERKINS asked the Under Secretary of State for War whether the Royal Victoria Hospital at Netley was understaffed; whether recent orders limit furloughs granted to men of the Royal Army Medical Corps to 14 days, while men of other regiments going on leave to Ireland and Scotland were given six weeks, and were sure of at least a month's furlough annually; and whether leave could only be obtained when the applicant was successful in finding another man to do his duty.—Colonel SEELY said in reply: Netley Hospital staff is somewhat under establishment owing to the Royal Army Medical Corps at home being short of establishment. Consequently furloughs can only be sparingly granted, and these are being generally limited this summer to 14 days. The furlough season at Netley, however, is not, as with other troops, confined to the winter months, and the furloughs are given when the men can best be spared. It is not the case that leave can only be obtained when the applicant is successful in finding another man to do his duty.

TUESDAY, JULY 11TH.

National Insurance Topics.

Mr. ROWNTREE asked the Chancellor of the Exchequer to state the approximate number of persons that were affected by limiting those who were eligible as voluntary contributors to those whose income did not exceed £160 per annum, and the estimated saving to the fund by this limitation.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) replied: It has always been anticipated by my right honourable friend that the number of persons with incomes above £160 who would take advantage of the privilege of voluntary insurance would be small. I do not think the assumptions explained in Paragraph 17 of the actuaries' report would be much affected by the change.

Mr. JAMES PARKER asked whether, in view of the power given to the Local Government Board to utilise any Poor-law institution for the purpose of the provision of sanatoriums and other institutions for the treatment of tuberculosis or such other diseases, under Section 47 of the National Insurance Bill, clauses would be inserted in the Act to safeguard the interests of officers in such manner as was provided in Section 120 of the Local Government Act, 1888, and Section 28 of the City of London (Union of Parishes) Act, 1907.—Mr. HOBHOUSE answered: No such power is given by Clause 47 which enables the Local Government Board to make grants for the provision of sanatoriums where required.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ARCHER, E. W., L.M.S.S.A. Lond., has been appointed House Surgeon at the Bristol Royal Infirmary.

CHITTY, HUBERT, M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Senior Resident Officer at the Bristol Royal Infirmary.

CLARKE, RICHARD CHRISTOPHER, M.B., Ch.B. Bristol, has been appointed House Surgeon to the Ear, Throat, and Nose Department at the Bristol Royal Infirmary.

COOKSON, HENRY ANSTEY, M.B., B.Ch. Edin., has been appointed House Physician at the Bristol General Hospital.

DUNNE, ARTHUR B., M.B., B.C. Cantab., D.P.H., has been appointed Medical Officer of Health to the Bentley-with-Arksey Urban District Council.

HOPWOOD, JOSEPH STANLEY, L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol Royal Infirmary.
KINGSTON, STUART HARDY, L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol Royal Infirmary.
MALHERBE, STEPHANUS ERNST, M.B., B.Ch. Edin., has been appointed House Surgeon at the Bristol General Hospital.
MARLE, S., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol General Hospital.
PICKIN, FREDERICK HAROLD, L.R.C.P. Lond., M.R.C.S., has been appointed Casualty House Surgeon at the Bristol General Hospital.
STATHAM, REGINALD SAMUEL SHERRARD, M.B., Ch.B. Bristol, has been appointed Resident Obstetric Officer at the Bristol Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDARE EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.
ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £120, with board, &c.
AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.
BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board and residence.
BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer and Pathologist. Salary £150 per annum, with board, apartments, and laundry.
BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.
BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.
BURNLEY, VICTORIA HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with residence, board, and washing.
CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, attendance, &c.
CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.
CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.
CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four or six months. Salary at rate of £50 per annum, with board, lodging, and washing.
COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.
DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing.
DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.
DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.
ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—Honse Surgeon. Salary £72 per annum.
FULHAM ANTITUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250.
FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.
GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.
HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident Medical Officer, unmarried. Salary £200 per annum, with board, and residence. Also House Physician for six months. Salary 30 guineas.
HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon and House Physician, both unmarried, for six months. Salary in each case £30, with board, residence, &c.
LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.
LONDON HOSPITAL, E.—Six Honorary Dental Surgeons.
LONDON LOCK HOSPITAL.—House Surgeon to the Female Hospital. Salary £100 per annum. Also Assistant House Surgeon. Salary £60 to £80 per annum, each with board, lodging, and washing.
LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing. Also Assistant House Surgeon for six months. Salary at rate of £105 per annum.
LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.
MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Honorary Physician. Also Pathologist and Registrar. Salary £75 per annum.
NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Anatomy.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Two House Surgeons. Salary £80 each per annum. Also Casualty Officer, unmarried. Salary £60 per annum. All with board, lodging, and washing.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.
NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.
NOTTINGHAM WORKHOUSE INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.
POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.
PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.
PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Salary £60 per annum, with board, residence, and washing.
PRESTWICH, MANCHESTER, COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, and washing.
PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician. Salary £50 per annum, with residence, board, and laundry.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.
ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum.
SALISBURY, FISHERTON HOUSE ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, washing, lodging, and attendance.
SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.
SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £60 each per annum, with board, lodging, and washing.
SHROPSHIRE EDUCATION COMMITTEE.—Medical Inspector in the Public Elementary Schools. Salary £250 per annum.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.
SOUTHEND-ON-SEA, BOROUGH OF.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £250 per annum.
TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, washing, &c.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon, each for six months. Salary £40, with board, lodging, and laundry. Also Anæsthetist. Salary £37 16s. per annnm.
WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140 per annum, with board, &c.
WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.
WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer., Salary £120 per annum, with rooms, attendance, &c.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.
WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer, unmarried. Salary £140 per annum and all found.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bexhill, in the county of Sussex; at Creetown, in the county of Kirkcudbright; and at Wigton, in the county of Cumberland.

Births, Marriages, and Deaths.

BIRTHS.

BATES.—On July 2nd, at "Westwood," Central-hill, Upper Norwood, S.E., the wife (*née* Lyon) of Joah Bates, M.R.C.S., L.R.C.P., of a daughter.
HARDENBERG.—On July 6th, at Duffield House, Watford, the wife of E. F. H. Hardenberg, M.B., M.R.C.S., L.R.C.P., of a son.
INKSON.—On July 7th, at West Kent Nursing Institution, Mount Sion, Tunbridge Wells, the wife of Major Inkson, V.C., R.A.M.C., Bangalore, India, of a daughter.
KEELING.—On July 7th, 1911, at Attleborough, Norfolk, the wife of G. S. Keeling, M.D., a son.
PARKHURST.—On July 5th, at "Rathan," Newhaven, the wife of Rodie Parkhurst, M.B., C.M., of a son.
SMITH.—On July 11th, at Richmond House, High-street, Manchester, the wife of J. W. Smith, F.R.C.S., of a son.

MARRIAGES.

LEIGH CANNEY—BETTS.—On July 8th, at St. George's, Hanover-square, Henry Edward Leigh Canney, M.D. Lond., to Kathleen Mordaunt FitzGerald, only daughter of Edward George Betts, M.R.C.S. Eng., and of Mrs. Betts.

DEATHS.

DALY.—On July 3rd, at 19, Myrtle Hill-terrace, Cork, Pierce Joseph Daly, M.D.
MENNELL.—On July 5th, at St. Thomas's Home, Zebulon Mennell, M.R.C.S., L.S.A., aged 60.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH MATTERS IN GAMBIA.

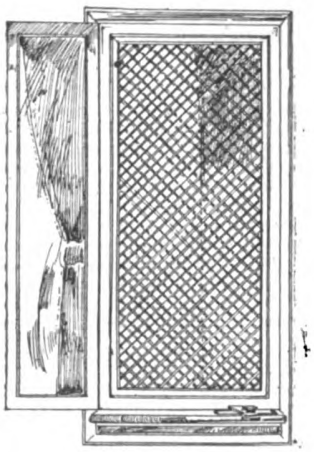
FROM the medical section of the report on the Gambia (West Africa) Blue-book for 1910, prepared by the Colonial Secretary, Lieutenant-Colonel O'Brien, C.M.G., it appears that the general health of the colony remains good.

In Bathurst, the chief town, the sanitary work is controlled by a Board of Health. During the year under notice a special grant of £1000 was sanctioned by the Secretary of State for sanitary purposes, and part of it was expended in providing sanitary dustbins for the collection of rubbish and in the erection of three incinerators for the rapid disposal of refuse, which, after being burnt, is used to fill up depressions. The board continues to give close attention to anti-malarial work in clearing watercourses and removing receptacles which might form breeding-places for mosquitoe. The Gambia now shares with the colony of Sierra Leone the services of a senior sanitary officer. The free issue of quinine mixture at the hospital to all comers, and its regular issue to all children attending school and also to members of the police force and to men of the West African Frontier Force and their wives and families continue. The public, too, are coming in increased numbers to take advantage of this prophylactic treatment. The practice of sleeping in mosquito-proof rooms or under mosquito curtains is invariable among the Europeans and is being adopted by some of the more educated natives. All Government officials are provided with mosquito-proof cubicles and also with separate mosquito-proof shelters in which they can sit and work or read during the day. This latter provision is probably the cause of the smaller number of days spent by European officials on the sick list on account of malaria during the past year and of the general improvement in their health. A considerable advance in the number of tanks which are used for the storage of drinking water, obtained from the roofs of houses, was made during the year. The public wells are gradually being fitted with Jonets water elevators, which have proved a great success, as they are very efficient in preventing pollution of the water, and, further, they render the wells fly-proof. The war against mosquitoes and the extermination of their breeding-places have been actively pursued under considerable disadvantages, but it is hoped that, with the appointment of a European town warden and a larger sanitary staff, considerable progress will be made in the current year. Lectures on elementary hygiene and sanitation continue to be given to school teachers, and a simple course is to be added to the curriculum of the school.

In the Protectorate (the population of which is roughly estimated at 152,000) the special attention of the Commissioners and the medical officer is given to the sanitation of the towns and villages, and the practice of awarding prizes to the cleanest village in each province is maintained. At the same time it is to be feared that it must be a long time before the chiefs and headmen will realise the necessity for systematic cleaning and sanitation; only in the expectation of a visit from a commissioner or the governor is anything done. A small outbreak of small-pox occurred among the men of the West African Frontier Force. Every precaution was taken, so that only three soldiers and one follower were attacked by the disease, and all made good recoveries. There were 1011 vaccinations performed in Bathurst and 336 in the Protectorate. The lymph was imported, as in previous years, from Liverpool, but although the same precautions were taken to preserve its activity the results obtained were not so good as in the previous year. The climate of the Gambia during the dry season, from the beginning of December to the middle of May, is pleasant and not unhealthy. The total rainfall in 1910 was 44·0 in. as compared with 56·99 in. in 1909. The maximum shade temperature was 104° in March and the minimum 57° in January. Victoria Hospital at Bathurst is thoroughly equipped and has 50 beds. It is now possible to segregate at a moment's notice 20 or more patients in the event of yellow fever breaking out. The establishment consists of three European medical officers resident in Bathurst, and four European nursing sisters (from the Convent of St. Joseph de Cluny in Paris) attached to the hospital, together with a native staff, consisting of a chief dispenser, four assistant dressers, and three male and two female nurses. The total admissions to the hospital during the year were 669 (of whom 22 died); out-patients, 7440. The contagious diseases hospital, situated two miles from Bathurst, proves of great service, but there is a considerable want of a quarantine station or camp. At the McCarthy Island Dispensary, 19 in-patients and 1896 out-patients were treated. The dispensary is under the charge of a dispenser, with the supervision of the Protectorate medical officer. A new hospital is now in course of construction at McCarthy Island, which will consist of one European ward, two native wards, and an isolation ward, and a resident medical officer will be appointed to take charge of it. This will be a great boon to both the European and the native population of the up-river provinces.

A NEW WINDOW SCREEN.

WE have been supplied with particulars of a new form of window screen, devised by Mrs. H. W. Morris, of 24, Minard-road, Catford, S.E., which aims at purifying the air on its admission to a dwelling room and at preventing draughts when the window is open during a high wind. The screen consists of a frame wherein are mounted two adjacent panels of reticulated material, between which is placed a sheet of muslin. The screen can be quickly fitted into the casement



of a window, or it may entirely replace the casement. It is not limited to sliding sash windows. The frame is intended to last for several years, the muslin screen being changed when soiled, or if desired the latter can be replaced by antiseptic gauze. This invention has the merit of ensuring a supply of fresh filtered air without the usual disadvantages associated with widely opened windows, and it is simple and easily adjustable.

A THERMOMETER RETAINER.

Surgeon J. Leslie Barford, R.N., of H.M.S. *Impregnable*, Devonport, has sent us the following description of a simple retainer for a thermometer:—

I have devised a very simple preventive for the promiscuous slipping out of clinical thermometers from between the lips of careless patients. It consists of about 1/8 in. of stout rubber tubing of about 3/10 in. diameter, but with a very small lumen, such as forms the essential part of a Foulis' tourniquet. This ring is moistened and passed over the bulb of the thermometer for a distance of an inch or slightly more. Many thermometers have a natural groove here. When the thermometer is put in the mouth of a patient the ring lies between the lips and teeth and is a very material help in retaining the instrument even should the lips be slightly parted. The rings cost next to nothing—one spare bit of tourniquet tubing could be cut up with a sharp knife into dozens of them. They can be detached with the greatest ease, but there is no obvious objection to their remaining on the thermometers and soaking in the disinfectant in the ward; but in this case a practical point is to employ a vessel with a brim wider than its base. Otherwise, in quickly withdrawing a thermometer, its ring may catch in that of another and drag it out of the vessel with disastrous results. This very simple device should prove useful in out-patient departments or in establishments such as a boys' training ship, where the temperatures of more or less casual patients are constantly being taken. While in use in the sick bay of my ship not a single thermometer has been broken by being dropped from a boy's mouth—hitherto a frequent accident.

CHOLERA AND PLAGUE IN THE CAUCASUS.

Mr. P. Stevens, British Consul for the district of Batoum, in his report for the year 1910, remarks that it is not surprising, in view of existing sanitary conditions in the localities concerned, that public health was anything but satisfactory. Cholera was prevalent throughout the district, in several localities in epidemic, and in others in sporadic form. The population of the Northern Caucasus suffered more from the disease than the population of the Trans-Caucasus. Cholera was exceptionally virulent in the province of Kuban, and the governments of Stavropol and Astrakhan, the polluted waters of the local rivers being principally accountable for the severity with which these districts were visited by the disease. In the Trans-Caucasus cholera did not appear to claim so many victims as in the districts just referred to, although its extension was general. Fears are entertained that a still more terrible visitation of cholera will be the direct result of last year's epidemic.

Two isolated cases of bubonic and pulmonary plague, one with fatal issue, occurred at Batoum in 1910, but the further spread of the disease was averted by the removal of the patients to the isolation wards, the adoption of stringent quarantine, and other precautionary measures. The extermination of rats was undertaken by the local municipal authorities, and rat-poisoning and rat-catching parties were organised under two medical practitioners of the town. It is difficult to give any idea as to the number of rats which they succeeded in killing, but report has it that several rats caught by them were infected with the plague bacillus. Plague also continued to be prevalent during the year in the Steppes of the government of Astrakhan, where it is reported to have carried off a much larger number of victims than in 1909.

MESSRS. ALLEN AND HANBURYS' REVISED PRICE LIST.

Messrs. Allen and Hanburys have sent us a copy of their illustrated revised general price list. The adoption of the thumb index renders this book very convenient for reference. In Section VI., under the head of general information, will be found many details of value to the practitioner, addresses of societies, nursing institutions, much practical detail as to the method of obtaining suitable cultures for bacterial vaccines and the estimation of the opsonic index, posological tables, information concerning dentition, food composition, infant feeding, urine testing, and water analysis. The advantages of various British and foreign spas are enumerated. Messrs. Allen and Hanburys will be glad to receive inquiries from interested members of the medical profession who have not received a copy.

Maryland asks whether a locum-tenent, receiving £4 4*s.* per week and board and lodging, should be insured against claims for accidents? Under the Workmen's Compensation Act, 1906, a person not employed in manual labour whose remuneration exceeds £250 per annum would not be entitled to claim for accidents. A locum-tenent receiving £4 4*s.* per week and board and residence would clearly be in receipt of an income exceeding £250 per annum, and we do not think he could be said to be employed in "manual labour." But anyone employing locum-tenents would be well advised to take up a policy of insurance.

W. F. C. W.—The legal position may depend upon the terms of the first sale. We sympathise with our correspondent in any case, but we cannot assure him that he has a legal remedy if his request that his name be removed is ignored.

Winchester.—There is no hard-and-fast line. There was more intercommunication formerly between the professions, and reciprocity in service was often the rule. Circumstances must dictate the proper course.

F. L.—We think the chances of increased neurotic conditions too remote to be worth allusion.

ERRATUM.—By an unfortunate misprint the paper on Hay Fever in THE LANCET of June 10th, 1911, written by Mr. L. Noon, has been credited in the Index under the subject "Hay Fever" to "Mr. L. Moon," but under the name of author Mr. Noon's name is properly indexed, and he is given credit for the authorship.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

We shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for July and August, 1911:—

April-October.—Rome Exhibition (United Italy's Jubilee).
,, 29th-Oct. 26th (Turin).—International Exhibition.
May 3rd-Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th-Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th-Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th-October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th-Oct. 31st (London).—Earl's Court Exhibition.
June 1st-August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 24th-27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th-28th (London).—Second International Congress of Urology.
,, 24th-29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 24th-August 2nd (Belfast).—Health Exhibition in connexion with above Congress.
,, 25th-28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th-29th (London).—Universal Races Congress.
July 31st-Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st-August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st-6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd-5th (London).—British Dental Association, Annual Meeting.
,, 12th-18th (Brussels).—First International Congress on Child Study.
,, 12th-30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th-21st (Dublin).—Royal Institute of Public Health.
,, 21st-23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th-Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
,, 30th-Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th-Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M., Lecture:—Dr. G. E. Herman: Ante-Partum Hæmorrhage.
TUESDAY.—4 P.M., Dr. R. C. Jewesbury: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Wingrave: Discharges—their Nature and Diagnostic Significance.
WEDNESDAY.—4 P.M., Mr. G. B. M. White: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. Pritchard: The Prevention and Treatment of Rickets.
THURSDAY.—4 P.M., Mr. R. J. Howard: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. R. Milne, jun.,: Diseases of Bones.
FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: Ocular Headaches.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Mr. Baldwin: Practical Surgery. (Lecture VI.)
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. Gillies).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays.
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Habershon: Cases from the Wards.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. G. French: Tracheoscopy, &c.
FRIDAY.—3.45 P.M., Lecture:—Dr. W. Wingrave: Clinical Pathology.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 12th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 6	30·29	S.W.	...	115	84	63	61	70	Fine
" 7	30·23	N.E.	...	127	87	66	65	71	Fine
" 8	30·29	W.	...	127	88	65	66	72	Fine
" 9	30·42	E.	...	117	72	57	61	67	Fine
" 10	30·53	N.E.	...	120	72	53	54	59	Cloudy
" 11	30·54	N.E.	...	126	81	54	55	61	Fine
" 12	30·47	N.E.	...	127	82	58	60	67	Fine

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MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—There is no more interesting question in connexion with the etiology of cardio-vascular degeneration than its relation to nervous stress. It is concerned intimately with the problem that we who belong to the College are asked so often and so anxiously to solve—the problem of the winding-up of the life-work of the best brains in the community. Unfortunately the limited time at my disposal does not permit me to treat this part of my subject in other than a sketchy fashion. But perhaps I may as well confess that, in one way, I am thankful to relieve myself of so heavy and altogether difficult a task as a close inquiry into the effects of intellectual and emotional stresses upon the heart and vessels—both their immediate effects in the form of disturbances of sensation and action, and any secondary or remote effects of a structural kind in which these may end.

Intellectual Stress and Emotional Stress.

The ways in which the heart and vessels are influenced by and through the nervous system are multiple and complex. Purely intellectual effort raises the systolic blood-pressure for a time. Is there any evidence that when this effect is continuous day after day, as practically it must be with the most valuable lives in the country—the statesman, the scientist, the members of learned and artistic professions—it leads to damage of the circulation? Are cardio-vascular degeneration and early death relatively common in persons of this class? According to Dr. Ogle's Report to the Registrar-General for 1885, clergymen, schoolmasters, barristers, solicitors and artists (all but physicians!) have an expectation of life beyond the mean of all males. And we have happily witnessed within the last few years the great ages which many of our most distinguished men have attained. Further, the death-rate from cerebral hæmorrhage is greater per million of living population in counties—that is, in quiet country places—than in London; but possibly this curious observation may be accounted for by the fact that fewer persons survive to an advanced age in London. We may conclude that hard intellectual work does not of itself damage the organs of circulation. It is not hard intellectual work, but the circumstances under which such work is so often carried on, that may give rise to cardio-vascular degeneration. First, there is what, in a single word, is called the worry that pursues the busy man in these days. As Professor Osler says, it is the incessant anxiety and strain of public life which tells. By common consent emotional disturbances act unfavourably upon the heart and vessels. Worry, suspense, anxious anticipation, disappointment, consciousness of failure or of failing health, the "hunted" feeling that comes of overwork and arrears, regret, sorrow, despair—all such depressing influences are believed to wear out not only the nervous system, with which they are immediately related, but the cardio-vascular system as well. It is a combination of intellectual stress and emotional stress that characterises "the strenuous life"; and we are safe to believe that it is the second element that breaks down the physiological systems. Cases of overwork of this kind are met with in public men, in officers of the services—at present more particularly of the navy, and, not to mention our own profession, most commonly of all in men of business, as business is now conducted, full of incessant interruptions and readjustments of the mental processes inseparable from the use of the telephone. But this is not all. There are other unfavourable conditions of intellectual occupation familiar to us in our daily practice. A man's temperament and constitution as well as his intelligence have to be considered. There is the patient who from natural disposition, or from habit begotten of disposition, often no doubt from a sense of duty, has systematically disregarded the guiding sense of the limit of safety in nervous work, and laboured continuously, finishing all that he had undertaken, whatever it might cost him. He has enjoyed an insufficient amount of sleep, and no sort of wholesome recreation, unless it be in the form of unwise attempts to remove nervous exhaustion by severe muscular exercise at long intervals. Again, there is the man who can do nothing, however unimportant, but at high pressure, and wears out his heart and arteries years before the calm and able personality who—thanks to his temperament or training—knows how to take worries, or (if he have worries) does not worry. And there is the man whose mental outfit is essentially unable to bear the rough and tumble of the hard work of a position of responsibility into which he has been thrust. And it is not an uncommon experience to meet with men who in working hard live hard in every way: they eat hard, drink hard (or at least freely), smoke hard, and take hard exercise. Unquestionably, too, alcohol plays a part in some cases regarded as caused by nervous stress—alcohol taken to remove the sense of fatigue, to promote sleep or it may be the sense of failure, to oil the wheels of business, or, which is most disastrous of all, to enable the worker to overwork himself. Then there is such a case as this. A man of 55 retired from business some years ago. But he is head over ears in public and religious work, a willing victim of the "promoters" of local movements of every kind, and writes and worries from morning to night, and on Sunday preaches in a public hall. I find in this patient, with a highly neurasthenic expression and manner, an apical systolic murmur and cardiac enlargement, and he is quite grey and aged-looking at 55.

Arterial Degeneration in Women.

In connexion with this subject are some interesting facts relating to the relative incidence of arterial degeneration in women. According to the Registrar-General, in his Seventy-first Annual Report (for 1908), on the average of the last eight years the deaths at all ages from cerebral hæmorrhage (together with apoplexy and hemiplegia) correspond to a death-rate of 666 per million for males and of 750 per million for females. At ages above 35, as we have already seen, it accounts for the deaths of 2083 in a million men and of 2284 in a million women. In the 20 years intervening between the thirty-third and the fifty-fifth years women fall victims to the disease in greater proportion than men, whilst at ages above 55 years the mortality is higher among men. The temptation is strong to refer this remarkable liability in women to disease of the cerebral arteries to nervous influences, although many other explanations might reasonably be offered. One is also disposed to connect it with the familiar disturbances of the circulation in neurotic and hysterical women, attacks of præcordial oppression, globus, flushing, faintness, and false angina, ending often in tears and other emotional manifestations. But to return to actual disease. I might have described to you in detail, had time permitted, the characters of a series of cases of women whose hearts had given way under the stress of a strenuous life. I will mention two only, and in a few words. A woman, aged 65 years, with radial sclerosis, a double aortic murmur, apical systolic murmur, and great cardiac enlargement, had worked for years in a financial house in the City and been worried throughout at home. Positively no other cause (excepting influenza) could be obtained. A woman, aged 62 years, still alive, broke down 13 years ago with tense, thickened tortuous radials and an aortic systolic murmur, cardiac enlargement, and temporary albuminuria after harassing work as lady housekeeper at a large club. With thickened radials and enlarged hearts, and in some cases valvular lesion, there was found in such patients a history of nothing that could be reckoned a cause of the disease but years spent in slumming, in charge of some large school, in a responsible post in the City, or the like. And the symptoms of cardio-vascular disease in these patients could

[1] Lectures I. and II. were published in THE LANCET of July 8th p. 69) and 15th (p. 141) respectively.

be traced back to the symptoms of neurasthenia. In this connexion one is reminded of the occasional existence of valvular lesions in Graves's disease, and of the occasional association of cardiac disorder and disease with epilepsy; and again, migraine links up such cases as I have just mentioned with gout and high tension.

Pathogenesis.

The pathogenesis of this group of cases is complex. No doubt both the nutrition of the walls of the heart and arteries and the internal pressure upon them are disturbed. The control of the nervous centres over the myocardium and arterial walls is indirectly trophic as well as dynamic: vagus and vaso-dilator impulses are anabolic as well as regulative of the arterial pressure. But in many instances the cause of the vascular and cardiac disorder and disease can be traced back far beyond the nervous centres. Obviously it may be reflex. Or it may originate in the assimilative and metabolic disorders which we have already studied, and which, as we observed, are relatively common in sedentary individuals devoting a great part of their time to literary and scientific indoor pursuits.

[After expressing regret that time did not permit him to discuss other causes of degeneration of the heart and arteries the lecturer proceeded:—]

RELATIVE VALUE DIAGNOSTICALLY OF SYMPTOMS AND OF PHYSICAL SIGNS.

I trust that I have proved to your satisfaction that cardio-vascular degeneration regarded in all its clinical relations is not one disease, but a group of different diseases, produced by different causes and sufficiently dissimilar in their respective characters and course to deserve—indeed to demand—separate consideration, prognostically and therapeutically. You will say that this is granted: that the same conclusion can be reached more directly by simple inquiry; by learning from the patient his past personal history in detail and the history of his present illness. I would remind you that syphilis is often denied; that glycosuria is unknown to the patient, and may be absent on the occasion of the first and only examination of the urine; that gout, regular or irregular, is so common in this country that it confuses the problem; that the influence of worry and overwork in individual patients is estimated with great difficulty; and that physical stress is far more often an incidental circumstance than an essential element in the causation of cardiac and vascular degeneration. It is well, therefore, that we should have other means to guide us to a complete diagnosis—namely, clinical observations made by ourselves.

Now I will not attempt to deny that the majority of the symptoms and signs of cardio-vascular degeneration are common to all the kinds of it. We have seen that they are. But if they be intimately regarded, not individually only, but as they occur together and are relatively prominent, they often prove to be differentially diagnostic. We have seen that, judged by statistics, angina is nearly three times more frequently present in syphilitic than in metabolic degeneration of the root of the aorta; that a patient complaining of palpitation is twice as likely to be the subject of physical strain as of gouty heart.

The physical signs are of more individual value diagnostically than the symptoms. Let me remind you of some of our results. A diastolic aortic murmur was present in 60 per cent. of syphilitic cases; in a small percentage of gouty cases; never in glycosuric cases. It is a rare sign in physical strain of the heart, unless this be consequent on previous disease; it is unknown in the alcoholic heart. Putting these facts in another form, we may say that if we meet with a diastolic aortic murmur in cardio-vascular degeneration we should at once suspect syphilis, because the probabilities are two to one that it and nothing else is the cause of the aortic incompetence; and if along with it there were no mitral murmur, we should be justified in pressing an inquiry. Working on the same principle, the presence of a mitral systolic murmur directs our attention from syphilis, in which it is relatively rare, to metabolic or gouty disease, in which it is relatively common.

Enlargement of the heart without murmur of any kind, but ith feeble cardiac sounds and a thickened radial, should ake us inquire after physical strain; and if the enlargement ere found to involve the right side markedly, strain in early fe should be suspected. A ringing second sound in the ortic area or accentuation of the second sound over the tricuspid area (it may be as low as the apex) is significant of high pressure, possibly connected with gout.

So with the course and progress of the disease, according to its nature. The course of degeneration of the aorta and heart is pecularly uncertain, being beset with hazardous developments, on which it is almost impossible to reckon. But we have seen that it is not entirely indeterminate, and that the ages at which the first symptoms appear, the rate of advance, the probability of arrest, the duration of quiescence, the circumstances connected with fresh developments, and the date and manner of termination are far from uniform. Again, I grant it is true, as we have seen, that once originated—in whatever cause—arterial sclerosis and cardiac degeneration tend to develop along one line, the line of a vicious circle, so that the characters which distinguish the different kinds of it at first, their primary characters, may be lost in what might be called its secondary characters, common to all. But the importance of the differentiation on which I am insisting attaches to our attempt to control it in its earliest stage, the stage when it can be controlled.

This consideration introduces us to the last part of my subject, the applications of the conclusions that I have reached in practical prognosis and treatment.

PROGNOSIS.

All of us have to acknowledge that we find it difficult to give a definite prognosis in an individual case of cardio-vascular degeneration. Even if we have reached what I have called a complete diagnosis, do we commit ourselves with confidence to an opinion of the patient's expectation of life? It is true that if the man has made a proposal for life insurance, we unhesitatingly recommend that it be declined; his life we consider is quite insecure. But if he or his relations ask our opinion of his prospects of recovery, we too often have to satisfy them with a general reference to the uncertainty of life and health in a person of his age and history. To ourselves there is nothing more interesting in its way than to make an attempt to forecast the course of the case exactly, and to commit to writing for our own use an estimate of the value of the man's life in months or years.

Has this study of cardio-vascular degeneration, from the point of view of its origin and nature in different cases, furnished us with fresh facts which can be employed usefully in prognosis? What it has specially taught us is the importance of making proper diagnostic use of the clinical phenomena and clinical course in each case: to interpret them into etiological and pathological terms before drawing conclusions from them. The same rule is to be followed in forecasting the patient's future. Individually regarded, the symptoms and signs of cardio-vascular degeneration in its earlier stages are dangerous elements of which to construct a prognosis. A man may have an alarming attack of angina and live for years. Paralysis may occur, giving rise to grave anxiety, but prove temporary; and this experience may be repeated over a considerable period of time. I have known a man live from 73, when I first examined him and found his radials sclerosed, a systolic murmur in the aortic area, and albumin in the urine, to the age of 93, enjoying reasonably good health. It is the existence of such cases as these that accounts for the indefinite guarded prognoses which we give. The best prognostic use to make of symptoms and signs is indirect: not to value them individually, but to diagnose by them the cause and nature of the pathological process, and then to frame our forecast by these. A stout, high-coloured woman of 55 has a systolic murmur over the base of the heart. Taken by itself, it might be considered to be of prognostic significance of any kind, however unfavourable. But regarded along with a family history of gout, a personal history of migraine and eczema, and the presence of nodi on her fingers, it means nothing more serious pathologically than a little atheroma of the arch, which we are accustomed to watch for years in such patients with no unfavourable result.

The same consideration applies to the *clinical course* of the disease in our individual patients. The progress of the case does afford us better material for making a forecast than the different symptoms and signs, but when used for this purpose it should always be considered in relation to the intimate nature of the process of which it is a clinical manifestation. On the

one hand, we note with satisfaction the decline and disappearance of pain or other symptoms of activity in syphilitic aortitis under treatment. Or we watch the physical signs change in a favourable direction from week to week in a case of cardio-vascular degeneration associated with glycosuria—the impulse improves in force, the cardiac sounds improve in quality, an apical murmur disappears. On the other hand, the appearance of a fresh murmur significant of the spread of disease from valve to valve in syphilis or gout is ominous of evil and of a short life, likely to end suddenly. A man who had had acute gout at 40 was found at 54 to have very small evidence of cardio-vascular degeneration. Twelve months later, consequent on an attack of influenza, he complained of præcordial pain, and was found to have cardiac enlargement and an aortic systolic murmur. He was seriously cautioned against work by his personal medical attendant and myself, but in vain; and before another year had passed a systolic apical murmur had made its appearance, as well as physical evidence of dilatation of the aortic arch. The next three months wrought a remarkable change in this man, as indeed might have been prognosed. Dulness invaded the whole length of the sternum; the obliterative blood-pressure in the brachial rose to 230; albumin appeared in the urine, and the size of the heart increased. Still, our advice, in accordance with our prognosis based on the advance of the signs and symtoms of disease, was disregarded. After the excitement of an important business conference and attendant hospitality the patient died from cerebral hæmorrhage.

In this connexion we turn with interest to the conclusions which we have reached in our present study with respect to the prospect of arrest of activity and recovery of health or of disablement in various degrees, or of remote or early death, in the different kinds of cardio-vascular degeneration. We found, for example, that in the course of 13 years one-half of our cases of syphilis of the heart and aorta had died, and died at the early average age of 52, whilst a decidedly smaller proportion of our cases of physical strain had perished, and these at the age of 66. Again, we found that syphilis of the aortic region runs its fatal course in 5¼ years; degeneration connected with glycosuria in 12½ years, the patient dying on an average 10 years later than the victim of syphilis. I need not recount the many facts of this order which we noted in connexion with the other types of degeneration. I trust that the figures which I was able to present to you on the duration of life, the state of health, the age at death, and the manner of death respectively (and for which I have to thank many medical friends), may prove to be of some statistical value prognostically.

Some Factors in Prognosis.

There are two other respects in which a knowledge of the cause of cardio-vascular degeneration is of essential service prognostically. In the first place, each of the pathological processes that underlie sclerosis naturally has its own prognostic elements, which are liable to be overlooked if our attention is directed to the state of the circulation only. In aortitis connected with glycosuria the risk of death from diabetic coma must not be forgotten; in syphilis the risk of general paralysis or of cerebral thrombosis. In the second place, without knowledge of the cause, we are deprived of one of the principal means of judging what effect treatment may have in prolonging the life of a patient. If we recognise that mechanical stress, which we can control, underlies the disease in one case, excessive eating, which we can moderate, in a second, and hopeless alcoholism in a third, the value of life in the three patients, relatively at least, can be more readily forecast. We have seen throughout our examination of the characteristics of the different types of cardio-vascular degeneration the important part which character, disposition, and the circumstances of the individual patient play in the development and progress of the morbid process. The personal factor is of essential prognostic significance. In the first place, the patient's inheritance is all-important. Family heart is never to be disregarded prognostically, particularly in those instances in which evidences of degeneration of the organs of circulation are creeping on in a well-ordered life. A man of 45 whose father died suddenly from myocardial degeneration, and a paternal uncle from cerebral hæmorrhage, complains of dyspnœa on exertion and on first lying down; his radials are thick, visible, and tortuous, his heart is large, and there is a faint trace of albumin in the urine. He lives quietly and temperately and has always done so, but what is the value of his life in years?

Next to his inheritance, the patient's temperament has to be estimated if we are to form a sound opinion of his chance of survival with degenerated heart and arteries. Some men profit by being cautioned. A friend of my own, with all the usual clinical characters of early Bright's disease, has lived for many years working hard at his profession on a so-called non-nitrogenous diet planned on the strictest lines. Another medical friend has been stricken by the discovery that his tension is high. There are individuals who resent and despise advice; many are naturally restless and will not submit to treatment with absolute rest in bed, which is essential in some instances. The prognosis varies accordingly. Of equal importance in this connexion are a man's circumstances. After all, it is as necessary in prognosis to reckon by the conditions under which a man expects to live as by his present state of soundness or unsoundness. He may have still to work. The prospect is always unpromising when misfortune or misery has been amongst the causes of the disease, for they are likely to continue at the period of life that our patient has reached, too often attended by a consciousness of failure. And besides these, the possibility of the patient's exposure to the other causes of degeneration has to be reckoned with. I have tried to show how in syphilis, for example, another cause of malnutrition, such as alcoholism, may come into play and determine the development of activity of the morbid process. Even at and after middle age the possibility of acute disease, influenza and pneumonia in particular, and of operation must not be disregarded.

Prognosis in the Later Phase of Cardio-vascular Degeneration.

The consideration of the importance in prognosis of the patient's circumstances and of events that may befall him introduces us to the later phase of cardio-vascular degeneration and the patient's prospects when it has been reached. New influences of an unfavourable character may have been at work and broken down the precarious compensation. An attack of præcordial or anginal pain, an unexpected paroxysm of nocturnal dyspnœa, or an alarming faint, signifies that the heart has been embarrassed by some passing event—worry or a hurried walk after a full meal; or it may be that growing breathlessness or slight œdema of the ankles can be traced to some increase of physical stress. Unquestionably, some additional cause like one of these, not necessarily an increase or extension of the original degenerative lesion, often has to be reckoned with when we are estimating the patient's chances of recovery at this stage, and the prognosis must partly be based on the probability of our being able to deal with it, to remove it and its effects, and to preserve the patient against it in the future. I dwell on this subject of the importance of new or secondary causes in the production of cardiac failure in these degenerative processes because, important as they are, they are readily overshadowed by the gravity of the original disease, and disregarded prognostically and therapeutically. How liable we are when we see for the first time a man with cardiac and respiratory distress, dropsy, and albuminuria, to be carried away by the discovery of a thickened radial, a large heart, and scanty albuminous urine, and to give a grave prognosis, neglecting to inquire how he may have been spending his life lately! A few days' rest in bed and one or two smart purges may serve to restore compensation, and to open our eyes to the immediate cause of the patient's grave condition. An opinion of the prognostic significance of angina in association with cardio-vascular degeneration ought never to be given until tobacco has been excluded as a possible cause of the attack.

But this consideration must not make us unprepared for cardiac failure from genuine advance of the primary disease in the forms of slow invasion of the coronaries and fibrosis and failure of the myocardium; of sudden occlusion of the coronaries with fatal effect; of further involvement of the valvular structures, and inability of the already overtaxed and degenerated heart to meet the increased damage; or of spread of the sclerotic process into the kidneys and brain with disastrous consequences, whilst the lungs and other viscera become involved in the progressive effects of an inefficient circulation. Here, in the stage of failure, the last phase of cardio-vascular degeneration, knowledge and appreciation of the cause are as valuable as they are in

the earlier stage. And here, too, the prognostic value of the individual symptoms — dropsy, pulmonary œdema, Cheyne-Stokes breathing, tachycardia and the rest—is to be estimated most properly after their etiological, pathological and physiological significance has been interpreted. In one instance such phenomena as these may signify failure of a heart dilated many years before by physical stress and now overtaxed by some unwise effort, but with good prospect of recovery. In another instance they may be evidences of failure of the heart in a gouty case that has drifted into granular kidney, when we know that recovery is impossible. Notwithstanding these considerations and the prognostic rules that follow from them, we often do allow our judgment to be guided by some of the individual clinical phenomena. Dropsy is not always prognostic of death forthwith when developed in the course of cardio-vascular degeneration. Even alarming attacks of acute pulmonary œdema with urgent dyspnœa and abundant blood-stained frothy sputum, if they are referable to some passing cause, as we have seen, and correctly treated, may end in temporary recovery. A few weeks ago I saw a man recover from acute cerebral congestion, with alarming rise of tension, headache, mental confusion and aphasia, and sickness; but he was well depleted of blood and heavily purged. On the other hand, Cheyne-Stokes breathing in full development, with continuous restlessness in the night, the *bruit de galop*, and evidences of pulmonary infarction, are to be recognised as fatal omens. One-sided pleurisy in cardio-vascular degeneration, with slight pyrexia and the symptoms and signs of failure of the heart, is in my experience a type of failure prognostic of death; all our ordinary remedies fail, digitalis especially making no impression either on the heart or on the volume of urine, and the patient sinks in the course of a few weeks.

TREATMENT.

I have come to the last of the questions which we have kept before us in this study. Can the differentiation of the causes of cardio-vascular degeneration be turned to practical account in treatment? I will try to answer this question without engaging in any lengthened discussion. This is not the occasion for a dissertation on the treatment of cardio-vascular degeneration in general, nor even on the principles which should guide us in planning it.

First let us speak of treatment in the widest sense: preventive as well as remedial. A practitioner who keeps before his mind a conception of arterial sclerosis and cardiac degeneration as effects of different and recognisable causes connected with the habits, occupations and circumstances in general of everyday life, rather than as a single pathological state, cannot fail to be impressed with the possibility as well as the desirability of preventing them. When we review the causes that we have discussed, we are struck by the consideration that most of them, or the habits in which they originate, can be avoided. Temperance and chastity alone would prevent a large proportion of these degenerative processes. In respect of syphilis, excessive eating and alcohol, this point requires no discussion. It is more difficult to persuade the young men of the present day that they may permanently damage their hearts unless hygiene, physical and moral, accompany indulgence in their favourite sports. Nor is it much more easy to control in this respect the middle-aged man who was brought up in the same physical school, and forgets that his years, his sedentary occupation, and enjoyment of the pleasures of the table have seriously interfered with what he calls the "condition" of his heart. As for nervous influences, we have seen under the head of prognosis how difficult a task it is for us to prevent or to arrest their unfavourable effects on our patient's circulation. The family practitioner has here abundant opportunities of exercising his judgment, tact and personal influence over his patients.

When the cause is already at work, the sooner its nature is identified and attention paid to the indications for treatment that it furnishes, the better is the prospect of arrest and of possible recovery. Let us review what these indications are according to the clinical type of the case when the disease is still in its earlier stage—that is, before failure of the heart has set in. Management of the case it its last stage is practically the same whatever the nature of the degenerative process may have been.

Syphilitic Disease of Heart and Aorta.

In our study of syphilitic disease of the heart and aorta we discovered certain characters peculiar to it and diagnostic of it. Each of these furnishes us with special indications for treatment. Its cause—a parasite—is to be destroyed if possible, or controlled in its activity. This we attempt to do with specific drugs, particularly mercury and iodide of potassium. At the same time we must not neglect to make full use of the very important observation that the destructive activity of the spirochæta on the root of the aorta is promoted in middle and old age by the incidental association with it of certain pathogenetic influences that come into play at that period of life, particularly alcohol, gout, and other disturbances of nutrition, and the stress of circumstances, just as physical stress assists it in early manhood. Manifestly one of our first concerns in the management of the victims of syphilis contracted in youth will be to protect them against these other influences by serious and timely counsel; and, if aortic degeneration has already made its appearance, to remove or reduce such influences as speedily as possible. A third characteristic of this kind of degeneration is its selection for its field of activity of that part of the arterial system most exposed to the stress of the ventricular systole. To diminish the disposition of syphilitic arteritis to spread locally, and with a view to promote repair of damaged parts on ordinary therapeutical principles, rest—comparative rest of the heart and great vessels—is indicated. If pain and extension of the physical signs prove that the process is dangerously active the patient is sent to bed. When symptoms are of moderate severity, restricted movement, guided by the patient's sensations and common sense, will usually suffice. But he must be kept under close observation, particularly if he continues to work, as he may be allowed to do in many instances. Physical examination will usually keep us informed of the course that the disease is following, and enable us to act without delay if there be evidence of extension. This would call for absolute rest and larger doses of specific drugs. But occasionally we are too late. One of my patients died suddenly who had been allowed to walk about quietly because he suffered from pain only when actually at business. At the same time the general principles that direct our treatment of cardiac disease of every kind are respected. Diet is sufficient, and of a kind that promotes repair; the patient's comfort is not forgotten, and his individuality receives particular consideration in view of the bodily and mental restrictions to which he is asked to submit. As I said in my first lecture, the treatment of syphilitic degeneration of the aortic area on these principles is immediately successful in many instances. The rate and degree of improvement are often remarkable. A man of 62 with syphilitic aortitis and mediastinitis so active that he had alarming attacks of stenocardia, lost all symptoms on the treatment just described, combined with mercurial inunctions; rapidly gained 21 lb. in weight, and within two years was blest with a son and heir to his property. Another patient gained a stone on 20-grain doses of iodide of potassium four times a day for three months. Results like these are unmistakeable.

Glycosuric Cases.

Leaving syphilis, let us see what guides to treatment we have found in the etiological and clinical relations of cardio-vascular degeneration associated with glycosuria. As the pathological and clinical characters, so the indications for treatment which flow from them are unlike those which we have just discussed. The morbid process is generalised throughout the circulation. The heart and vessels, as well as the nervous and other structures, are continuously fed with impure blood, the product of malassimilation, associated often with excessive eating. The heart in particular proves to be badly nourished and asthenic, with consequent incompetence of the mitral. The arterial tension is low in correspondence. Here there is no indication for giving specific drugs unless it were codeine in fully developed diabetes. What is indicated is thorough reform of the patient's manner of living. Habits of self-indulgence in food or drink, with indifference to the result, must be broken. To effect this end strong-handed action is required of the practitioner, for you remember that he may have a headstrong, masterful man to deal with. The diet has to be reduced in amount, and the constituents of it planned according

to ordinary rules for the removal of sugar from the urine. In but a small proportion of cases is it necessary to resort to strictly antidiabetic diet—to forbid bread, for instance. Nor is it necessary to forbid meat, although there is a trace—possibly more than a trace—of albumin. The morbid characters of the urine suggest overflow of two essential constituents of tissue nutriment, sugar and albumin, from excessive ingestion and derangement of the assimilative processes through overwork of them. Vichy water should replace alcoholic drinks and be taken freely in the early morning. In these glycosuric cases correct appreciation of their nature teaches us that exercise—not rest, as in syphilis—is called for, graduated exercise on foot in different forms, of which golf is one of the best, according to the patient's condition and circumstances. But caution must be observed in the use of the exercises and movements to which these patients often inconsiderately resort at the present time. Massage is valuable when salutary muscular exercise cannot be taken—for example, by stout women living in a town. Of drugs, the best, in my opinion, for cases of this kind is the classical Gregory's mixture with an extra dose of alkalis, night and morning, and a combination of arsenic and nux vomica after meals, the former mixture alone to be given for the first fortnight of treatment. In other cases an occasional mercurial purgative, followed by a saline, may be substituted. A course of treatment at Vichy or Royat, under a careful and firm doctor who has been duly informed of the state of the patient's circulation, often is of real benefit; but the usefulness and safety of spa treatment in this and in every kind of cardio-vascular degeneration are limited by the age of the patient and the degree of unsoundness of his circulation and kidneys.

Gout and Cardio-vascular Degeneration.

Gout as a factor in the production of cardio-vascular degeneration introduced us to high blood-pressure. This element in the case indicates certain modifications in the treatment which I have just recommended in the glycosuric type. We have seen that the disposition of the blood-pressure to rise in gout is difficult to control—possibly because it is an inherited or family, rather than an individual, character. But the attempt to reduce it must be made; the danger of nephritis and widespread sclerosis is never to be lost sight of. The two most useful measures in these gouty cases are reduction of food in amount and in nitrogenous value, and the habitual use of purgatives. But I need not enter further into the details of the management of this most common of the dyscrasias we have to deal with in England. Iodide of potassium, combined with the bicarbonate or with the compound rhubarb mixture which I have just mentioned, is given with benefit in definite courses from time to time. Whichever of the many excellent spas at home and abroad may be selected in the season, let me repeat that the local physician must be informed of the condition of the heart and arteries and kidneys of the individual patient committed to his care. As for exercise, the gouty man, with or without early degeneration of his arteries, usually requires to be restrained rather than encouraged. He is often by disposition and early associations inclined to outdoor sports of different kinds; and when he has reached or passed middle age, will not recognise his failing powers, but will try to keep pace with younger men. This is a matter that calls for full discussion with the patient and definite settlement.

Physical Strain.

Reference to the control of exercise in the treatment of cardio-vascular degeneration introduces us to the subject of the management of physical strain of the heart and arteries. The guiding indication here might appear to be simple: to limit muscular exercise to the reduced capacity of the heart and vessels—this and nothing more. But it is not so. We found that the man who had strained his heart acutely in youth sometimes proves to have inherited but indifferent tissue material; and that the after-history of his case, as it is unravelled when he comes to us distressed in middle life, commonly includes evidences of supervention of disturbances of the nutrition of the walls—by gout, alcohol, tobacco, work, or other causes. And similarly, although in the reverse order, strain of the senile heart is most commonly consequent on nutritional disorder, possibly disease, of the myocardium and arterial coats. Therefore, whilst the principal advice which we give patients belonging to these types is to live within their means, physically speaking, that is, to be guided in work and exercise by the sense of discomfort in the chest which is a ready and sufficient signal if respected, but one which must not be provoked too often, we do not forget to direct their manner of life as a whole. For the condition of dilatation with sclerosis of the heart and arteries characteristic of physical strain no medicine is directly indicated, but small doses of digitalis and strychnine are usually given from time to time. Massage, carefully graduated resistance movements, and well-planned baths are calculated to benefit the cardiac walls in this type of case. Special attention must be paid to the diet. Men who have strained their hearts by physical exercise have commonly strained their lungs as well; and the degenerated and feeble heart is caught between the dilated lungs, which displace it downwards, and the flatulent stomach, which encroaches upwards on the thoracic space.

Nervous Stress.

To give useful advice to a man whose heart and vessels present evidences of wearing out from nervous stress is a far more difficult task than any of the preceding. It involves many considerations of an order other than pathological and medical, and yet inseparably associated with the origin of the patient's disablement and the prospects of success. The subject is, indeed, far too complex to be discussed here. The physician or practitioner who undertakes this responsible duty should possess not only professional knowledge, based on experience, but an intimate acquaintance with the affairs of life, and as far as possible an insight into the character, disposition and circumstances, personal, domestic and public, of the individual. We have seen that there is little ground for the fear that intellectual stress causes cardio-vascular degeneration. But whilst it is not always necessary, and frequently is highly inadvisable, to stop work altogether, occupation has to be definitely controlled. There must be a limit to the amount and length of even purely intellectual work; sufficient provision must be made for sleep, recreation and distraction, and the use of artificial aids to work strictly forbidden, if the cerebral vessels are already unsound from any cause. And it must not be forgotten that mental occupation in the form of business or public meetings may at an unexpected moment provoke emotional excitement in the form of vexation or passion, which all authorities recognise as dangerous. But after all, worry, with work or without work, is by far the most common nervous influence to which cardiac and vascular degeneration can be traced, directly or indirectly. How difficult it is to free the patient from worry; how rarely it is at all possible, everyone knows, lay as well as professional. Still another indication is to find occupation for the man who is being taken, permanently it may be, from the sole interests of his life. Only too often the attempt is a failure, and the patient pines and dies. He is a fortunate man who finds himself in the last years of his life still provided with material as well as with the disposition and capacity for interesting occupation of his time.

General Remarks on Treatment.

If we now review for a moment the indications which we have found under the different kinds of cardio-vascular degeneration, I believe you will agree with me that the subject of treatment appears in a more satisfactory light than when it is regarded from the point of view of a single substantive disease. The result in many instances is good for a time; the figures which I have given prove this. The nutrition of the cardiac and vascular walls improves, and pressure is kept within moderate bounds, and thus the natural resistance and provisions for compensation with which the organs of circulation are endowed are successfully maintained. The management of the case now consists in retaining the control which we have gained of the cause of the disease, and in resisting as long as possible the growing dangers for which we must be prepared, as we have seen under prognosis. Whatever its origin, degeneration is essentially progressive—slowly or rapidly. The patient is past his prime; treatment must be carefully adapted to the circumstances of advancing age. The original cause may be still at work, as in gout, or it may be dormant only, like syphilis—ready to renew its activity on occasions favourable to itself. Specific measures cannot always be safely omitted. The patient is beset by the incidental circumstances and events of life—professional, social, and domestic—to which I have frequently referred as causes of occasional embarrassment and distress threatening

compensation, whether by affecting the nutrition of the walls or by raising the blood-pressure. The syphilitic subject develops gout or nephritis. The glycosuric subject meets with misfortune in business, or he is tempted to eat heartily again, and narrowly escapes death in an attack of paroxysmal dyspnœa. The gouty man foolishly taxes his enlarged heart in a fit of determination to cure himself with active exercise. Here we see necessity for observant supervision of the patient's whole manner of living. It is surprising how largely success in treatment, like success in prognosis, depends on a correct appreciation of these secondary causes of cardiac embarrassment. A man believed to be dying from acute failure of the heart and pulmonary œdema, in this stage of cardio-vascular degeneration, has been rescued by active purgation and temporary starvation.

But meanwhile vicious circles form and increase in area and in number, slowly but steadily sapping the nutrition and vigour of the heart. In my first lecture I pointed out that degeneration of the heart and vessels once commenced, necessarily—indeed, naturally—advances and ends in death. For a time treatment is so far successful as to retard the progress of disease and prevent or relieve disorder and distress. But sooner or later it ceases to benefit; and if the patient does not perish suddenly, or from cerebral hæmorrhage or Bright's disease, or in one or other of the ways which we noticed in connexion with the different causes, treatment comes to be required in a new direction—for failure of the heart. Even now it is incorrect to neglect entirely the original cause of the disease. But by this time, as a rule, the condition of the patient is too complex for much good to be expected from dissociation of its elements—the primary degeneration, the effects of additional causes of disturbance, the widespread involvement of the circulation and viscera in vicious circles. But the principle that has guided us throughout this study is still to be followed. Failure of the heart must have an immediate cause, and this often can be discovered and dealt with successfully, for temporary recovery is still not impossible. Cardiac dropsy not infrequently yields to rest, correct diet, faithful nursing, and well-planned medication in these cases of old degenerated hearts and sclerosed vessels. Even now it is not always too late to use digitalis or its allies; the circulation may still respond to them.

At last there is an end to the success that so often rewards a rational view of the nature of cardio-vascular degeneration, and the therapeutical management of it on rational principles. Little can be done now but to try to secure euthanasia for a patient dying with cardiac and respiratory distress; to order diet and hypnotics, and, most difficult of all, to make proper use of morphine, to afford what relief we can to the heart which has been maintaining a brave fight against great and ever-growing evils for so many years.

LITERARY INTELLIGENCE.—Messrs. Cassell and Co. announce for immediate publication "Diseases of the Nose and Throat (including the Trachea and Œsophagus)," by Dr. StClair Thomson.

OUTBREAK OF SMALL-POX AT WALLASEY.—Five cases of small-pox have been reported at Wallasey, one of which is announced to have proved fatal. It appears that a girl living in Liscard was taken ill, but not so seriously as to necessitate medical attention. She was suffering from a very mild form of small-pox and soon recovered. The girl's father had arrived in the Thames on board a vessel whose captain had to report small-pox among the crew. As no record could be found of the receipt of any notification at Wallasey, further inquiries were made, and it was discovered that the Port of London authority had sent the letter to Liskeard in Cornwall by mistake. A few days later a medical man notified what appeared to be a mild type of small-pox. The medical officer of health ordered the removal of the patient to the isolation hospital. Thence he proceeded to an institution in Egremont, where the girl had been employed, and discovered three other cases—two girls and a man. Only one was serious—a girl aged 22 years—and the trio were also conveyed to the Leasome-road institution. The girl died on July 5th. The inhabitants of the district are applying for vaccination.

ON THE DIFFERENTIAL DIAGNOSIS OF OVER-DISTENSION OF THE LUNG AND PNEUMOTHORAX.

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THE object of this short paper is merely a "differentiation" or an attempt to diagnose during life between an over-distended lung and pneumothorax. Undoubtedly the credit of first pointing out that partial compression of a bronchus may lead to over-distension of the lung belongs to Dr. G. Newton Pitt. In the Bradshaw lecture for 1910 on the Results of Bronchial Obstruction Dr. Pitt points this out, and mentions two cases in which this condition was mistaken for pneumothorax.[1] One of these cases I remember well, as it occurred in Victoria Park Hospital during my tenure of office as an out-patient physician. The case was supposed to be one of aneurysm and pneumothorax. That was as long ago as 1902. Since then we have become more critical in reading our skiagrams. I shall not refer further to the case as it is fully reported in Dr. Pitt's lecture. In the future I think that an X ray examination of the chest will discriminate easily enough between an over-distended lung and a pneumothorax. In the pneumothorax the shadow of the collapsed lung can always be seen, while in the over-distended lung, of course, it is never so seen.

I will now take a few examples. Let us first take a typical example of a pneumothorax such as is shown in Fig. 1.[2] This skiagram is from a case of pulmonary tuberculosis complicated by a pneumothorax on the left side. The diaphragm on the affected side is displaced downwards. This, however, is of no value in the differential diagnosis, because it may equally be so displaced in over-distension. The shadow of the partially collapsed left lung is well seen. The heart is displaced completely to the right and obscured by the massive tuberculous infiltration of the right lung.

We will now take another example, Fig. 2. The skiagram is from a case of pulmonary tuberculosis with a left pneumothorax. The mediastinum and heart are displaced to the right. The shadow of the collapsed lung is well seen somewhat resembling the foregoing case. Again, look at Fig. 3, a case of traumatic pneumothorax. Here again we see the shadow of the completely collapsed lung lying beside the spinal shadow. Once more, look at Fig. 4. The skiagram is from a case of pyopneumothorax. The level of the pus is well shown, also that of the collapsed lung.

I might go on multiplying examples, but the above must suffice. Of course, the shadow of the collapsed lung varies much, this variation no doubt depending on the cause of the collapse. A densely infiltrated tuberculous lung cannot, of course, completely collapse, as is well shown in skiagrams 1 and 2. Skiagram 3 shows the organ completely collapsed. But however much the shadow may vary it is always there.

I will now give two examples of over-distension of the lung from partial compression of a bronchus. On reading Dr. Pitt's lecture I at once looked through my collection of skiagrams of aneurysm and found two which I think leave no doubt as to the condition. Take Fig. 5 of an aneurysm of the transverse and descending aortic arch, notice the increased clearness of the intercostal spaces, the difference in the slope of the ribs, and the absence of the shadow of collapsed lung. Take, again, Fig. 6; here the difference in the slope of the ribs is more marked than in the previous example. There is here, also, increased clearness of the intercostal inner spaces and the absence of the collapsed lung shadow. I do not think over-distension of a lung from partial compression of a bronchus is a common condition, but that it sometimes occurs there can be no doubt.

I have added small key diagrams to the skiagrams so that my readers may follow the description more easily.

Harley-street, W.

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[1] THE LANCET, Dec. 10th, 1910, p. 1674.

[2] I am indebted to Dr. E. W. Martin for this picture. The skiagram was taken by Dr. Martin at Victoria Park Hospital during his term of office as resident medical officer.

FIG. 1.

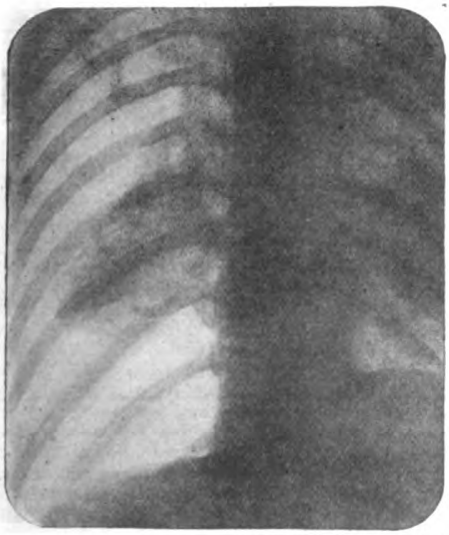
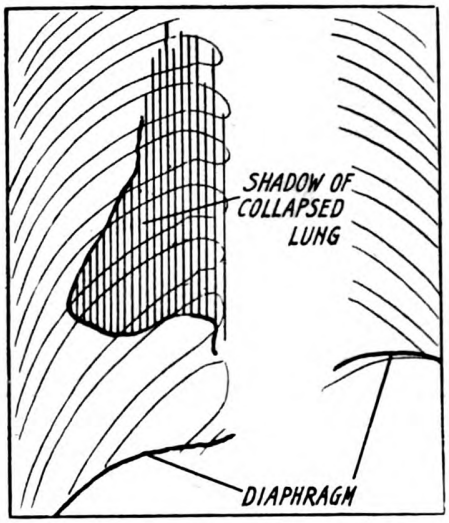


FIG. 1A.



Typical example of pneumothorax in a case of pulmonary tuberculosis.

FIG. 2.

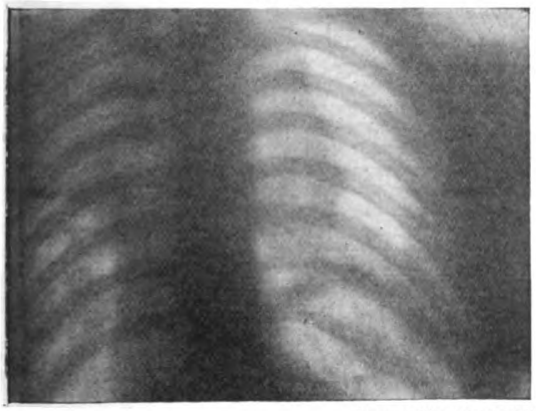
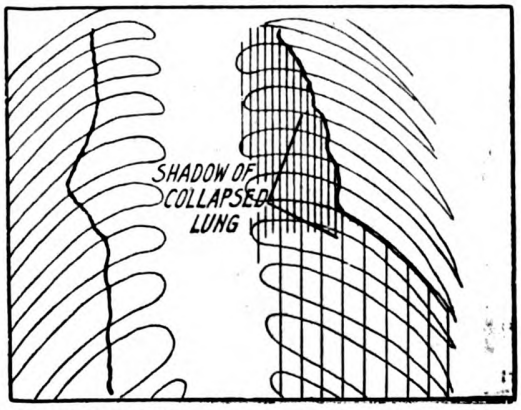


FIG. 2A.



Pneumothorax occurring in pulmonary tuberculosis.

FIG 3.

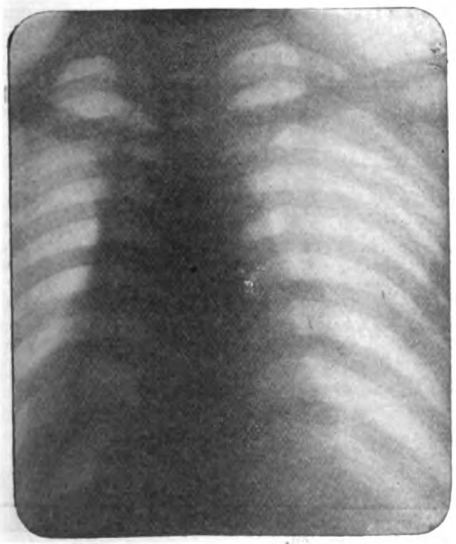
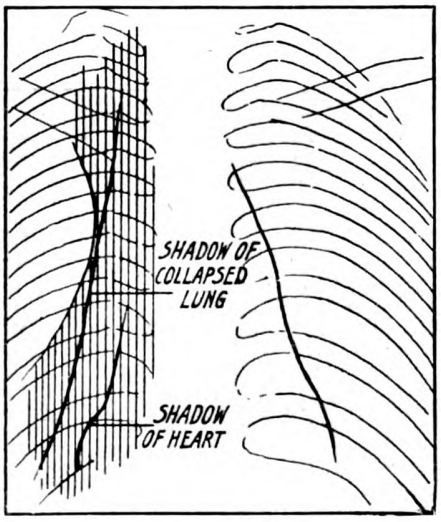


FIG. 3A



Traumatic pneumothorax.

FIG. 4.

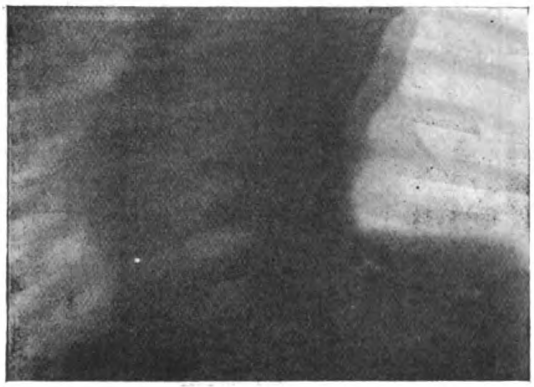
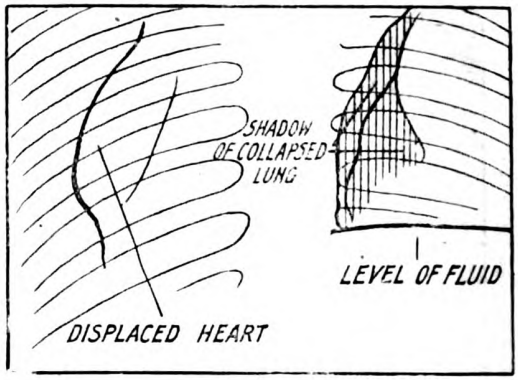


FIG. 4A.



Pyopneumothorax.

FIG. 5.

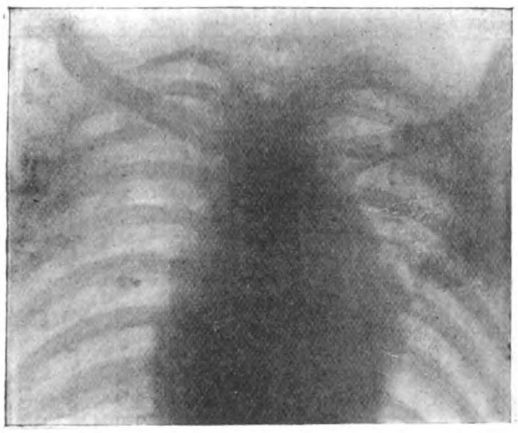
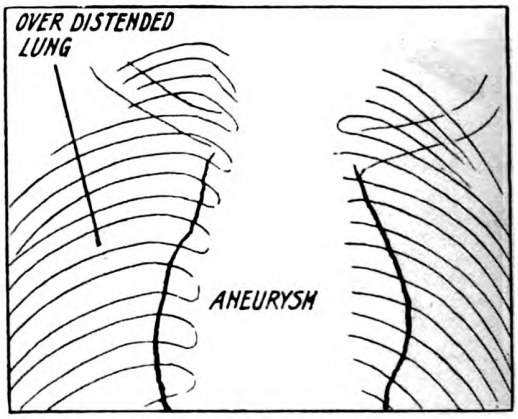


FIG. 5A.



Over-distension of lung from partial bronchial compression.

FIG. 6.

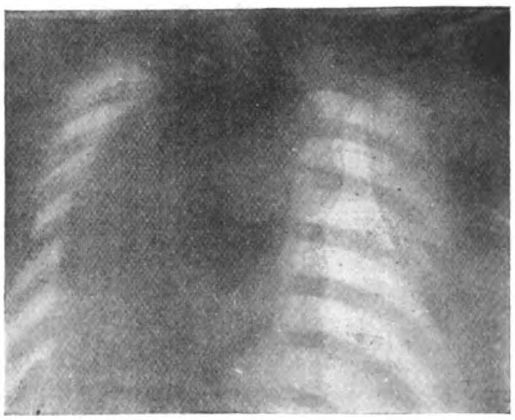
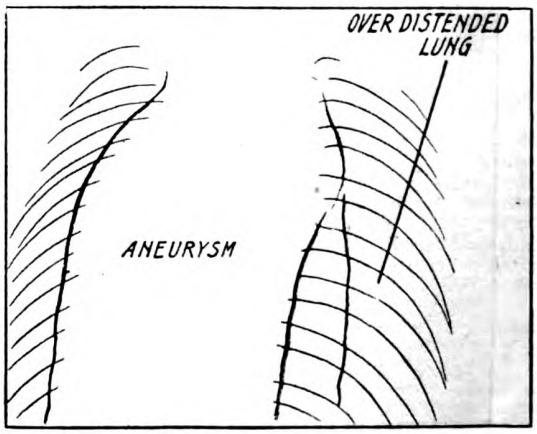


FIG. 6A.



Over-distension of lung from partial bronchial compression.

THE PERMANENCE OF THE CURE OF SYPHILIS BY "606."

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(*From the Bacteriological Laboratory of the London Hospital*—Dr. W. BULLOCH.)

WE have recognised from the first that the clinical value of "606" in the treatment of syphilis required little further corroboration. Even when applied by the intramuscular method it has always appeared to us to be a substance more potent in the alleviation of symptoms than, perhaps, any other in medicine. It has, therefore, been our aim to test in particular its claims to exert a "*Therapia magna sterilisans*"—in other words, to find out to what degree it is capable of sterilising the body or completely curing a syphilitic individual by one course.[1] With this end in view we have considered it necessary to make a large number of observations on each person treated, in many cases weekly during the first two months, in order to have continuous information both of the clinical condition and the state of the Wassermann reaction. We have, therefore, selected a small number of hospital patients, not from the point of view of their clinical condition, but solely from the likelihood of their continued attendance at the hospital for the purposes of observation.

We are aware that these observations do not prove whether a patient is capable or not of cure, but they represent facts from which certain conclusions may be drawn and are preferable to the general discussions unsupported by practical tests which have figured so largely in the literature.[2 3 4]

Our cases are divided into two classes: (1) cases treated by intramuscular and subcutaneous injections; and (2) cases treated by intravenous injections. We may state that every case of relapse which has occurred among our patients has been included in this series, but of other cases only those which have been continuously observed in a satisfactory manner for a period not less than three months and not greater than 12 months. Congenital syphilitics and certain others are also not included. No case has received mercury or any other form of treatment.

INTRAMUSCULAR AND SUBCUTANEOUS INJECTIONS.

TABLE I.—*Primary Syphilis.*

Case.	Amount of "606" in initial course.	Period (weeks) during which Wassermann reaction remained positive after first course.	Number of relapses.	Date of first relapse after first course of "606" (weeks).	Whether re-injection was practised or not.	Final state of Wassermann reaction.	Period (weeks) during which the final negative reaction has been observed.	Total period of observation (months).
8	0·6	2½	0	—	—	Neg.	34	9
2	0·3	2½	3 S.S.W.	5	Yes (2)	Pos.	—	11
32	1·2	9½	0	—	—	Neg.	14	6
18	0·9	3½	0	—	—	,,	29	8

A more complete understanding of the table may be obtained from the following explanation. The first column gives the reference number of the patient. The amount of "606" given in the initial course was applied in one, two, or three doses during a period usually not exceeding seven days. The third column gives the shortest period in which the Wassermann reaction became negative. The type of reaction carried out by us is the original reaction as improved by Boas. The figures in the fourth column show the number of separate relapses which have taken place; the letter "S" signifies a relapse with symptoms, and the letter "W" a relapse of the Wassermann reaction without symptoms. The fifth column shows the number of weeks after the first course of "606" at which the first relapse took place. The next column shows whether re-injection of "606" was carried out. A reinjection usually implies a course of more than one dose; when more than one re-injection is indicated this implies more than one course of, perhaps two doses. The seventh column shows the result of the Wassermann reaction at the present time, and when this result is negative the next column gives the time in weeks during which this negative reaction has been present.

Of the four cases of primary syphilis shown above, three, in our opinion, may reasonably be looked upon as cured. It would be surprising if a case of primary syphilis were to develop secondary symptoms after a period of six months.

TABLE II.—*Secondary Syphilis.*

Case.	Amount of "606" in initial course.	Period (weeks) during which Wassermann reaction remained positive after first course.	Number of relapses.	Date of first relapse after first course of "606" (weeks).	Whether re-injection was practised or not.	Final state of Wassermann reaction.	Period (weeks) during which the final negative reaction has been observed.	Total period of observation (months).
1	0·3	3	2 S.W.	13	Yes (2).	Neg.	4	12
26	1·1	10	0	—	—	,,	20	7½
28	1·1	4	1 S.	5	No.	,,	18	7
24	0·8	11	0	—	—	,,	20	7½
12	0·6	—	1 S.	8½	Yes.	,,	19	9
30	1·0	—	1 S.	4	No.	Pos.	—	7
15	0·5	—	2 S.W.	11	Yes.	,,	—	8½
21	0·9	9	0	—	—	Neg.	23	8
4	0·6	14	0	—	—	,,	24	9½
6	0·5	7	1 W.	14	Yes.	,,	4	9½
22	1·1	8	0	—	—	,,	24	8
3	0·4	—	1 S.	9	No.	Pos.	—	2½
5	0·5	—	1 S.	17	,,	,,	—	9½
9	0·6	6½	0	—	—	Neg.	12	4½
25	0·5	13	0	—	—	,,	17	7½

From the foregoing it would appear that the intramuscular application of "606" exerts a somewhat variable effect upon the Wassermann reaction in secondary syphilis, due no doubt to an incomplete therapeutic action. It will be seen that five of the 15 cases did not become negative, and all five relapsed. Of the remaining 10 which became negative three relapsed and seven did not. Thus one-half of these cases relapsed. The average period required to obtain a negative reaction was 8½ weeks, and the average period at which relapse occurred was 10 weeks, while the longest was 17 weeks. Case 28 became spontaneously cured of his slight relapse (orchitis), and the reaction, which became positive during the attack, returned again to negative a few weeks afterwards. In all cases the symptoms of relapse were very slight, while in one (Case 6) no symptoms were detected. We conclude that intramuscular and subcutaneous injections are of relatively little value in the treatment of secondary syphilis.

TABLE III.—*Tertiary Syphilis.*

Case.	Amount of "606" in initial course.	Period (weeks) during which Wassermann reaction remained positive after first course.	Number of relapses.	Date of first relapse after first course of "606" (weeks).	Whether re injection was practised or not.	Final state of Wassermann reaction.	Period (weeks) during which the final negative reaction has been observed.	Total period of observation (months).
17	0·8	—	1 S.	14	No.	Pos.	—	3½
31	0·6	—	1 S.	4	Yes.	Neg.	12	6
19	0·9	—	1 W.	12	,,	Pos.	—	8
24a	1·0	—	0	—	No.	,,	—	7½
29	0 6	—	0	—	,,	,,	—	7
7	0·6	Neg. at outset.	1 S.	14	Yes.	Neg.	18	8
27	0 8	6	1 S.	10	,,	Pos.	—	7
23	0·6	—	0	—	No.	,,	—	7½
16	0·4	—	1 S.	10	,,	,,	—	8
33	1·2	—	0	—	,,	,,	—	5½
11	0·6	—	0	—	,,	,,	—	9

In tertiary syphilis intramuscular injections of "606" have very little effect upon the Wassermann reaction, a

result which is comparable to that observed in the case of mercury. Only one case became negative and the reaction was feeble at the outset. In two cases, however (Nos. 31 and 7), exacerbations of the reaction due to relapse were reduced to negative by re-injection. Six of the 11 cases relapsed in an average period of 10½ weeks after treatment. It might have been expected that in the chronic forms of syphilis relapses would have occurred at a much later date, but apparently tertiary syphilis, being more difficult to cure than secondary, is more liable to relapse. We conclude that intramuscular injections of "606" are relatively unsuitable for the treatment of tertiary syphilis.

It must be clearly understood that this apparently unfavourable opinion is due to the fact that we reject absence of symptoms as an index of the cure of syphilis. We are content only in a permanently negative Wassermann reaction. All cases have been "cured" clinically by intramuscular or other methods.

INTRAVENOUS INJECTIONS.[5]

In many cases part of the stated amount of "606" was injected intramuscularly, a procedure which we have since omitted:—

TABLE IV.—*Secondary Syphilis.*

Case.	Amount of "606" in initial course.	Period (weeks) during which Wassermann reaction remained positive after first course.	Number of relapses.	Date of first relapse after first course of "606" (weeks).	Whether re-injection was practised or not.	Final state of Wassermann reaction	Period (weeks) during which the final negative reaction has been observed.	Total period of observation (months).
52	1·4	7½	0	—	—	Neg.	9	4
40	1·0	10?	0	—	—	,,	10?	5
55	1·4	8	0	—	—	,,	8	4
49	1·4	6½	0	—	—	,,	10	4
58	1·7	4	0	—	—	,,	10	3½
48	1·4	12½	0	—	—	,,	0	3
35	1·3	7½	0	—	—	,,	15	5½
57	1·5	?	0	—	—	,,	?	3
41	1·4	6	0	—	—	,,	14	5
38	1·0	6	0	—	—	,,	16	5½
36	1·1	6	0	—	—	,,	16	5½
46	1·4	8	0	—	—	,,	11	4½
61	1·4	8	0	—	—	,,	9	4
39	1·4	6	0	—	—	,,	14	5
50	1·4	4	0	—	—	,,	13	4

In every case the Wassermann reaction became negative after treatment, the average period, seven weeks, being little departed from. No relapses have occurred among the 15 cases and they have been observed for at least three months. We therefore conclude that intravenous injections of "606" are admirably suited to the treatment of secondary syphilis.

TABLE V.—*Tertiary Syphilis.*

Case.	Amount of "606" in initial course.	Period (weeks) during which Wassermann reaction remained positive after first course.	Number of relapses.	Date of first relapse after first course of "606" (weeks).	Whether re-injection was practised or not.	Final state of Wassermann reaction.	Period (weeks) during which the final negative reaction has been observed.	Total period of observation (months).
61	1·0	—	0	—	—	Pos.	—	3
56	1·2	13	0	—	—	Neg.	0	4
43	0·8	11	0	—	—	,,	9	5
58	1·7	—	0	—	—	Pos.	—	3
42	1·4	—	0	—	—	,,	—	5
37	0·8	—	0	—	—	,,	—	3

In two of these six cases the reaction became negative, while in all there has been a marked quantitative diminution in the strength of the reaction, a diminution which still progresses. No case has relapsed during a minimum period of three months. We therefore conclude that, as in the case of secondary syphilis, intravenous injections of "606" are suited to the treatment of tertiary syphilis.

General Conclusions.

1. Intravenous injections, so far as is known at the present time, have fulfilled all that has been claimed for this form of treatment. They appear to be very admirably suited to the treatment of syphilis.

2. Forms of application other than the intravenous are relatively unsuitable.

We wish to express our thanks again to Professor Ehrlich for the supply of "606," and to Dr. W. Bulloch for his sustained interest in the work. We are much indebted to Dr. J. H. Sequeira in particular for the liberal provision of his beds.

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ACUTE DILATATION OF THE STOMACH.

AN ACCOUNT OF SIX ADDITIONAL CASES, AND A CONSIDERATION OF THE CAUSE OF THE CO-EXISTING DUODENAL OBSTRUCTION.

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THE object of this short communication is to adduce fresh clinical evidence of the presence and nature of the duodenal obstruction which exists in acute dilatation of the stomach. Since our last communication on the subject in 1901[1] nine fatal cases of the condition have, in one way or another, come under our observation. Of six of these we now give the particulars; in the remaining three the notes and post-mortem details are imperfect, so that nothing is to be gained by their narration. In May, 1898, when recording a case of acute gastric dilatation which followed a blow on the epigastrium, we could only find accounts of 17 fatal cases; these we abstracted, and they were published in the reports of the Clinical Society of London for that year. In 1906 Dr. Lewis A. Conner published an exhaustive paper on the subject in the Transactions of the Association of American Physicians. He was then able to collect no less than 102 cases, of which 72 were fatal. No doubt additional cases have been reported since that date.

The matter is now at a stage where the mere repetition of examples is of no advantage unless they are such as either throw fresh light on the causal agencies at work, or mark some improvement in the methods of dealing with the catastrophe. Most of the later writers, recognising that the dilatation is not confined to the stomach, have accepted the hypothesis of duodenal obstruction as, in part at least, accounting for the symptoms. In a short article which appeared in THE LANCET of Nov. 9th, 1901, whilst pointing out that the idea of pyloric spasm was untenable, both on account of the bilious vomiting which is so characteristic, and also on account of the dilatation of the duodenum which is found after death, we expressed our adhesion to the notion that duodenal obstruction in some form must be present. Up to that time, to our knowledge, but two forms of obstruction had been suggested as possible—one caused by flexion of the duodenum due to prolapse of the weighty and distended stomach; the other due to mesenteric traction, the mesenteric vessels being dragged taut across the transverse part of the duodenum by the weight of the collapsed

[1] THE LANCET, Nov. 9th, 1901, p. 1259.

small intestine, which in such cases is found prolapsed into the true pelvis.

We were led to search for a different cause of duodenal obstruction by the observation that in one of the new cases we reported at that time the duodenal distension could be traced quite beyond the point where the mesentery crossed the bowel. This cause we found, after experiments on the cadaver, to be the pressure exerted by the superincumbent and dilated stomach on those parts of the duodenum which lie in contact with the front and left side of the spinal column. We learned later that a somewhat similar suggestion had been made by Meyer in 1889 and by Schultz in 1890. Our hypothesis is that in the production of the train of symptoms associated with acute dilatation of the stomach a vicious circle came into play; first a paralytic dilatation of the viscus occurred, and then distension, due to duodenal obstruction, induced by the weight of the superincumbent stomach.

Since we propounded our idea the matter has been further investigated by Conner. In three of a series of ten experiments he was able to verify the mechanism we had described. He also recognised the pressure of the stomach as a partially contributing factor in some of the others, but in the rest it exercised no effect in producing duodenal obstruction. Conner's experiments were carried out after removal of the small intestine, a weighted cord being attached to the mesentery to represent the tractive factor, so in his trials it was *only where mesenteric traction failed that the mechanism we postulated was brought into play.*

That mesenteric traction compression is a possible concomitant of gastric dilatation is proved beyond cavil by the example recorded by Baumler, in which, on that part of the duodenum which ran under the root of the mesentery, was found a band of bright red colour and two centimetres broad; the duodenal mucosa corresponding to this band showed superficial necrosis. For the pressure of mesenteric traction to act most advantageously on the duodenum the small intestine must not only be contracted, but also prolapsed into the pelvis. Then the mesentery and the contained mesenteric artery become applied to the prominent lumbar curve of the spine in a manner comparable to that in which a cord sits on its pulley. This adaptation renders compression of the duodenum very effective, and the nearer the transverse part of the duodenum lies to the greatest prominence of the curve, the greater the compression effect. A duodenum which lies lower than the average and crosses the fourth instead of the third lumbar vertebra should therefore, as Conner points out, suffer more severely from traction compression. This is of interest in view of the fact that Glénard has invoked mesenteric traction as a contributing factor in producing the symptoms of enteroptosis. Conner, from a consideration of the cases which he collected, came to the conclusion that obstruction of the duodenum by the mesentery must be regarded as present in a large proportion, perhaps from one-third to one-half, of all cases of acute dilatation of the stomach. Our experience would not lead us to adopt the higher figure at all events.

Attempts, in which we have joined, have several times been made to put the hypothesis of a duodenal kink to experimental proof. By forcible inflation of the stomach, both with air and with water, flexions and slight torsions of the duodenum may be produced. These usually occur near the point of attachment of the hepato-duodenal ligament (free edge of the lesser omentum) but may be produced at a lower level. They are uncertain in their occurrence and do not appear to exercise much obstructive effect. Post-mortem evidence does not show that they are of much clinical importance. There is some evidence that obstruction may be caused by flexion or torsion at the duodeno-jejunal junction. In a case reported by Petit a sharp kink was discovered at this spot, and on relief of the obstruction the gastric symptoms disappeared.

The new cases, which we now, by the courtesy of our colleagues, report, support in the main our former contention that the pressure exerted on the duodenum by the dilated stomach is an important factor in the production of obstructive symptoms. The compression must of necessity be greater before the abdominal cavity is opened, owing to the resistance and counter-pressure exercised by the abdominal muscles. For this reason experiments on the cadaver with the stomach exposed only reproduce in an imperfect manner the conditions present during life. Beyond reiterating the importance of combining lavage with the prone position we have nothing to add as regards treatment.

CASE 1. *Diabetes mellitus: acutely dilated stomach exercising pressure on subjacent duodenum.*—The patient, a male, aged 54, was admitted to St. Thomas's Hospital, under the care of Dr. T. D. Acland, for diabetes. He was previously in the army, gave a history of gonorrhœa but not of syphilis, and had indulged in alcohol. For 18 months there had been steady loss of flesh with polyuria. Latterly swelling of the feet and ankles had supervened. Examination showed an emphysematous chest, no cardiac murmurs, a large amount of sugar in the urine, and also a trace of albumin. After being in hospital six weeks the patient developed slight pyrexia and became very constipated. An acetone reaction appeared in the urine, abdominal pain was complained of, and vomiting, first of brownish fluid and then of bilious matter, set in. Coma supervened and after 12 hours culminated in death.

Necropsy.—This was performed by Dr. W. S. Colman. There was a strong odour of acetone in the body. The pancreas was wasted. The urinary bladder and ureters were dilated, and intense cystitis was present. The kidneys contained foci of suppuration. The stomach was acutely dilated. The gastric dilatation was evidently maintained by pressure of the stomach on the duodenum, since, on raising the former, gas immediately rushed into the jejunum.

CASE 2. *Fractured femur; operation; acute dilatation of stomach with pressure on the duodenum.*—The patient, a male, aged 31, was admitted to St. Thomas's Hospital, under Mr. G. H. Makins, for a fracture of the femur. At the age of 23 he had a "stroke," and the femur of the paralysed leg had been recently fractured below the lesser trochanter in consequence of a fall. The fracture was exposed and united by screws The patient died nine days later. There is no information as to vomiting, but the notes lead to the inference that either general peritonitis or intestinal obstruction was suspected just before death.

Necropsy.—Old tuberculous lesions were found at the lung apices, with a recent outcrop of miliary tubercles in their neighbourhood. The stomach was enormously dilated and crotchet-shaped, its lower border reaching the level of the anterior superior iliac spines. The diaphragm was pushed up to the level of the third ribs. The gastric contents consisted of gas and grass-green fluid. Duodenal distension was traced a little beyond the point where the root of the mesentery lay across it. The coils of small intestine were displaced into the pelvis and collapsed. The body having been in the cold chamber the mesenteric tissues were half-frozen and stiff, so the extent of the duodenal distension could be determined accurately. There was no peritonitis.

CASE 3. *Osteo-periostitis of left femur; suppurative pericarditis treated by incision; acute dilatation of the stomach with pressure obstruction of the duodenum.*—The patient, a girl, aged 17, was admitted to St. Thomas's Hospital, under the care of Mr. H. B. Robinson, for a subperiosteal abscess of the left femur in its lower third. The abscess, which contained the staphylococcus aureus, was treated by incision. Three days later the patient developed pericarditis. The pericardium was drained by removal of the sixth left costal cartilage. A vaccine was also administered. Progress was at first very satisfactory, but between five and six days after admission the patient succumbed, after vomiting profusely for a whole day.

Necropsy.—A circumscribed osteo-periostitis of the lower end of the left femur was found post mortem. The knee-joint had escaped infection. The pericardial cavity was obliterated, its walls being lightly adherent; but there was a recent acute pleurisy with effusion on the left side. The right lung contained a small suppurating infarct The stomach was acutely dilated. It was tense, vertical, and crotchet-shaped. The lower border reached the level of the anterior superior spines. The dilatation involved the duodenum down to the transverse portion, part of the latter only being implicated. The duodenal obstruction was not due to mesenteric traction, since the stomach had displaced the contracted coils of small intestine into the right flank, and not into the pelvis as ordinarily occurs. Raising the root of the mesentery had no influence on the duodenal obstruction, but immediately the stomach was lifted the gastric contents passed into and distended the jejunum.

CASE 4. *Partial resection of colon for carcinoma; acute dilatation of the stomach; flattening of the duodenum by pressure of the overlying stomach.*—The patient, a male, aged 38, was admitted to St. Thomas's Hospital, under the care of Mr. E. M. Corner, for a malignant disease of the bowel. This necessitated excision of the lower part of the ileum, the cæcum, and ascending colon. An end-to-end anastomosis was effected between the dilated ileum and the contracted transverse colon. After the operation the patient vomited profusely. He was treated by gastric lavage and saline infusion, but died on the tenth day. The growth removed was a columnar-celled carcinoma.

Necropsy.—There was a sticky, localised peritonitis around the anastomosis. The stomach, which was greatly dilated, was crotchet-shaped. Its lower border reached lower than the line joining the anterior superior iliac spines. The transverse and terminal ascending portions of the duodenum were flattened by pressure of the overlying stomach. The small bowel was contracted, its coils lying in or near the pelvis. The mesentery was prolapsed, but did not exercise sufficient pressure on the transverse part of the duodenum to prevent the gastric contents passing by on moderate compression of the stomach. The stomach contained a mixture of thick green fluid and gas. Hypostatic pneumonia was found at the left lung base.

CASE 5. *Syphilitic hemiplegia; acute dilatation of stomach; compression of duodenum by mesenteric traction and by weight of stomach.*—The patient, a male, aged 29, was admitted to St. Thomas' Hospital under the care of Dr. H. G. Turney for a recent hemiplegia which had been preceded by headache, sleeplessness, and irritability. The first paralytic symptoms occurred 14 days before admission, but they became aggravated and more widespread 13 days later. Syphilitic infection had occurred seven years before. The Wassermann reaction was positive for the blood, negative for the cerebro-spinal fluid, but the latter showed a lymphocytosis. The patient was treated with full doses of mercury and iodide. After being under observation for a month abdominal pain set in. There was profuse vomiting of dark green fluid with increasing abdominal distension, which, however, did not involve the right flank. Dilatation of the stomach was recognised and lavage resorted to. Eserine salicylate was also injected in quantities of 1/40 grain hourly for three doses. For three days preceding death no action of the bowels occurred.

Necropsy.—The right middle cerebral artery was thrombosed, and softening was found in its area of distribution. The other cerebral arteries were healthy. Gummata and gummatous scars were present in the liver. The kidneys were much enlarged, congested, and their capsules adherent. The heart was hypertrophied, but free from valve lesions. The lungs were œdematous. The stomach was greatly dilated. It lay vertically and had the crotchet outline. Its lower rounded border reached almost to the pelvis. The duodenum was dilated as far as the root of the mesentery. When the latter was severed the transverse duodenum filled out, but the gastric contents did not pass into the jejunum until the weight of the stomach was raised from the side of the vertebral column. The stomach contained a quantity of bilious fluid. The small intestine was contracted and empty.

CASE 6. *Poisoning with vapo-cresoline; acute dilatation of stomach; obstruction of duodenum by mesenteric traction.*—The patient, a woman, aged 43, was found unconscious with a partly emptied bottle of vapo-cresoline by her side. About five drachms of the fluid were missing. (Vapo-cresoline is a clear, translucent, light-yellow fluid, smelling of creasote.) The patient was admitted to St. Thomas's Hospital under Dr. Hector Mackenzie in a condition of extreme collapse, with cold and cyanosed extremities. The pupils were equal and active. No corrosion of mouth or fauces could be detected. The urine, of sp. gr. 1030, was of a dirty brown colour and contained a trace of albumin. The stomach was washed out. Next day the temperature rose from subnormal to 101° F. and signs of broncho-pneumonia appeared. The patient collapsed and died after the administration of an enema.

Necropsy.—There were no signs of corrosive poisoning externally or in the mouth, fauces, pharynx, or œsophagus. A tough membranous pellicle was found in the lower part of the trachea and extended into the main bronchi of each lung. There were signs of intense bronchitis with, near the root of the right lung, some irregular islets of broncho-pneumonia. All the bronchioles were full of tenacious yellow muco-pus. The stomach was acutely dilated and vertical in position. The lesser curvature showed the usual sharp bend and the lower end reached the level of the upper iliac spines. The duodenum was distended to the point where the superior mesenteric vessels crossed it, but here the distension abruptly ceased. The small intestines were entirely collapsed and dragging on the mesentery. On section of the mesenteric root the duodenum and jejunum at once became inflated. The stomach contained a little gas. The interior of the stomach, duodenum, jejunum, and ileum showed no corrosion. The other viscera were healthy.

ON THE OCCURRENCE OF GENERAL SUBCUTANEOUS NON-RENAL ŒDEMA AS A FAMILIAL AFFECTION.

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SOME three and a half years ago I came across the case of a baby suffering from general subcutaneous œdema, which was not due to any change in the kidneys, and found on inquiry that three other children had suffered in a like way. I have kept in touch with the family since then, and am also able to record the histories of two later-born children.

The father and the mother are healthy, and, as far as they know, no similar events have occurred in either of their families. All the children were born at full time and were apparently healthy, and they were breast-fed. The first-born, a male, remained quite well until six weeks old, then had a little diarrhœa and became somewhat suddenly swollen all over, and died at the age of seven weeks. The mother then had a miscarriage, at the end of the second month of pregnancy. The second child, a female, began to have diarrhœa when one week old, swelled all over when two weeks old, and died at the age of nine weeks with convulsions. Dr. G. S. Page, who attended this child, has kindly informed me that he tested the urine and found it normal. The third child, a male, had a little diarrhœa toward the end of the third month, then swelled all over, and died at the age of five months.

The fourth child, a male, was quite well until one month old, then had diarrhœa and a fortnight later œdema, first in the left hand, then in the face, and subsequently over the rest of the body. It was admitted to the Bristol Royal Infirmary under my care on Nov. 20th, 1907, aged 9 weeks. The skin was of normal colour and was universally swollen by an œdema which could be easily pitted by the pressure of a finger to the depth of from one-fourth to one-third of an inch. The chest and abdomen were normal. The urine contained neither albumin nor casts. The temperature was normal. The motions were green in colour and fluid. The coagulation-time of the blood, as measured by Wright's tubes, was between 10 and 12 minutes. Two grains of calcium lactate were given three times a day. On Nov. 30th—i.e., ten days later—the coagulation-time was diminished to between 5 and 5¼ minutes and the œdema was less. The child died seven days later without any fresh symptoms or physical signs occurring. At the post-mortem examination by Dr. J. J. S. Lucas no pathological changes were found. The heart, lungs, liver, spleen, kidneys, and alimentary canal were normal.

The fifth child, a male, is now aged 2½ years, and is healthy. During the second and third months of his life he had a slight diarrhœa and œdema of the face, but not of other parts of the body.

The sixth child, a female, was healthy until the age of 3 months, when she began to suffer from slight diarrhœa. I saw her for the first time on March 9th, 1911, when she was aged 3½ months, and could not detect any œdema or other abnormal physical phenomena. On March 12th she had œdema round the left eye, but this had disappeared the next day. Investigation of the fæces by Professor Walker Hall showed a small quantity of unreduced bile pigment, bacillus coli, streptococcus brevis, and staphylococcus—the two latter in slight excess; no bacillus pyocyaneus or Morgan's bacillus. None of the organisms developed pigment on culture. The child was given hyd. c. creta (½ gr. ter die). On March 30th the mother reported that the motions still contained mucus and were green and fluid, though occasionally normal. Œdema round the left eye was again present. The child was taken into the Infirmary on April 3rd; she then had œdema of both legs, and four subcutaneous ecchymoses on the left knee, back, and right arm. The heart, lungs, and abdomen were normal. The urine contained neither casts nor albumin. On April 10th the œdema affected both legs, both hands, and round the left eye. There was slight diarrhœa with green motions. On April 15th the temperature suddenly rose to 102° F., the pulse from 120 to 168, and the respirations from 28 to 64; the œdema rapidly became general; vomiting occurred and continued, and the child died in 12 hours.

At the post-mortem examination by Professor Walker Hall it was found that the heart was normal; in the base of the left lung was a small area of suppuration, containing masses of Gram-positive staphylococci; the spleen was congested; the liver showed widespread deposits of fat chiefly distributed in the peripheral parts of the lobules. In the kidneys the tubular cells showed patches of cloudy swelling; the interstitial tissue was not increased nor distended with serous fluid. In the intestine the lymphoid areas were swollen and slightly congested.

Thus, six children born to healthy parents developed a subcutaneous œdema at ages varying from 1 to 15 weeks. In one case it was slight and confined to the face, and the child recovered; in the other five, death ensued after a period of from 1 to 16 weeks. In three, at least, of the cases no albumin was present in the urine. In the two cases examined post mortem no evidence of nephritis was found.

The cases differ in many particulars from those of the disease named "œdema neonatorum." In that complaint the œdema begins within a day or two of birth, and generally in the lower limbs; the œdematous areas pit with difficulty, and the skin may be tense and shiny. The temperature is subnormal, the pulse slow, there is much drowsiness, and the feeble, often prematurely born, infant dies within 2 to 12 days of birth. It is clear that the above-described cases do not fall within the category of "œdema neonatorum."

All the cases suffered from a more or less marked diarrhœa, shown by green liquid motions before, in some instances only a few hours before, the occurrence of the dropsy. The green colour, in cases of infantile diarrhœa, may be due, though rarely, to pigment-forming micro-organisms, but is more usually due to unaltered bile pigment, owing to the increased rate of passage of food residues through the alimentary canal. This latter cause was certainly true of one of the cases and probably so in all. The children thus suffered from an intestinal catarrh and the dropsy was a related phenomenon.

It is well known that dropsy, especially of the face and extremities, may occur in infants suffering from chronic diarrhœa without albuminuria. The above cases resemble those, though differing in that the dropsy appeared within a few hours or days of the commencement of the diarrhœa.

Clinical observation has shown that albuminuria may occur without any œdema, and, conversely, that œdema may occur without albuminuria. Comparatively recent investigations of those cases in which both albuminuria and œdema occur have disclosed the fact that the occurrence of œdema is often intimately bound up with the amount of certain salts

in the blood and with the capacity of the kidneys to excrete them. Thus if the power of the renal epithelium to excrete chlorides is lessened they accumulate in the blood, raising its osmotic pressure so that œdema occurs; and similarly as regards phosphates. The excretory capacity of the kidneys varies and is independent of its permeability to the proteids of the blood. It is accordingly possible for albuminuria to occur without œdema, and for an œdema of renal origin to occur without albuminuria.

But it appears doubtful whether all cases of general œdema without albuminuria—the so-called "essential" or "idiopathic" œdema—should be referred to a diminished capacity of the kidneys to excrete salts. The œdema in the above-described cases, for instance, may have originated in quite a different way—it may have been due to damage to the walls of capillary blood-vessels by poisons absorbed from the alimentary canal without the occurrence of any change in the excretory capacity of the kidneys. Thus in one of the cases it was found that the administration of calcium chloride diminished the œdema. This is probably related to the fact discovered by Wright that calcium salts diminish, while sodium citrate increases, the rate of osmosis of blood plasma through capillary walls in an inflammatory focus where poisons produced by micro-organisms have damaged those walls. A similar event may perhaps ensue where poisons are produced in distant parts—e.g., are absorbed from the alimentary canal. In support of this explanation of the diminution of the œdema by the administration of calcium chloride, I may adduce the fact—which I have found by experiment—that calcium salts, both lactate and chloride, have no influence on diuresis either in healthy individuals or in those suffering from Bright's disease.

Meyer[1] found, in a case of idiopathic dropsy occurring in an infant, that the daily addition of from 1 to 2 grammes of common salt, or of phosphates, to the diet brought about an increased degree of the dropsy. These results may have been due to the increased salt content of the blood increasing the rate of osmosis through damaged capillary walls, and not be related to any diminished excretory capacity of the kidneys, as was thought. General œdema occurring in cases of infantile diarrhœa may thus be due to a direct action of absorbed poisons on capillary walls. This suggestion would bring such cases into relationship with those of "toxic" œdema produced by certain articles of diet (e.g., shellfish) or by drugs (e.g., potassium iodide), and with those of urticaria of intestinal origin.

It may be doubted, however, whether this is the whole story; the occurrence of "intestinal" dropsy in six successive children suggests the possibility of an inborn defect in the walls of capillary blood-vessels whereby they may be more susceptible to poisons circulating in the blood than are the capillaries of normal individuals. This idea was so impressed on my mind by the history of the first four children that, three and a half years ago, I felt bound to tell the mother that I feared that any children who might be born in the future would probably suffer from dropsy if they had the slightest diarrhœa—a prognosis only too unhappily fulfilled.

If the possibility of inborn variations in the permeability of capillary walls, and in their liability to damage by circulating poisons, were admitted, it would afford an explanation of those cases of general dropsy of the fœtus where no anatomical defects in the placenta and fœtal organs are present, of the cases of hereditary trophœdema (Milroy's disease), of the susceptibility of certain individuals to erythemata and urticaria on the slightest toxæmia, as well as of the lamentable history of the children which I have recorded.

Clifton, Bristol.

[1] Zur Kenntnis des idiopathischen Œdems des Säuglings, Deutsche Medizinische Wochenschrift, 1905, Band xxx., pp. 1464–1467.

UNIVERSITY OF MANCHESTER.—The following appointments have been made:—Lecturer in vegetable physiology and demonstrator in botany: Mr. D. Thoday. Mr. Thoday takes the place of Mr. A. Malins Smith, who has resigned on his election to the position of Principal in the Agricultural College, Chelmsford. Lecturer in orthopædic surgery: Mr. Charles Roberts. Assistant lecturers in surgery: Mr. P. R. Wrigley and Mr. Garnett Wright.

SARCOMA OF THE PENIS.[1]

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ALTHOUGH not unknown, true sarcoma of the penis is an extremely rare condition. If out of the recorded cases we exclude small melanotic tumours (usually near the meatus) and those which may be termed doubtful from want of specification, the number falls still lower; though it must be admitted, on the other hand, that some cases which have been looked upon as carcinoma of the penis may really have been sarcoma. Most of the text-books decline to commit themselves on the subject of sarcoma affecting the penis, and content themselves either by omitting reference to this altogether, as in Beattie and Dickson[2] and Coats,[3] or by stating that sarcoma occurs, but is rare. Actual specimens of sarcoma of the penis are very few in number in the pathological museums of this country, including Scotland; most of the large museums (including that of the Royal College of Surgeons in London) have none.

Clinically, the diagnosis may be exceedingly difficult, if not impossible. In the instance about to be recorded there was no doubt in the mind of the surgeon that the condition was carcinoma of the penis. In this connexion it is interesting to note that Kaufmann,[4] who terms sarcoma of the penis an example of endothelioma vasculare, points out that the condition is very liable to be confounded with urethral carcinoma. Adami[5] corroborates Kaufmann in this matter. In all the references which I have been able to collect there are only two which are to a slight extent parallel with the present one; these are recorded by W. H. Battle[6] and H. W. Webber.[7] A case of sarcoma of the crus penis is also recorded by E. H. Fenwick.[8]

The present case occurred in September, 1910, when a man, aged 60, was admitted to the Royal Sussex County Hospital suffering from a tumour of the penis, which appeared to originate in the prepuce and to have invaded the surrounding tissues for some distance and depth. The growth was of about the size of the fist, and was soft in consistence and hæmorrhagic at parts. The man had first noticed the tumour as a small papule on the dorsum of the penis about eight months previous to admission; its growth had been more rapid recently. On admission small rather firm masses were distinctly felt in both inguinal regions. As the interest of the case is pathological more than clinical, I need only say that the tumour was duly removed on Oct. 1st by Mr. H. N. Fletcher, with the whole of the penis and crura, and sent to me in the ordinary course of events for minute examination. I saw the mass when it arrived at my department, and I had no doubt, judging from the naked-eye appearances, that the diagnosis of carcinoma of the penis was correct. Sections from several parts of the growth were duly made, and when these were examined in the first instance I was not on duty. My assistant, Mr. Warren, who examined the sections, gave a tentative diagnosis of sarcoma, which diagnosis was fully confirmed by me on my return.

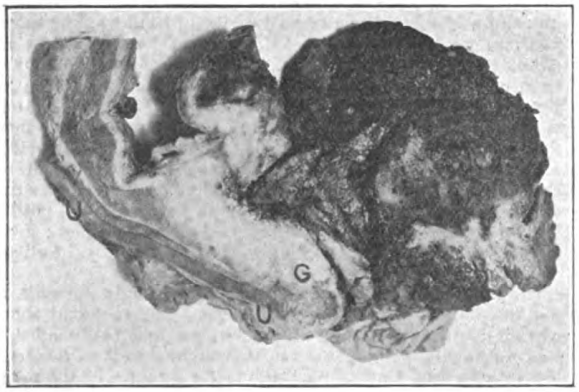
The masses in the inguinal regions enlarged rapidly after the operation; they were accordingly removed by Mr. Fletcher on Oct. 21st and sent to me for examination. The masses were found to be partly within and partly external to the glands. My report on the sections made is as follows: "Sections of portions taken from three distinct regions of the mass from one side show in each case a spindle-celled sarcoma, with hæmorrhage and partial necrosis at points. In two of the sections no gland tissue can be made out; but in the third the lymphoid tissue is present, with the sarcomatous area centrally situated." The naked-eye and histological appearances of these masses are interesting in respect that they indicate in this instance a more or less simultaneous

[1] A case from the Stephen Ralli Memorial Laboratory, Royal Sussex County Hospital, Brighton.
[2] A Text-book of Special Pathology, 1909.
[3] Manual of Pathology, 1900.
[4] Pathological Anatomy (German edition), p. 906.
[5] Systemic Pathology, p. 792.
[6] Transactions of the Pathological Society of London for 1892–3.
[7] Brit. Med. Jour., Dec. 16th, 1905.
[8] Transactions of the Pathological Society of London for 1889–90.

carriage of the growth by the blood-stream and the lymphatics. The patient died on Nov. 21st; unfortunately a necropsy was not obtained. There was little doubt, however, that there were numerous metastatic growths in the abdomen at least.

After the penis with the attached tumour had been carefully hardened for some weeks it was divided mesially, when the condition shown in Fig. 1 was presented. It will be

FIG. 1.



Mesial section of penis and attached tumour. U U, Urethra. G, Glans penis.

seen that even without microscopic examination the condition is evidently sarcoma. The tumour originates in the corpus cavernosum, extending from immediately behind the glans to rather more than an inch and a half towards the root of the penis. Both corpora cavernosa were almost equally involved. The direction of growth of the tumour is almost entirely outwards, the mass finally coming to present the appearance as shown, where the prepuce appears to be

FIG. 2.

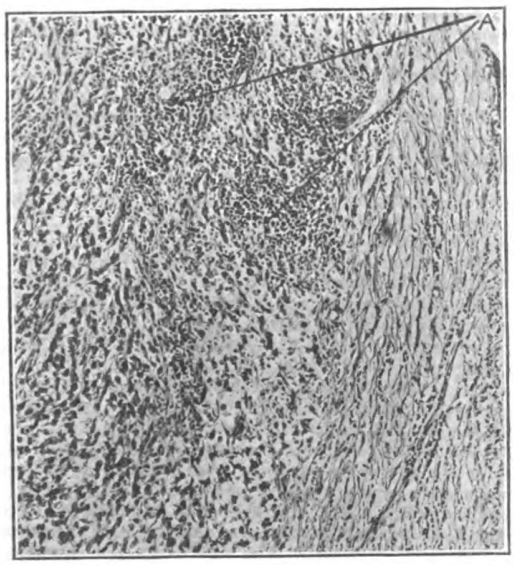


Photo-micrograph of the primary growth. A points to areas of inflammatory deposit. (× 80 diameters.)

the part which is the seat of the tumour. Another interesting feature is that at no time was there the slightest interference with the structure or function of the urethra; the urethral canal is indicated in the figure by a half cylinder of plasticine, showing as a dark rod-like mass. Considering the size of the growth, the limited area of the corpora cavernosa involved is striking.

Fig. 2 shows a photo-micrograph of the primary growth, which was kindly taken for me by Dr. E. J. Spitta. The field selected is near the surface, and shows the stretched and thinned-out epithelium covering the growth, with consequent obliteration of the papillæ. The magnification is 80 diameters. The picture is that of a spindle-celled sarcoma, with the usual interlacing of the bundles. To all appearance there is no stroma whatever. At two parts in the figure there are small aggregations of inflammatory cells; these were entirely absent in the central portions. The appearances in the case of the sections from the inguinal mass were exactly similar, with the addition of hæmorrhage and necrosis at parts, so there was nothing to be gained by having another photograph taken of this secondary deposit.

Alike in the history, course, termination, and histological picture the present case is typical of sarcoma. In most, if not all, of the cases previously recorded there were deviations in some direction. In Webber's recent case, for instance, there was purulent urethral discharge with pain on micturition, and the sections showed "a fibrous tissue network with wide irregular spaces filled with large round and oval cells." In some of the other cases the cells are also described as being round in character. No photographs are given in cases which have been recorded previously.

As to the ultimate origin of the cells from which the growth originated, it is impossible to speak with certainty. They may have arisen from: (1) the endothelium of the vessels of the corpora cavernosa (Kaufmann's endothelioma vasculare); (2) the endothelial lining of the lymphatics of the same structures; and (3) from the connective tissue cells of the inter-sinusoidal stroma. At no part was the epithelium involved in the growth.

It is not at all unlikely that we shall find, as time goes on and the routine histological examination of every piece of tissue removed from the body becomes general, that sarcoma of the penis is not so very rare as present statistics would indicate.[9]

Brighton.

A CASE OF ANTERIOR DISLOCATION OF THE SEMILUNAR CARPAL BONE.

BY W. ROWLEY BRISTOW, M.B., B.S. LOND., F.R.C.S. ENG.

THE patient, aged 48, fell down two stairs on Dec. 13th, 1910, bruising his side, damaging his left wrist, and cutting his head. He was concussed by the fall, and remained unconscious for about three-quarters of an hour. On recovering consciousness he had no notion of the exact method of falling, and did not know whether the wrist was in a position of extension or of flexion. His head condition and bruised side rapidly recovered, but the wrist remained swollen, painful, and with marked limitation of movement. An X ray examination was made, but no fracture was discovered, and the case was regarded as one of a severe sprain of the wrist. Massage and movements were tried, but these caused considerable pain and produced no beneficial result.

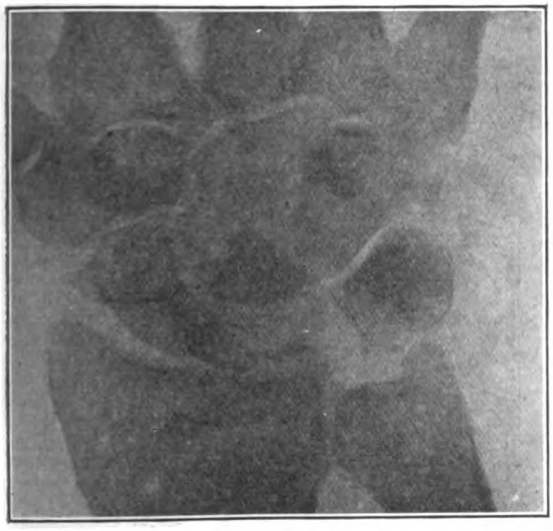
I first saw the patient seven weeks after the accident. The left wrist was thickened, and there was a prominence just on the carpal side of the radio-carpal joint and deep to the flexor tendons. There was well-marked synovitis of the flexor tendon sheaths. This part of the wrist was tender on pressure. The styloid processes of the radius and ulna were normally placed, but the palm appeared to be shortened when compared to that of the opposite side. There was no tenderness or swelling in the anatomical snuff-box to indicate fracture of the scaphoid. The movement at the wrist and mid-carpal joints was markedly restricted. Flexion was almost *nil*, extension was limited to a few degrees of movement, and abduction and adduction of the hand were limited, although to a less extent. On attempting any forcible movement great pain was experienced, and also a tingling of the fingers over the median nerve area. The grip with the left hand was very poor, and there was

[9] Additional references:—Hektoen and Reisman: A Text-book of Pathology, 1901, p. 1012 D.; THE LANCET, March 21st, 1885; Nov. 23rd, 1889 (this refers to Fenwick's case, *ut supra*).

very marked wasting of all the muscles of the forearm. These muscles at once went into spasm on attempting forcible movement of the joint.

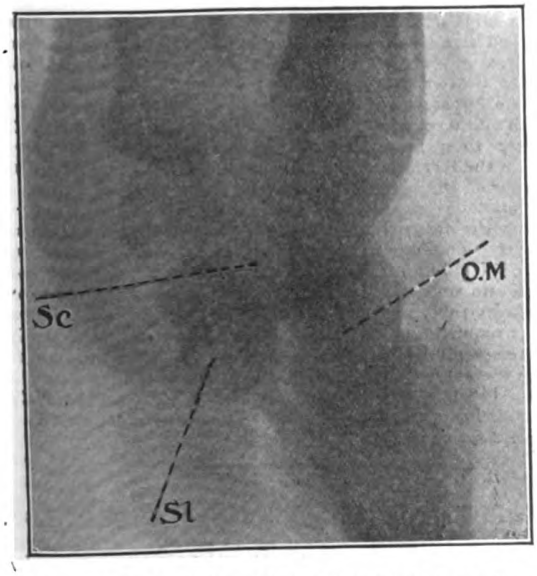
An X ray examination by Dr. A. D. Reid showed clearly an anterior dislocation of the semilunar bone. (Figs. 1 and 2.) There was no fracture of the scaphoid. The position of the displaced semilunar was such that the facet for articulation with the radius looked directly backwards, and the concave facet for the os magnum directly forwards. The head of the scaphoid was partially dislocated forward, superposing the top of the semilunar in the skiagram.

FIG. 1.



Skiagram of antero-posterior view showing displaced semilunar bone.

FIG. 2.

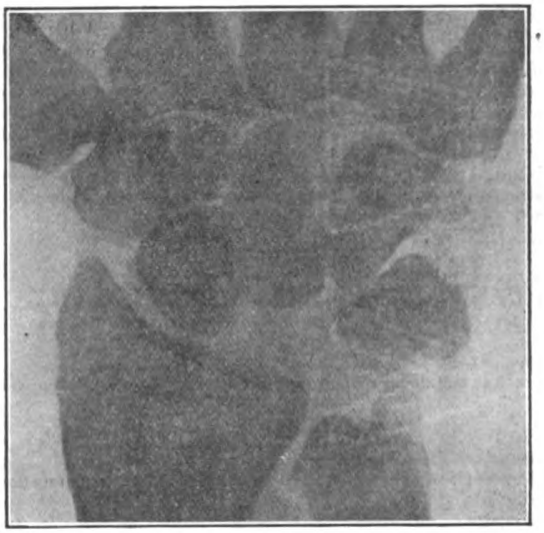


Skiagram of lateral view showing displaced semilunar bone. Sc, Head of scaphoid. Sl, Semilunar. OM, Os magnum.

Treatment.—Operation on Feb. 14th, 1911, under ethyl chloride and ether. Under the anæsthetic no further movement was possible. Attempted reduction was not successful. When the muscles were relaxed under the anæsthetic the obstruction to the joint movement was obviously bony. An incision 2 inches long was made immediately to the ulnar side of the palmaris longus tendon; this tendon and the median nerve were retracted outwards and other flexor tendons inwards. The semilunar bone was found lying between the flexor longus pollicis and the flexor profundus digitorum, with the concave articular facet for the os magnum looking directly forwards—the position which the skiagram had previously shown the bone to occupy. The semilunar had come forward through the capsule of the wrist-joint, which had completely closed behind it. The bone was lying free except for two strong ligaments holding it to the scaphoid on the radial side. These ligaments were divided and the semilunar was excised. The wound was closed with silkworm gut. After the operation the movement at the wrist-joint was quite free, and full flexion was possible. The wrist was bandaged up in a semi-flexed position.

On Feb. 21st the stitches were removed. The wound healed by first intention. The muscles of the forearm were treated by the method of graduated contraction with an

FIG. 3.



Skiagram showing antero-posterior view after excision of semilunar bone.

FIG. 4.

Skiagram showing lateral view after excision of semilunar bone.

induced current[1] instead of by ordinary massage, and the wrist and mid-carpal joints were moved in the same way. The treatment was carried on for six weeks, the amount of movement being gradually increased. The patient resumed his work a fortnight after the bone had been excised. He was last seen on April 19th, when the movement at the joint was excellent; extension, abduction, and adduction were complete. Flexion was almost full, about 70°, showing that both the wrist and mid-carpal joints were functioning. The wrist-joint is strong and the patient is quite able to do anything with the hand, and suffers no ill-effects from the injury.

Remarks.—The dislocation of a single carpal bone is a somewhat rare occurrence. Codman and Chase[2] have collected 12 cases of dislocation of the semilunar bone, and in almost all of these cases there has been fracture of the scaphoid as well. In the only two cases in which this dislocation occurred, and in which the scaphoid was intact, the radius or ulna was fractured. In the present case, although a series of photographs and stereoscopic views were taken, there was no sign of fracture of the scaphoid or of the radius or ulna.

Harley street, W.

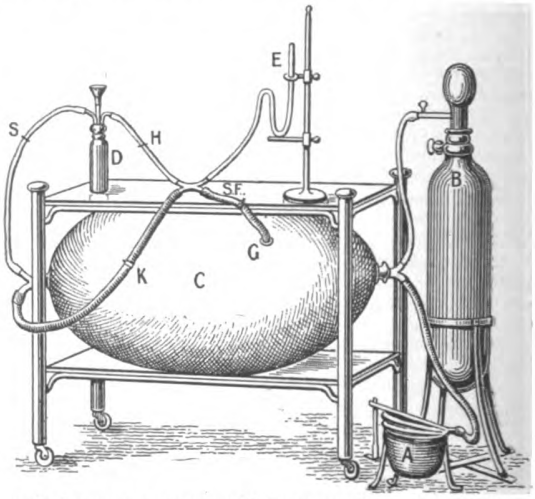
A CASE OF PLUS-PRESSURE ANÆSTHESIA FOR EXPLORATORY THORACOTOMY.

BY F. HERBERT WALLACE, F.R.C.S. EDIN.,
LATE SENIOR ANÆSTHETIST TO THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.

THE following case will, I think, prove of interest to readers of THE LANCET.

The patient, aged 23 years, was suffering from non-malignant stricture of the œsophagus. For the purpose of performing an exploratory thoracotomy anæsthesia was brought about by ethyl-chloride followed by $CHCl_3$. A Skinner mask was first tried, but as there was some difficulty in retaining the tracheal tube in position tracheotomy was performed and a full-size Durham's tube was inserted and the anæsthetic administered through the tracheotomy tube by using the Junker's apparatus without any increased pressure, respiration taking place through the free tube. As soon as the pleural cavity was opened, 30 minutes after the commencement of the anæsthetic, the free air-way was gradually closed up, and air under pressure of 15 mm. of mercury was forced into the trachea. This pressure was found to be sufficient to keep the lungs distended well up to the thoracic wall. There was a certain amount of leakage about the tracheotomy wound and into the pharynx. The manometer registered 10 mm. of mercury at inspiration and 15 mm. at expiration. Continuous pressure was used. A corneal reflex was kept throughout the whole time of operation. The patient's pulse at the commencement of the increased pressure was 80 beats per minute, regular, and of good volume, the respirations being 18 per minute. The use of a lung retractor and manipulation caused the upper lobe to collapse, but this was quickly overcome when retraction ceased. After 15 minutes of pressure the leakage became more pronounced, and a face-piece was added to overcome the escape through the nose and mouth. After 25 minutes the patient began to get slightly cyanosed; the pulse-rate had increased, and the respirations were now 24 a minute. Oxygen was allowed to run into the bag, and this successfully combated the cyanosis. The regular movement of the diaphragm never ceased the whole time. The patient's pulse was getting more rapid and somewhat collapsible, 96 beats a minute. An injection of pituitary extract was given—10 c.c. of a 20 per cent. solution; this considerably improved the volume, but did not lessen the number of beats. The upper lobe towards the end of the operation did not move so well as at first and appeared to be œdematous, but the lower lobe was not so affected. The lung, however, distended well into the wound. While the thorax was open the pulse-rate never reached 100 beats a minute, but did so during the closing of the wound. At the finish of the operation, an hour and 15 minutes from the commencement of the anæsthetic, the patient had a good colour and the pulse was about 112, regular, and of good volume. There was, however, as indicated by the pulse, severe shock in spite of special precautions taken both before and during the operation. The wound was closed as accurately as possible and an attempt was made to render it air-tight. Pressure was kept up until the dressings were on. Three drachms of chloroform were used and 5 cubic feet of oxygen. The patient came round from the anæsthetic when the bandages were being adjusted. I will briefly describe the apparatus used.

A foot-pump and cylinder of oxygen are coupled to a large and stout rubber gas-bag. A V-shaped junction then carries a Junker's apparatus on one arm, and the other links up again



A, Foot pump; B, oxygen cylinder; C, gas bag; D, Junker's inhaler; E, manometer; F, air-way; H, valve; G, delivery tube; S, screw regulating clips; K, spring clip. Dark tubing, ½-inch rubber; light tubing, ¼-inch rubber.

with the efferent tube of the Junker. A manometer is also in the air-way and a free opening close to the delivery tube. Spring clips are placed on the air-way and the manometer tube and screw regulator clips on the afferent Junker tube and free air-way. A valve is in the efferent Junker tube to prevent the plus-pressure blowing the chloroform into the apparatus. The main tubing is half an inch and the Junker a quarter of an inch in diameter. The delivery tube may be either inserted into the trachea through the larynx and should be about three-quarters of the diameter of the trachea, or fitted in a tracheotomy tube. A mask may be used on the face with no outlet, in order to prevent the fall of air pressure through leakage into the pharynx. Pressure is obtained by the foot pump, and the amount of chloroform is regulated by the screw-clips. There is a certain amount of leakage round the tracheotomy wound or delivery tube, and the free tube should be slowly closed till the requisite pressure is obtained by manometer, or, what is more essential, till the lungs expand well up to the opening in the thoracic wall.

I am indebted to Mr. Edward Gillespie and to Mr. Walter Edmunds for permission to publish the notes of this case.

Upper Clapton-road, N.E.

[1] An account of this method will shortly be published.
[2] Annals of Surgery, 1905.

INFARCT OF THE TRANSVERSE COLON.

BY H. T. GILLETT, M.D. LOND.

CASES of infarct of the large bowel are so rare that the following is worth placing on record.

The patient, a woman, aged 49 years, had been troubled with piles for some time, but was otherwise well, till she woke in the night of Dec. 18th, 1910, with severe sense of pain in the epigastrium and flatulence. She blamed the cocoa she had had for supper. On the 19th diarrhœa began and the pain in the abdomen increased. On the 20th the diarrhœa continued and there was nausea. Blood in the stools was first noticed in the afternoon. During the following night she had two actions of the bowels; both were practically pure blood, bright in colour, and only very little

fæcal matter (perhaps half an ounce in weight). Some clots were present of the size of half a hazel-nut—about five ounces of blood in each stool. Dr. William Collier saw the patient on this date. On the 21st there was more nausea; the abdomen was not distended. The pain was mostly below the navel and right across the abdomen; there was slight rigidity all over. The pulse and temperature were normal. On the 22nd an enema of olive oil was retained. Two actions followed: (1) charged with blood and fæcal matter; and (2) no blood, but pultaceous fæcal matter. On the 23rd the abdomen was a little distended and there was more nausea. The temperature on the previous night was 99° F. The pulse rose to 84. Professor Osler saw the patient on this date. A distinct thickening could be made out between the navel and the ensiform cartilage; it was tender and moved slightly on respiration. Mr. A. P. Dodds-Parker operated in the afternoon. The transverse colon for the greater part of its extent was of a dark purple colour; the walls were greatly thickened. It did not look gangrenous. The ascending colon was anastomosed to the lower part of the descending colon. The patient did well for the first 12 hours. Then she had tetanic spasms, which continued at intervals of a few minutes for nearly 12 hours. She died late in the afternoon of the 24th.

A post-mortem examination was performed by Dr. A. G. Gibson. The transverse colon was of a dark purple colour; the walls were greatly thickened and the lumen was much reduced. There were minute hæmorrhages in the walls, which were microscopically shown to be in a condition of infarct. The branches of the colica media were empty; no emboli were found; there was no peritonitis, but there were hæmorrhages in the transverse meso-colon. There was a small amount of blood-stained fluid in the peritoneal cavity. Microscopic examination of the mesenteric arteries did not show any sclerotic changes. There was an old mitral lesion, with some narrowing of the orifice, and a few vegetations on the edges of the valve.

Infarct of the intestines is comparatively rare. Gallavardin[1] collected 83 cases; of these, 63 were embolic. Jackson, Porter, and Quimby collected 214 cases of infarct, including both thrombotic and embolic cases. Of these, 64 per cent. were men; 47 were operated upon and only 4 recovered. In one case (Elliot's) that recovered 48 inches of the bowel were resected. In the case now recorded the short-circuiting of the bowel was successful, but death took place as a result of toxic poisoning. Possibly resection might have prevented this if the patient had been strong enough to stand the operation.

Osler and McCrae say that the mesentery may be greatly thickened, a veritable hæmatoma. In the above case there was only a little extravasation of blood and no thickening in the mesentery. Kemp[2] says that occlusion of the smaller branches of the superior mesenteric causes embolic or thrombotic ulcers of the intestines, and there may be lesions scattered in several places over the bowel with healthy segments between them, but occlusion of a larger vessel usually involves a continuous segment of the gut, quite frequently in the lower jejunum and ileum.

Two types of cases have been described by Kussmaul and Gerhardt.[3] 1. Sudden abdominal pain followed by nausea or vomiting and also diarrhœa, which is at first mucous and watery and at last bloody. Gerhardt states that the blood is bright red when the inferior mesenteric is obstructed, but that in obstruction of the superior vessel it is darker. Kemp states that it is generally dark. In the present case it was bright red in the actions on the third day of the illness. 2. The second type of case simulates acute intestinal obstruction, with distended painful abdomen and sometimes fæculent vomiting. Apparently this case illustrates the first type, though signs of obstruction showed themselves before operation was resorted to.

The mortality is very high, 92 per cent. in Jackson, Porter, and Quimby's cases. Death occurs within three days as a rule; the longer duration, six days in this case, may have been because the colon was affected and the obstruction was not complete.

I am indebted to Sir William Osler for his help and suggestions in recording this case.

Oxford.

[1] Gazette des Hôpitaux de Paris, 1901, p. 929.
[2] Kemp's Diseases of the Stomach and Intestines.
[3] Würzburger Medicinische Zeitschrift, 1863-64.

CASES OF (1) CHRONIC PANCREATITIS, AND (2) CARCINOMA OF THE PANCREAS.

BY G. Y. THOMSON, M.B., B.S. LOND.,
HOUSE SURGEON, GUY'S HOSPITAL.

Mr. R. P. Rowlands has kindly permitted me to publish the following consecutive cases with remarks by him on the diagnosis. There are six cases altogether, of which the first three are cases of chronic pancreatitis and the last three of carcinoma of the pancreas. The former have done very well; the latter have died, one on the third day and the other two about four months after the operation and nine months from the onset of jaundice. In Mayo Robson's and Cammidge's text-book altogether 49 cases are quoted; of these, 39 are cases of chronic pancreatitis, with two deaths, not in any way connected with the operation, and ten cases of carcinoma of the pancreas with seven recorded deaths. The following important points may be gathered from a careful consideration of these cases: (1) The results of cholecystenterostomy in cases of chronic interstitial pancreatitis compressing the bile-duct are excellent; (2) the difficulty of diagnosis between the two conditions even when a laparotomy is performed, and hence the advisability of cholecystenterostomy in doubtful cases; (3) the mortality in cases of carcinoma, though temporary relief may be afforded by operation.

Chronic Pancreatitis.

CASE 1.—A man, aged 35, admitted on Feb. 16th, 1908, for pain in the upper part of the abdomen on the right side and jaundice. For two months he had suffered a good deal from indigestion and pain about the epigastrium and gall-bladder region, often vomited soon after meals, and occasionally had diarrhœa, and soon became jaundiced; the stools became light-coloured and the urine very dark. On admission the jaundice was a little better, but attacks of pain were very severe, being only relieved by morphia. The pain was above and a little to the right of the umbilicus, extending straight through to the back; the patient did not become pale and there was no sickness during the attack. The upper part of the abdomen was tender and rigid, especially to the right of the mid-line; the gall-bladder was palpable. By Feb. 19th the jaundice was worse again, attacks of pain more severe, and the patient was wasting rapidly. Exploration was advised.

Operation.—The abdomen was opened through the upper part of the right rectus. The gall-bladder was found to be enlarged. No stones were felt in it or in any of the bile-ducts, or at the common opening o the common bile and pancreatic ducts into the duodenum. The head of the pancreas was enlarged and hard, and was thought to be carcinomatous. A small piece which was removed only showed inflamed pancreas. No stones were felt on palpating the pancreas. Anastomosis was made between the fundus of the gall-bladder and jejunum about 9 inches from the duodenal and jejunal flexure; suturing was direct with the aid of clamps. The opening was made as large as possible, and three layers of sutures were used. The abdomen was completely closed.

Recovery was uninterrupted, the patient never had another attack of pain, and the jaundice soon disappeared; he rapidly gained weight and left hospital on March 13th. Since then he has worked constantly. On May 10th, 1910, he was seen looking and feeling well. There had been no pain nor indigestion since the operation.

CASE 2.—A woman, aged 34, admitted on March 3rd, 1908, had 18 months before felt very ill; no diagnosis was made, although typhoid fever and influenza were suggested. Seven weeks before admission she had a feverish attack lasting three weeks; there had been a good deal of fever, a purpuric rash all over the body, a great deal of abdominal pain, also two rigors and pains in the limbs; a diagnosis of influenza was made. Soon afterwards she had a good deal of pain on the right side and she became jaundiced; the pain got more severe and the jaundice got deeper and deeper. On admission she was deeply jaundiced and thin. She had attacks of severe pain in the upper and right part of the abdomen; gall-bladder was palpable; there was a great deal of tenderness and rigidity just above the umbilicus. A diagnosis was made of obstruction of the common bile-duct, due probably to stone.

Operation.—The abdomen was opened through the upper part of the right rectus. The gall-bladder was distended, but no stone was found in the biliary apparatus. The head of the pancreas was considerably enlarged and hard, and no stone could be felt about the pancreatic duct or duodenal papilla. Anastomosis was made between the fundus of the gall-bladder and jejunum. There was a good deal of oozing of blood during the operation; therefore a tube was placed in the right kidney pouch for drainage. The patient did well for a few days, but three weeks later a subdiaphragmatic collection of sterile blood was drained, after which she rapidly recovered and left hospital well on May 10th.

CASE 3.—A man, aged 40 years, was admitted on May 24th, 1909, for deep and persistent jaundice of five weeks' duration. He had served in the army for 13 years, and thought he had syphilis in India in 1896; he had a slight attack of dysentery during the South African war. He had vomited nearly every morning for two years, but otherwise had been in good health until April 20th. On the following day he felt ill and gradually became jaundiced. A medical man on April 21st treated him with mercury and potassium iodide. On admission he was jaundiced and the liver was enlarged; he had no pain. Gradually the jaundice became deeper, until it was greenish-black, and he gradually lost flesh, also suffering a good deal from itching of the skin. The gall-bladder could be felt, and there was a vague swelling and tenderness just above the umbilicus in the mid-line. The temperature was

never raised above normal. A diagnosis of syphiloma or growth of the pancreas was made and an exploration was advised.

Operation.—On July 20th the abdomen was opened and the biliary apparatus examined in the usual way; no stone was discovered. The gall-bladder was enlarged and distended; the head of the pancreas was enlarged, hard, and fixed; another distinct and hard enlargement was found near the tail of the pancreas—these were considered to be malignant. The liver was considerably enlarged, but no growth was seen or felt in it. Cholecyst-jejunostomy was performed; the limbs of the jejunal loop sagged, thus tending to produce kink; each was held np by a suture passed through the capsule of the liver. The abdomen was completely closed, and the patient made a rapid and complete recovery. He is now in perfect health and doing heavy work.

Carcinoma of the Pancreas.

CASE 4.—A man, aged 41, who weighed 13½ st. until July, 1910. He thought he had indigestion early in July and after a week or two jaundice appeared. He had a similar attack five weeks before the date of consultation (Dec. 8th, 1910), with discomfort high in the epigastrium, nausea, anorexia, but was not sick. He had had two attacks of sickness, one in September after bathing. The patient was said to be subject to migraine. The motions were clay-coloured and had been much lighter lately; the urine had been high-coloured until five weeks ago. There had been no constipation lately. He had worked hard until a week ago. There had been no pain with any of the attacks of migraine. Examination on Dec. 8th: The patient is very thin; he is jaundiced but not deeply; skin dry and rough, tongue furred, some anæmia, arms very dark; motions pale clay-coloured. No rectal or colic growth could be found. An enlarged gall-bladder could be felt under the slightly enlarged liver; no pancreatic swelling could be felt; there was no elevation of liver dulness. The chest was normal.

Operation.—Open ether. The abdomen was opened through the upper part of the rectus, some fibres of which were cut across. A large gall-bladder was at once seen; common duct also dilated; pancreas enlarged, hard, and fairly fixed; no stone could be felt in the common duct. It was thought that the condition of the pancreas was probably due to chronic pancreatitis or possibly to carcinoma of the head of the pancreas. The body of the pancreas was enlarged and some hard nodules were felt along the lower border of it. The liver was slightly enlarged, but no growth could be seen or felt in it, and none could be felt in the portal fissure. It was seen that it was impossible to join the gall-bladder to the duodenum, which was not as moveable as usual. It was therefore decided to join it to the jejunum about 12 inches from the origin. The gall bladder was so distended that it was impossible to get any of it into the clamp. After packing the loin and above the gall-bladder, the patient was turned on his right side and the gall-bladder was opened, allowing a large amount of bile to escape. Clamps were then applied above the jejunum and gall-bladder, whilst a large opening was made in each of them, and anastomosis was made by means of Pachenstecher's thread reinforced with several interrupted sutures of the same material. The packing was then removed and the parts were cleaned. The abdomen was closed, catgut being used for the peritoneum and salmon-gut sutures for the remaining layers. The operation lasted about 35 minutes, and the patient was not much worse at the end of it.

Directly the patient was returned to bed continuous rectal infusion was commenced. He had rather a bad night, vomiting a good deal of brown material, which was clearly altered blood and bile mixed together. Four pints of saline were given per rectum during the night and only water by the mouth. There was some oozing of blood from the wound; this was controlled by putting in another stitch. The temperature was normal; pulse 74; there was no pain. Calcium lactate was given by the mouth and per rectum. Dec. 15th: 10 oz. saline enemata were given every four hours, alternating with nutrient enemata. The patient returned home on Jan. 5th, 1911. The jaundice had not entirely gone, but it was rapidly clearing, especially on the limbs. He had done very well. The weight at the date of the operation was 11 st. 6 lb. When he left the hospital it was 10 st. 5 lb. By Jan. 18th it was 10 st. 11 lb. On March 1st it was 11 st. 3 lb. 8 oz. The patient, however, did not progress satisfactorily; he developed œdema of the legs and ascites, which indicated that he was really suffering from carcinoma of the pancreas. Diarrhœa with oily stools persisted in spite of pankreon in increasing doses. He died on May 11th.

CASE 5.—A married woman, aged 43. The patient had always been fairly healthy, although at times she had suffered from some indigestion, and had had two attacks of influenza. Five months before admission she caught a chill and then became jaundiced. The jaundice had never left her, and she was getting gradually weaker. Since the beginning of the illness she had lost 3 st. in weight. She had had a little pain in the upper part of the abdomen, but it had never worried her very much. The yellow colour had gradually increased in intensity, and there had been considerable irritation of the skin. During her illness the urine had been persistently dark in colour, and the fæces had had a "cement colour." The patient had never suffered from colic pains nor from vomiting.

Operation.—Jan. 7th, 1911. Morphia (¼ gr.) was injected 30 minutes before the anæsthetic. The abdomen was opened through the upper part of the right rectus, some of the fibres being cut across. A greatly distended gall-bladder was seen, and the common duct was also dilated. The pancreas was hard and enlarged as regards the head, neck, and body. No enlarged glands were felt. The pancreas was not fixed to the spine. The liver showed no signs of growth. No stone was felt about the duodenal papilla. A diagnosis of chronic pancreatitis was made, but suspicion of growth remained. No gall-stone was found in the gall-bladder or duct anywhere. The fundus of the gall-bladder was joined to the jejunum 10–12 inches from the duodenum. The kidney pouch was well packed with gauze and the parietal wound was also protected. The patient was turned slightly on her side while the gall-bladder was incised and almost emptied of very thick bile. The gall-bladder was clamped with forceps, the parts cleaned, and anastomosis made between the gall-bladder and jejunum as already mentioned. Two continuous silk sutures were used with a few interrupted reinforcing sutures. The abdomen was closed with catgut for the peritoneum and rectus sheath. The operation was well borne.

During the night the patient vomited a large amount of altered blood and bile. The stomach was washed out early in the morning; this reduced the pulse from 130 to 110. She was better again in the evening, but on the morning of the 9th brought up nearly half a pint of bile. She was better after this until the evening, but was again sick in the evening, bringing up 6 ounces of rather offensive bile and blood; afterwards she rapidly improved. She was given a fair amount of water by the mouth and nutrient and saline per rectum, alternating every four hours, 60 grains of calcium chloride in each nutrient. On the third day the vomiting ceased. The bowels were opened as a result of enema terebinthinæ. On the 10th the patient, who had wasted a great deal, became delirious. The bowels were opened three times later in the day, but this gave no relief. The head and shoulders were lowered in case the delirium was due to cerebral anæmia. She slept fairly well after morphia (1/6 gr.), but the next day was weaker and more stupid, although she took food well and the bowels were acting. The temperature was normal; the abdomen was supple and moved freely. She continued to take liquid nourishment well, and after three days gradually recovered consciousness, and although she had no control of the sphincters for several days she made a rapid recovery and went out of the hospital. Jaundice was then much diminished and the general condition much improved.

The patient, however, did not progress satisfactorily and had ascites and œdema of the legs, which indicated that she was suffering from carcinoma of the pancreas. She also had diarrhœa with oily stools, which was only partly relieved by pankreon. Her abdomen was twice tapped; on one occasion 22½ pints were drawn off. She died on May 18th.

CASE 6.—The patient had had a series of bilious attacks from an early age, but otherwise had enjoyed fairly good health. Seven weeks before admission there was a general feeling of malaise, depression, and loss of energy. This was followed by gradual onset of jaundice, accompanied by dark-coloured, firm, and clay-coloured stools. The patient had occasional attacks of intense pain across the upper part of the abdomen. The pain was of a colicky nature, sometimes causing vomiting. Two stones in weight had been lost during the last eight weeks. The jaundice had been gradually increasing in intensity. Despite careful medical treatment the patient had continued to lose weight, and the jaundice had not got less; hence laparotomy was advised.

Operation.—The gall-bladder was found to be greatly distended. The pancreas was very hard, and two hard lumps were felt on the convex surface of the liver. Cholecystenterostomy was performed in a similar manner to those cases which have been already described. Carcinoma of the pancreas with secondary deposits in liver was diagnosed. The patient died from cardiac failure three days after the operation.

The necropsy showed diffuse carcinoma of the pancreas with small secondary deposits in the liver. The common bile-duct was markedly dilated. No gall-stones were present in the gall-bladder or biliary apparatus.

Causes of pancreatitis.—(1) Ascending infection from duodenum; (2) obstruction of pancreatic or biliary duct by calculi (chronic).

Diagnosis.—1. A history of previous attacks of jaundice associated with colic, or of colic alone, is in favour of gall-stones. A beginning with vague pains in the epigastrium, associated with fever and gradual appearance of jaundice, is in favour of pancreatitis.

2. Impaction of a stone in the common bile-duct is usually associated with severe colicky pain. Pain is especially bad at moment of impaction. The patient is sick and pale, with small feeble pulse, and shivering may occur. No relief is afforded except by morphia or lapse of time. Typical biliary colic is much more sudden and severe than that associated with pancreatic disease, whether inflammatory or malignant. It may fall away as suddenly as it came. It is felt deep in the right side above and to the right of the umbilicus; it extends to the back, and especially towards the right shoulder. The pain associated with pancreatic disease is less violent and unaccompanied by shock, it is lower, and extends to the back lower down and more to the left than that of biliary colic. In some cases impaction of stone in the common bile-duct is not associated with pain; nausea then takes its place.

3. The local tenderness due to impaction of a calculus is usually higher and more to the right than that due to pancreatic disease.

4. The jaundice due to stone is more intermittent than that due to pancreatitis, and especially than that due to growth, which gets progressively deeper. Jaundice due to pancreatitis is rarely so deep as that due to growth, but when chronic pancreatitis has lasted a long time the jaundice may become very deep or even greenish-black, as in one of the cases.

5. Enlargement of the gall-bladder is against gall-stones as a cause of jaundice, although there are exceptions to this rule as to all others.

6. With growth or pancreatitis a vague swelling about the umbilicus is sometimes felt, especially when patient is under an anæsthetic.

7. Severe anæmia and wasting occur in pancreatitis and growth, but not until quite late in jaundice due to stone in the common bile-duct. So severe are the blood changes that many cases of chronic pancreatitis with but slight jaundice have been diagnosed as pernicious anæmia.

8. Diarrhœa, with fatty and fœtid stools containing muscle fibres, is commonly associated with pancreatitis, and

also with carcinoma of the head of the pancreas. A stone impacted at the common opening of the pancreatic and bile-duct may give the same symptoms.

9. Cammidge's reaction is rather complicated for general use, but it should always be tried, as a positive reaction strongly points to inflammation, as against growth.

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FEEDING EXPERIMENTS IN FOWL SPIROCHÆTOSIS.

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THE natural or artificial infection of animals by pathogenic protozoal parasites viâ the alimentary canal is a subject both interesting and important. It was first given prominence by the lamented Miller,[1] who showed that white rats became infected with Hepatozoon perniciosum by devouring the mites Lelaps echidninus which served as intermediate hosts for that parasite of the mononuclear leucocytes. Recently Strickland[2] has found that rats can be infected with T. lewisi by eating fleas which contain this trypanosome. His conclusions are: (1) Infection of rats with T. lewisi is caused by the rats' act of eating infective fleas; (2) it is not caused by contamination of the rats during a short time, nor by their being bitten by the fleas; (3) many more fleas are infective than cause infection in nature; (4) the infective form of the trypanosome, which is probably the "small trypanosome" of Swellengrebel and Strickland, must reach the blood through the gut-wall; (5) it is possible that other trypanosomiasis may be transmitted by perhaps even non-blood-sucking creatures. Minchin and Thomson[3] criticise these results and state that their experimental results support the belief that the infection of rats with T. lewisi is not brought about normally through the rat eating the flea, but by the infection of the wound made by the proboscis of the flea serving as a place of entry for the ripe infective form of trypanosome—the final developmental form in the flea—which is regurgitated from the insect during the act of feeding.

Turning now to the question of spirochætosis we may note in the first instance that Leishman[4] is inclined to think that in the case of Sp. duttoni and Ornithodoros moubata infection takes place during the act of feeding, not by way of the veneno-salivary secretions, but viâ the wound made by the tick, which becomes bathed in the clear fluid copiously secreted by the tick from its coxal glands, and sometimes also by the white secretion from its Malpighian tubes, these fluids containing developmental forms of the spirochæte derived from the granules which I[5] have shown in the case of the fowl spirochæte are shed by the parasites in the contents of the intestinal sac of its intermediate host—Argas persicus. In all probability this is the way in which man acquires African tick fever, but it is to be noted that, so far as Sp. recurrens is concerned, Gózony[6] has recently shown that it can penetrate the mucous membrane of the intestinal tract in experimental animals. The last author I would quote in this very brief *résumé* is Schellack,[7] who, working with Sp. gallinarum (marchouxi), notes that if the hen-house be infected the birds can acquire spirochætosis per os.

This leads one to the subject of this paper, for I have found that if healthy chicks be fed on ticks (Argas persicus), which themselves have recently fed on birds infected with Sp. granulosa penetrans, the fowl spirochæte of the Soudan, the chicks speedily develop spirochætosis. Not only so, but if healthy chicks be fed on a sufficient number of ticks which, having fed a long time previously on spirochæte-infected birds, harbour, not spirochætes, but granules only, these chicks likewise become infected through the alimentary canal. In both cases the incubation period is short, in one instance it was very short, and it may be said that care was taken to exclude any other possible source of infection as will be evident from the following account of the experiments.

Experiment 1.—May 20th and 21st: A batch of ticks (Argas persicus) was fed for two successive nights on a chick showing a heavy spirochæte infection. Ungorged ticks were rejected and of the gorged a few were taken and their cœlomic fluid and the contents of their intestinal sacs examined by the dark-field method, which proved the existence of numerous living spirochætes in the ticks. May 22nd: A healthy chick, newly brought in from a locality outside Khartoum, where no fowl spirochætosis was known to exist, was placed in a glass jar and given seven of these gorged ticks as food. It devoured them all as they were introduced one by one. A ring of vaseline was placed round the lip of the jar to prevent the access of any ecto-parasites, such as lice, which I have proved can act as vectors of the fowl spirochæte. May 28th: To-day for the first time the bird was found with spirochætes in its blood. The disease ran a fairly severe and rapid course and the bird died, heavily infected, on June 1st.

Experiment 2.—An experiment similar in all respects to the above, with the single exception that the chick employed was carefully examined and cleared of all ecto-parasites, such as lice and mites, before being placed in the jar, was carried out, the feeding with infected ticks taking place on April 30th. It was thought advisable to take the precaution mentioned, though as this chick also came from an uninfected district, was perfectly well and harboured very few ecto-parasites, it was perhaps scarcely necessary. Still, it is well to avoid every possible source of fallacy. On June 2nd the chick was found infected, the incubation period being very brief, but it must be remembered that spirochætes can be much more readily detected by the dark-field than by any other method, and hence old views on incubation periods in spirochætosis may require revision. At the same time, it is worthy of note that by June 3rd the infection was heavy, and the bird died on the evening of June 4th.

I think these two experiments prove conclusively that spirochætal infection in fowls can take place per os. The other two experiments—one negative, the other positive—were carried out with ticks which, so far as could be told, only harboured spirochæte granules. I say "so far as could be told," for it is not possible, of course, to dissect and examine fully every tick of the batch used for feeding the chick. As Leishman[8] says: "This fallacy is one which is always present in such work as that under consideration. For example, whatever conclusion one arrives at as to the condition of a given batch or brood of ticks must be founded on the examination of a sample of such batch. However large the sample, and there are obvious limits to this where it is desired to follow up the course of subsequent events in such a batch, any conclusion is open to the objection that a different condition existed in a member of the group which was allowed to survive. Conservative surgery in the case of a tick is unfortunately impossible." I have, however, found that a mild form of conservative surgery is possible in ticks. One can snick the edge of the body and obtain a drop of mixed cœlomic and intestinal sac fluid, sufficient for dark field examination without doing the tick a fatal injury, and this technique has proved very useful in some of the work. It was employed in the following experiments, and in addition ticks were dissected and certain of their tissue, especially the Malpighian tubes, examined both by the dark-field and as stained preparations. In no case were any spirochætes found.

[1] Miller, W. W.: "Hepatozoon Perniciosum (N.S.N.Sp.); a Hæmogregarine Pathogenic of White Rats; with a Description of the Sexua Cycle in the Intermediate Host, a Mite (Lelaps Echidninus)," Bulletin No. 46, Hygienic Laboratory, Public Health and Marine Hospital Service of the United States, 1908.

[2] Strickland, C.: "The Mechanism of Transmission of Trypanosoma Lewisi from Rat to Rat by the Rat Flea," Brit. Med. Jour., May 6th, 1911.

[3] Minchin, E. A., and Thomson, J. D.: "The Transmission of Trypanosoma Lewisi by the Rat-flea (Ceratophyllus Fasciatus)," Brit. Med. Jour., June 3rd, 1911.

[4] Leishman, W. B.: "Observations on the Mechanism of Infection in Tick Fever, and of the Hereditary Transmission of Spirochæta Duttoni in the Tick," Transactions of the Society of Tropical Medicine and Hygiene, vol. iii., No. 3, January, 1910.

[5] Balfour, A.: "The Infective Granule in certain Protozoal Infections, as Illustrated by the Spirochætosis of Sudanese Fowls," Brit. Med. Jour., April 1st, 1911.

[6] Gózony, L.: "Die Infektionswege und natürliche Immunität bei Spirochätosen," Centralblatt für Bakteriologie, I. Or., vol. lvii., No. 6, Feb. 13th, 1911.

[7] Schellack, A.: "Versuche zur Ubertragung von Spirochæta gallinarum und Spirochæta Obermeieri," Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1909, Band 30, Heft 2, S. 352.

[8] Loc. cit.

Experiment 3.—A chick was given nine ticks which 12 days previously had fed on a bird with spirochætosis and which, as noted, only showed granules. The chick ate them all, but never developed spirochætosis. That it was not immune was shown by the fact that at a later date it was successfully inoculated in the usual way with spirochætal blood.

Experiment 4.—June 15th, 1911: A healthy chick, free of all vermin, was given, and devoured at once, 14 starved ticks which had last fed on March 20th, 1911, and then on a bird with acute spirochætosis. As noted, these ticks only contained granules. The granule infection was heavy. No developmental forms were seen. Since feeding the ticks had been kept at laboratory temperature. On June 17th the chick, which had been protected in the usual way, developed spirochætosis, and the disease ran a severe course, terminating in death.

Do the granules penetrate the mucous membrane as granules or as young spirochætes? The first is most likely, full development probably taking place in the blood or organs of the chick. This, however, is not a question easily settled, but the result of the experiment is very interesting. It will be necessary to carry out confirmatory work, but there seems little doubt that the infective granule is as infective when administered per os as it is when injected subcutaneously.

Khartoum.

A FATAL CASE OF PHLEGMONOUS INFLAMMATION OF THE DUODENUM FOLLOWING IMPACTION OF A FISH BONE.

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ACUTE phlegmonous inflammation of the gastro-intestinal tract is a condition met with very infrequently. Cases of acute phlegmonous gastritis, however, are recorded from time to time, and the subject is thoroughly dealt with in the monographs dealing with diseases of the stomach. The intestine, to judge from the cases recorded, is much less frequently the site of this particular lesion; thus, MacCallum [1] [2] in 1906 could only collect seven cases from the literature, of which five affected the small intestine exclusively. The following case, therefore, would seem worthy of publication.

A woman, aged 66 years, was admitted into the wards of the Middlesex Hospital on the evening of Feb. 9th, 1911, with a diagnosis of acute appendicitis. She had suffered from "bilious attacks" for some years. Thirty-six hours before admission she had been seized with a pain in the abdomen and had vomited repeatedly. The bowel had acted once as a result of an enema. Her pulse was 124, small and feeble, and her temperature was 101° F.; her respirations were not appreciably quickened. The abdomen moved fairly well on respiration, and the tenderness was found to be most marked in the upper part on the right side and towards the middle line at a distinctly higher level than is usually met with in cases of appendicitis, and an indefinite swelling could be felt in that region. This was particularly noticeable afterwards when the patient was anæsthetised. The diagnosis of appendicitis was put aside and that of acute pancreatitis suggested. Immediate operation was decided upon. Under anæsthesia the abdomen was opened through the right rectus and a swelling was at once met with in the region of the head of the pancreas and the duodenal loop. No free fluid was present in the peritoneal cavity and there was no evidence of diffuse peritonitis. The appendix was examined and found healthy. Attention was once more directed to the pancreas, the head of which was swollen and firm, and although no areas of fat necrosis were visible on the omentum or in the mesentery, this was not regarded as negativing the diagnosis of an acute inflammation of the pancreas. On more thoroughly exposing the organ it was found to lack the somewhat characteristic plum colour usually associated with an acute infection, but several incisions were made into it and a large drainage-tube was passed down and brought out through the abdominal wound. The curious infiltration of the duodenal wall was remarked upon at the time of the operation, but it was regarded as being secondary to the changes in the pancreas, although later events proved that the very reverse was the case. The abdominal wall was closed by through-and-through sutures of silk-worm gut. The patient returned to the ward, and was treated in the ordinary way by rectal salines and the Fowler position. Her temperature the next morning was down to 98°, but subsequently it rose to 101°, and the pulse became rapid, the abdomen more distended, and the vomiting persisted. She died some 36 hours after the operation. The urine contained albumin, but no sugar. No examination for Cammidge's crystals was made.

Post-mortem examination.—Signs of acute peritonitis were found on opening the abdomen, the various coils of intestine being adherent through the medium of a purulent exudate. The second part of the duodenum showed considerable thickening, and its peritoneal coat presented small patches of fibrinous exudate. On laying open this portion of the gut the mucous membrane was found to be separated from the underlying coats by a collection of pus, which was infiltrating the submucous layer. In places the mucous membrane was raised into projections by the submucous infiltration, and one of these elevations was of the size of a large hazel nut. The ampulla of Vater was patent and the common bile-duct showed no sign of infection. On more careful examination a fish bone was found partially buried beneath the mucous membrane with its free end projecting into the lumen of the bowel. It was an inch and a quarter in length and its point was situated in the midst of the infiltrated area about half an inch below the caruncula major. Infection had spread to the outer coat of the bowel and diffuse peritonitis had thus resulted. The stomach and the rest of the intestinal canal were natural, save for the peritonitic changes. Examination of the portal vein and its tributaries revealed no ante-mortem clotting. The head of the pancreas was slightly swollen, but the rest of the organ was normal, and there was no sign of hæmorrhage or fat necrosis. There was a fibrinous exudate over the base of the lower lobe of the right lung. The liver was pale and fatty.

Section of duodenum, showing penetration of its mucous membrane by a fish bone. Great thickening of the duodenal wall due to purulent infiltration of the submucous coat will be observed. At one spot the infiltration was so great as to lead to the formation of the nodular elevation shown, which exuded pus on incision.

Microscopic examination.—Sections of the duodenum showed that the submucosa was thickened with a purulent infiltration. The muscle coat stained badly, and was similarly infiltrated in parts. Sections of the head of the pancreas exhibited a similar infiltration and the glandular elements had undergone coagulation necrosis.

[1] Phlegmonous Enteritis, Bulletin of the Johns Hopkins Hospital, August, 1906.
[2] H. D. Rolleston: Diseases of Small Intestine, Allbutt and Rolleston's System of Medicine, vol. iii.

Bacteriological examination.—A pure culture of the bacillus coli was obtained from the wall of the duodenum and from the exudate in the pleura. No organisms grew from the portal vein or pancreas. The infection had evidently made its way through the wall of the duodenum between the time of the operation and the patient's death, for when the laparotomy was performed no sign of diffuse peritonitis was present; possibly the manipulations of the duodenum and pancreas at the operation determined this extension of the infection.

Although in our operative and post-mortem experience œdema and infiltration of the duodenal wall have not been met with in cases of acute pancreatitis, yet at the time of operation it seemed quite possible that the latter condition might have interfered with the venous return from the duodenum or that the inflammatory changes in the pancreas had spread by direct extension to the bowel; indeed, Simon and Stanley [3] record two cases of acute hæmorrhagic pancreatitis associated with intense gastro-duodenitis with cellular infiltration of the duodenal submucosa. Post-mortem examination of the present case, however, showed that the pancreatic infiltration was obviously secondary to the acute inflammation of the duodenum.

Fish bones in their passage along the digestive tract may lead to very extraordinary and calamitous results, and they may be arrested at any point from the tonsil to the anal canal. They may produce only slight abrasions in the throat, such as those for which the patient so frequently applies for relief under the impression that the offending body is still impacted, or some disastrous perforation of a large vessel may occur, producing a fatal ending. The presence of a fish bone in an ischio-rectal abscess is not a very rare event, but they have also been known to become impacted in the pharynx and to penetrate the common carotid artery, usually on the left side. They may get impacted in the œsophagus (Rivington,[4] Cripps, Cresswell Rich, Reid) and ulcerate into the aorta (Stephen Mackenzie,[5] Waters); they have produced a left-sided traumatic pneumothorax (Cayley [6]) and an abscess of the lung (Bloxam). They have penetrated the wall of the stomach, the point projecting through the diaphragm into the heart (Andrews [7]). They have been met with in the appendix,[8] and in Wettergren's [9] case of multiple liver abscess with suppurative pylephlebitis, in one of which collections of pus the fish bone was discovered, possibly the latter may have made its way *viâ* the tributaries of the portal vein into the liver from the appendix. Our colleague Dr. A. F. Voelcker has very kindly informed us of a case in which at the necropsy a fish bone was found to have perforated Meckel's diverticulum. The jejunum has been the site of fatal perforation with peritonitis (Coates [10]), and in one case a coil of jejunum was found adherent to the surface of the liver, the latter exhibiting suppurative pylephlebitis; in this case a fish bone was found projecting half an inch into the lumen of the portal vein while the other end was in the jejunum (Winge [11]).

Fish bones appear to have a remarkable predilection for blood-vessels, especially the veins. Apart from the cases mentioned above, where the portal vein was penetrated, cases where the fish bone was present in the superior mesenteric vein had been recorded by Benda, Lambron, and Koch.[12] The impaction of a fish bone in the duodenum appears to be particularly uncommon, and this statement applies to other foreign bodies as well. Somerville Hastings,[13] however, records a case of a pencil impacted just at the bend between the second and third parts of the duodenum which he successfully removed from a girl, aged 3 years, and he quotes several other cases of impaction of foreign bodies in this part of the bowel. One was operated on by Clement Lucas, where a child, aged 22 months, swallowed a French nail 2 inches long; another by Crisp English for a broken bodkin, the sharp broken end of which penetrated the second part of the duodenum. He also mentions Lihotzky's case of a spoon which perforated the duodenum two and a half years after it had been swallowed, when the relations of the viscera became altered by a pregnant uterus; and finally Chaput's case of a tooth-plate impacted in the third part of the duodenum. Possibly the shape of the bend occurring between the descending and transverse parts may determine the site of impaction.

The present case, therefore, has a two-fold interest in that, first, the duodenum is an uncommon site for the penetration of a fish bone; and, secondly, in that the condition produced by the latter—phlegmonous duodenitis—is a very rare condition whatever be its cause. In MacCallum's collected series of cases of phlegmonous enteritis many showed absolutely no sign of any breach of the mucous membrane, whereby the organism could have gained access, but inasmuch as certain of the cases have followed traumatism he suggests that the injury may have produced a point of lowered resistance into which organisms are carried by the blood stream, and he comments upon the relative freedom from bacteria of the uppermost part of the alimentary tube. In most of the cases of phlegmonous enteritis recorded streptococci have been obtained, and in one case in addition a staphylococcus albus was also found. In the present case the colon bacillus was the organism isolated in pure culture, and this suggests that the infection came from within the bowel; and the fact that the patient had had so-called "bilious attacks" before suggests that her duodenum was not sterile. The presence of the fish bone *in situ*, however, seems to prove conclusively that in this case the infection came from inside the duodenum and was not blood-borne.

[3] Quoted in Osler and Macrae's System of Medicine.
[4] Transactions of the Medico-Chirurgical Society, 1886.
[5] THE LANCET, 1871, vol. i., p. 646.
[6] Traumatic Pneumothorax from Fish Bone, THE LANCET, 1881, vol. ii., p. 828.
[7] Medical Times and Gazette, 1860, vol. i., p. 467.
[8] Kelly and Hurdon: Diseases of Appendix, p. 374.
[9] Nordiskt Mediciniskt Arkiv, 1881.
[10] THE LANCET, 1887, vol. i., p. 119.
[11] Nordiskt Mediciniskt Arkiv, 1881.
[12] Quoted in Medical Review, March, 1911.
[13] Brit. Med. Jour., Feb. 12th, 1910.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases and Specimens.—The Portals of Infection in Tuberculosis.

A PROVINCIAL meeting of this section was held at Cambridge on July 8th, Dr. E. CAUTLEY, the President, being in the chair.

Among the cases and exhibits shown were the following:—

Dr. E. J. CROSS: Cretinism in a boy aged 6 years.

Dr. J. A. WRIGHT: (1) Cretinism in a boy aged 15 years. (2) Congenital Heart Disease and Cerebral Hemiplegia in a boy, aged 7 years, who since infancy had been subject to fits. When 18 months old the left leg was noticed to be weak, and it was now smaller than the right. Both knee-jerks were exaggerated. At the base of the heart was a loud systolic murmur suggestive of pulmonary stenosis. (3) Cerebellar Ataxia in a girl, aged 14 years, whose mental condition and power of speech were impaired. She walked with a reeling gait and the knee-jerks were absent. There was also some incoördination of the hands. The symptoms began somewhat suddenly when the patient was 4½ years old. (4) Functional Ataxia in a girl aged 5 years. (5) Heart showing Congenital Malformations. (6) Bones from a case of Infantile Scurvy.

Mr. W. H. BOWEN: (1) Congenital Nævoid Condition of the Left Thigh in a boy aged 12 years (the leg was larger than the right, but gave rise to no discomfort); (2) Chart of a case of Glandular Fever; and (3) Parenchymatous Goitre in a girl aged 16 years.

Dr. L. HUMPHRY: Post-diphtheritic Paralysis in a boy with Unusual Signs.

Dr. E. LL. JONES: Congenital Heart Disease: ? Patent Ductus Arteriosus.

Dr. G. S. HAYNES: (1) Congenital Heart Disease: Pulmonary Stenosis; (2) Tuberculous Disease of the Spine; (3) Mutism; (4) Microcephalic Idiocy; (5) Infantile Paralysis; and (6) Skull of a Mongolian Idiot.

Dr. A. H. MILLER: Chronic Encephalitis (?) in a child aged 7 years.

Dr. J. C. W. GRAHAM: (1) Hydrocephalus and Buphthalmos in a boy aged 3 years; (2) Congenital Cataract in a girl aged 9 years; and (3) Hypermetropic Astigmatism with Macular Changes in a girl aged 8 years.

Dr. C. A. BASKER: Family Cord Disease (spino-cerebellar type) in a boy.

Dr. C. SEARLE: Infantile Spastic Paraplegia in a boy, aged 2 years and 7 months. There was a history of the father having had when a child a sudden attack of paralysis of the right arm, left leg, and right side of the face, with difficulty in swallowing and phonation, which cleared up in 15 months except in the face. One brother had progressive upper neuron degeneration, the effect of (?) an injury, and died totally paralysed, aged 2½ years. The patient, who could not talk, presented a typical spastic paraplegia. The symptoms came on suddenly with a fit when he was 8 months old, and since then he had had frequent attacks of rgidiity with difficulty in swallowing and a high temperature.

Dr. H. B. RODERICK: A series of 27 Pathological Specimens illustrating various bone lesions, symmetrical gangrene of the feet, tuberculous epididymitis, hypertrophic stenosis of the pylorus, sarcomata of the intestines and kidneys, foreign bodies in the glottis, sloughing tonsil involving the internal carotid, and ulceration of the internal jugular vein.

Dr. T. R. C. WHIPHAM: Heart with an infective clot blocking the pulmonary orifice which gave rise to a continuous murmur and was diagnosed as patent ductus arteriosus.

Dr. L. COBBETT: A series of Pathological Specimens from Man and Animals to illustrate his paper on the Portals of Infection in Tuberculosis.

The cases were discussed by the PRESIDENT, Dr. G. PERNET, Dr. T. H. KELLOCK, Dr. L. GUTHRIE, and Dr. H. D. ROLLESTON.

Dr. COBBETT read a paper on the Portals of Infection in Tuberculosis. After giving a historical survey of the subject Dr. Cobbett proceeded to criticise some of the experiments of certain investigators who tried to show that infection took place through the alimentary tract. The forcible feeding of an animal was not easy and often resulted in regurgitation of food, which allowed the infection to be inhaled. The speaker's conclusions, based upon numerous experiments, were to the effect that infection occurred chiefly by inhalation.—A lengthy discussion ensued, in which the PRESIDENT, Mr. C. LUCAS, Mr. R. H. A. WHITELOCKE, Dr. ROLLESTON, Dr. WHIPHAM, and Dr. M. FLETCHER took part.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on July 13th, Dr. Phineas S. Abraham, the President, being in the chair.—Dr. David Walsh showed a case of Cicatricial Alopecia in a girl, in which a diphtheroid bacillus had been isolated from the lesions.—Dr. W. Knowsley Sibley showed: 1. A case of Lupus Erythematosus in a young man which had commenced at the age of 12. 2. A little girl with Alopecia following impetigo capitis, in which the lesion was primarily that of kerion. 3. A man, aged 30, with a Sycosiform Syphilide. The lesions were grouped upon the face and neck and had been present for six weeks. The condition was said to have appeared after a shave.—Dr. W. Griffith showed: 1. A case of Urticaria Pigmentosa of the macular type in a boy aged 4½. The lesions were universally distributed over the body and had appeared at the age of three weeks. 3. A young Russian with Cicatricial Alopecia, probably the result of an old favus.—Dr. J. D. P. McLatchie showed: 1. A case of Acne Necrotica in a man aged 42 2. A little child, aged 1½, with Tubercular Nodules upon the Buttock and Thigh.—Dr. Tom Robinson showed a case of severe Alopecia Areata in a man aged 44. A discussion ensued relative to the etiology of this affection.—Dr. G. Norman Meachen showed: 1. A case of Acne Varioliformis in a man, aged 36, who had suffered from grouped comedones of the scalp when a child. 2. A young married woman with Ulerythema of the Face following slight traumatism. 3. A widow, aged 49, with a peculiar form of Eczematous Dermatitis affecting the face and extensor surfaces of the hands and forearms that had been aggravated by exposure to sunlight.

FIRST PROFESSOR OF EUGENICS.—Professor Karl Pearson has been appointed to the chair of Eugenics, which has been established at the University of London under the legacy bequeathed for that purpose by the late Sir Francis Galton.

Reviews and Notices of Books.

Unsoundness of Mind. By T. S. CLOUSTON, M.D. Edin. London: Methuen and Co. 1911. Pp. 360. Price 7*s.* 6*d.* net.

IN this work the author's intention has been to lay before the "intelligent layman" a presentation of the state of psychiatry as it now is and of the problems with which it is confronted. Dr. Clouston feels that, though the subject does not readily lend itself to popular treatment, the ignorance of mental disorders and defects is such that the need for general enlightenment is very great. The title "Unsoundness of Mind" is used to cover all known mental disorders of whatever sort and from whatever cause, and the author hopes that the intelligent public may be led to take a larger and more humane view of mental disease, that rational efforts at prevention may be made, and that early symptoms may be sooner recognised and therefore the sooner treated. We sincerely hope that Dr. Clouston may find his laudable hopes at least in part fulfilled, and we find it difficult to suppose that it would be possible to present the case with greater simplicity and perspicacity. We hope also that the book will reach the right persons among the "intelligent public." Our own painful experience is that works written for the general public fall, for the most part, into the hands of persons who, though intelligent, are unbalanced; and who use such information as they may glean, often curiously distorted, for the purpose of bolstering up some freak social theory, or to find a tag wherewith to label their own supposititious symptoms, or upon which to found a system of inappropriate treatment. Over and over again practitioners discover whole trains of symptoms based upon the perusal of some work that was intended to make plain to the populace the obscurer paths of medicine; and, indeed, in some cases have been able to tell the patient what he has been reading. There must, for instance, be few of the profession who have not suffered from the popularisation of the "uric acid diathesis," though from it we are at least having a rest during the exploitation of the lactic acid bacillus. If, however, the self-diagnosis and self-treatment of mental disorder of the less-important and less-marked forms are to become at all prevalent, we must brace ourselves for no common ordeals.

The author is very emphatic on the subject of heredity in mental disease, and agrees with Dr. C. A. Mercier and the majority of psychiatrists that it is upon inheritance that depends the stability or instability of the individual's highest nervous arrangements. If this indeed be so, there is little doubt but that the truth should be preached as emphatically in the consulting-room as it is in public, and that it is the duty of the physician to be less weak-kneed than he often allows himself to be. No advice is more likely to be disregarded than advice not to marry, where love or interest urges marriage, but at any rate the good seed is sown when the physician declines to say that there is no danger, or but little danger, when two neurotic stocks come together. It is curious to note how divergent are the views of neurologists and psychiatrists upon the subject of mental disease. We observe that Dr. Clouston tends to throw cold water upon mental worry or stress being the cause of mental disorder, and regards the worry as often being but an initial symptom of the disorder. On the other hand, among neurologists who have to do with the psycho-neuroses the mental causation of those affections appears to be more and more laid stress upon. Whether it is that the psychoses have an essentially different causation to the psycho-neuroses to which they have such an extraordinary

clinical resemblance, differing really in degree rather than in other characteristics, or whether it is that the divorce in practice of neurology from psychiatry colours the views of observers, it is most difficult to determine; but it is probably at least agreed that in the early stages, when symptoms are mild and when it is difficult to determine whether a patient is displaying a psychosis or is merely suffering from a psychoneurosis, it is desirable that disturbing mental factors should be sought for and, if possible, removed. The author enunciates the wisest of advice with respect to preliminary and early symptoms of mental disorder, and it would be indeed of service if this part of the work, at any rate, could be placed in the hands of potential sufferers. Another chapter, that on the training of character, is admirable, and for ourselves we feel that, however the controversy between those who urge mental factors as against those who urge somatic factors as being the most prominent in the etiology of mental disorder may eventuate, a basis of good education and the evolution in the individual of character in the best sense of the word constitute the most perfect prophylaxis at present known.

Contribution à l'Étude de la Physiologie Normale et Pathologique du Péritoine, ainsi qu'à l'Étude du Traitement Rationnel de son Inflammation Aiguë ou Chronique. Par le Dr. MARC ROUSSIEL. Annales de la Société Royale des Sciences Médicales et Naturelles de Bruxelles. Tome XIX., Fasc. 2, 3, et 4. Bruxelles: Henri Lamertin. 1910. Pp. 490.

THE peritoneum is an intensely interesting membrane, though few will have time to read about 500 pages to get at the facts and opinions of the author. But this memoir represents work carried out over four years. It is divided into seven chapters, Chapters I. to V. being devoted to the physiological and pathological aspects of the question and the last two to its purely clinical and practical aspects; and all lead up to the author's method of treating inflammations of the peritoneum from any cause by means of a current of oxygen perfused or percolated through the abdominal cavity after laparotomy has been performed for any reason. The author in the last chapter gives a series of cases of acute general and localised peritonitis treated by this method, with careful details to be observed before the operation, the means of preventing shock, the operative procedure, the introduction of oxygen, and the post-operative procedures, especially as regards the position of the patient. The cases include such as the following: general peritonitis resulting from rupture of the gall-bladder, inguinal hernia, ovarian cysts, and pyosalpinx. The author claims that the introduction of oxygen into the abdominal cavity increases the number of leucocytes in the exudation into the peritoneum, and retards the absorption of fluids introduced into that cavity as well as the absorption of septic effusions. It also stimulates the phagocytic properties of the leucocytes towards bacteria, increases general leucocytosis, helps the heart's contractions, and favours peristalsis and the regeneration of the endothelial cells.

The part played by the omentum in such physiological processes is probably large. The omentum is very varied in its appearance in different animals in the embryonic and adult stages of life. In some animals it is nearly a complete membrane, while in others it is fenestrated and prone to become a point of election for the deposition of fat as well as the seat of very characteristic pathological changes. When carmine or soot or other inert particles are introduced into the abdominal cavity they do not remain disseminated generally in the cavity. On the contrary, in a few hours most of them will be found in the omentum, so that if carmine be used it is red, if soot it is black; hence it has been called the "sweeper up," or "balayeur," and hanging as it does it is admirably placed for this purpose. It also absorbs microbes, some of which remain in the membrane, and some are carried and deposited in the retro-sternal lymphatic glands and near the pylorus, but they do not appear to go direct to the liver, as was suggested by F. Heger. It is, therefore, a great protective organ against the invasion of micro-organisms. As absorption is most active in relation to the diaphragm and the omentum, an injected patient should be so placed that the fluids will gravitate downwards. Dr. Roussiel gives elaborate blood counts of the effects of the introduction of oxygen, air, carbon dioxide, or nitrogen into the abdominal cavity. He also describes the effects produced by artificial inflammation, set up by injecting aleurone grains into this cavity in animals. There are several excellent colour plates of leucocytosis.

This is a distinctly interesting contribution to the physiology, pathology, and therapeutics of the peritoneum and the omentum. It should be read by abdominal surgeons as well as by gynæcologists.

Alcoholic Fermentation. By ARTHUR HARDEN, Ph.D., D.Sc., F.R.S., Head of the Biochemical Department, Lister Institute, Chelsea. London: Longmans, Green, and Co. 1911. Pp. 128. Price 4*s.* net.

IT would be hard to find any scientific worker better qualified to deal with the vast subject of alcoholic fermentation than the author of this volume, the chapters in which are based on an admirable series of lectures delivered by him at the London University and the Royal Institution during 1909 and 1910. His own stimulus to some very fruitful work in this direction came from Buchner's great discovery, the preparation from yeast of a liquid which, in the complete absence of yeast cells, was capable of resolving sugar into carbon dioxide and alcohol. This discovery of zymase, which name Buchner decided to give to the active liquid, introduced, as the author points out, a new experimental method by means of which the problem of alcoholic fermentation can be attacked; and the result has been that since 1897, when the discovery was made, a considerable amount of information has been gained with regard to the nature and conditions of action of the enzymes of the yeast cell. It was soon found that fermentation was not the simple matter that might have been expected from such a simple way of separating its initiator. To begin with, zymase, though essential for fermentation, cannot of itself bring about the alcoholic fermentation of sugar, but is dependent, as Dr. Harden explains, on the presence of a second substance termed, for want of a more reasonable name, the co-enzyme. "The chemical nature and function of this mysterious coadjutor are still unknown, but as it withstands the temperature of boiling water and is dialysable it is probably more simple in constitution than the enzyme. This, however, is not all; for the decomposition of sugar a phosphate is also indispensable. It appears that in yeast juice, and therefore also most probably in the yeast cell, the phosphorus present takes an active part in fermentation and goes through a remarkable cycle of changes. The breakdown of sugar into alcohol and carbon dioxide is accompanied by the formation of a complex hexosephosphate, and the phosphate is split off from this compound and thus again rendered available for action by means of a special enzyme termed hexosephosphatase. In addition to this complex of ferments, the cell also possesses special enzymes, and the co-enzyme can be destroyed, and further, at least one substance, known as an anti-enzyme, which directly checks this destructive action." Such, in the author's words, may be taken to be the summary of the present position—a position which has been reached largely by his well-known contributions to the

subject which have been published in the *Journal of the Chemical Society* and other scientific publications.

The book is a most interesting and instructive review of the attempts, ancient and modern, which have been made to unfold the secrets of the great alcoholic fermentation processes.

Précis d'Obstétrique Opératoire. By Professor DE SEIGNEUX, Professor in the Faculty of Medicine in the University of Geneva. Deuxième Partie. Geneva: Librairie Kündig. 1911. Price 5 fr. alone; three volumes, 15 fr.; or in one volume, 17 fr.

IN the third volume of his work, the first two volumes of which were reviewed in THE LANCET of May 13th, Professor de Seigneux considers the methods of extracting breech presentations, version, embryotomy, posterior parietal presentations, prolapse of the cord, brow and face presentations, placenta prævia, rupture of the uterus, contracted pelves, and asphyxia neonatorum. This volume has all the merits of the first two, and the illustrations are particularly good and very numerous. We may call attention particularly to the series illustrating the operation of version. We are surprised, however, to note that the author apparently does not describe external cephalic version in breech presentations—a mode of treatment of great value in such cases. In describing the operation of decapitation he rightly calls attention to the deficiencies of Braun's blunt hook, but recommends in its place the complicated and equally unsatisfactory embryotomes of Ribemont, Dessaignes, and Bond. In the chapter on rupture of the uterus no attempt is made to discuss the treatment, but the practitioner is recommended to transfer the patient as speedily as possible to the nearest hospital—no doubt excellent advice, but which it might be impossible to carry out in many circumstances and for obvious reasons. In a case in which the practitioner is compelled to act on his own responsibility he would obtain no assistance from consulting this book, and this seems to us to be a serious omission.

The statement of the author that the induction of premature labour is attended with a maternal mortality of 1–1·4 per cent. and a fœtal mortality of 37·3 per cent. hardly represents the entire truth. It must be borne in mind that many of the deaths in the cases collected by von Sarwey, from which these figures are quoted, included such conditions as eclampsia, acute anæmia, kidney disease, rupture of the uterus, heart disease, and phthisis, and in reality all these deaths ought to be deducted in an attempt to arrive at the true mortality of the induction of premature labour. The point is, however, a small one, but it serves to show the caution with which figures should be regarded. With the principle which the author is supporting in this chapter all will agree—namely, that "the medical man who engages to attend a patient in her confinement is morally bound to preserve her from danger by all the means which the obstetrical art places at his disposal."

The second part of this book should prove as useful as the first and the whole work is a good example of its kind.

Hautkrankheiten Sexuellen Ursprungs bei Frauen (Skin Diseases of Sexual Origin in Women). By Dr. OSKAR SCHEUER. Berlin and Vienna: Urban and Schwarzenberg. 1911. Pp. 204. Price, paper, M.8; bound, M.10.

WHILE it is an undoubted fact, as Dr. Oskar Scheuer points out in his preface to this book, that large numbers of skin diseases owe their origin to purely local conditions, yet there are many others dependent upon pathological changes in certain of the internal organs. The advances that have been made of late years in our knowledge of the action of the various internal secretions have enlarged our conception of many of the problems concerned with the causation of certain skin diseases. The close relationship between dermatology and general medicine is, of course, well known, and the best skin specialist is he who has first studied and practised general medicine.

In this book the author attempts to show the relationship between certain conditions of the sexual organs in the female and certain skin diseases. That such a relationship exists he is certain, and every gynæcologist could quote cases in which such a condition appeared to exist. Of necessity hypothesis must play a large part in any attempt to explain the connexion between affections of the genital organs and skin diseases. In spite, or because, much here is still very problematical, the subject is one of great interest. The author discusses seriatim, after a preliminary consideration of some historical points and general principles, the relation of puberty, chlorosis, menstruation, disease of the sexual organs, and pregnancy to, and their possible effect upon, certain skin diseases. Chapters are also devoted to a consideration of the possible connexion of labour, the puerperium, and the climacteric with the same skin affections. When we consider the profound changes, both in the body as a whole and more particularly in the nervous system, that are associated with such epochs of a woman's life as puberty and the menopause, it is not surprising to find that the skin may undergo changes in common with many other parts of the body. The development of the body hair at puberty, the pigmentary changes in association with pregnancy, the flushing of the vessels of the skin with blood so frequently an accompaniment of the menopause, all tend to show the intimate connexion between the genital organs and the skin at these periods of life. As Dr. Scheuer maintains, in many cases the development of certain dermatoses is to be explained, not by any direct action of the internal secretions upon the skin, but by an increased vulnerability of that portion of the body produced by the action of these secretions.

The whole question is one of considerable interest, and both to the dermatologist and to the gynæcologist this book will prove interesting and instructive.

Chaleur Animale et Bioénergétique. Par JULES LEFÈVRE, Agrégé de l'Université, Lauréat de l'Institut et de la Société de Biologie. Préface de M. A. DASTRE. Avec 211 figures dans le texte. Paris: Masson et Cie. 1911. Pp. 1107. Price 25 francs.

THOSE readers who are conversant with the *Journal de Physiologie* in its later years know full well the many excellent memoirs which the author of this *opus magnum* has published on the subject of animal heat, a subject often but imperfectly dealt with in courses both of physiology and of pathology. We cannot wonder, therefore, when we have before us what undoubtedly is one of the best, most comprehensive and original books on this subject in any language, if we find the erudite professor of physiology in the Sorbonne in Paris, Professor Dastre, not only giving it his blessing but saluting its advent as a work than which no better has appeared in biological literature during the last 20 years. It should be in the hands of every physiologist and pathologist as well as in those of the physicist, and be a *vade-mecum* for all three. The hygienist, as well as the medical man, will find much to enlighten and interest him therein. It is impossible to give an adequate idea of the complexity and far-reaching relations of this subject, but perhaps it may help if we give the barest outline of its chief contents.

In an introduction of a few pages the author deals with the ideas held on this subject before Lavoisier, with the work of Lavoisier, of Dulong and of Despretz, of Regnault and Reiset, and with the material balance or metabolism

according to Boussingault, and gives a criticism of them all. The work itself is divided into four books. In Book I. Physiological Calorimetry, Direct and Indirect, is dealt with. The whole thermo-chemistry of foods is considered in all its relations, respiratory exchanges, and the application of calorimeter and other methods for the determination of the gain, loss, and transformation of bodily energy, the work of Atwater being given very fully (pp. 21–228). Book II. treats of Thermo-regulation, or Thermotaxis and Thermogenesis, with an introductory chapter on heat as an excitant in relation to living beings and its action on living beings, and then on the human organism as a whole. Next, the topography of temperature, homoio-thermal and poikilo-thermal animals, oscillations of temperature, normal and pathological, and the means of regulating the temperature by mechanisms more or less complete and varied are considered (pp. 229–610). Book III. deals with what the author calls "Études de Bioénergétique"—i.e., energy in all its relations to living matter. There are many chapters on thermo-chemistry, thermo-dynamics, and muscular activities and fatigue (pp. 611–804). In Book IV. the subject is continued and considered in its application to general physiology, dealing especially with the energy value of foods, the extent to which they are utilised in the intestine, the equivalent energy value of different kinds of food, and the whole question of dietaries and the "reserves" of the body (pp. 805–1037). There is a full and ample index.

We have said enough to show the magnitude and high scientific character of this treatise, which carries forward in such a comprehensive, exact, and characteristic manner the last traditions and knowledge of a subject whose exact foundations were laid by Lavoisier, so much so, indeed, that this subject has been claimed as essentially a French science. We give the work a warm and hearty welcome.

LIBRARY TABLE.

Handbook of Medical Treatment, a Guide to Therapeutics for Students and Practitioners, with an Appendix on Diet. By JAMES BURNET, M.A., M.D. Edin., M.R.C.P. Edin., Lecturer on Practical Materia Medica and Pharmacy; Physician to the Marshall Street Provident Dispensary, Edinburgh. Edinburgh: John Currie. 1911. Pp. 168. Price 3*s.* 6*d.*—The author of this work in his preface states that the present manual "is an unambitious attempt to supply the main facts of medical treatment within the compass of a small volume convenient to handle and to carry about." The diseases are placed in alphabetical order, and the directions for treatment are given very briefly. So far as these directions go, they are accurate and well expressed, but they are too brief to be of any true value. The success of treatment lies in studying each patient individually, and not in giving the same drugs in every case of any particular disease. In the volume now before us this principle is not sufficiently emphasised, and if the directions therein given are always followed, mere empiricism and not rational therapeutics would be the result. For rapid reference as to hints for treatment this book may be useful, but as a "handbook" of medical treatment we cannot comment favourably on it.

Deutsche Heil- und Pflegeanstalten für Psychischkranke in Wort und Bild. Redigiert von Dr. JOHANNES BRESLER. Halle a.S.: Carl Marhold Verlagsbuchhandlung. 1910. Pp. 666. Price M.28.—This work constitutes a guide book on a very large scale to the various institutions for the mentally disordered in the German Empire. It is well and profusely illustrated and contains many ground-plans of the various buildings described, so that a reader gets a very good idea of the character of the institutions. Perhaps the most striking feature is the development of the villa system, so that many of the hospitals resemble garden cities and are considerably less barrack- or prison-like than are similar places in our own country. In many institutions patients are divided into classes according to the disease with which they are afflicted, and it is satisfactory to note that the treatment of acute mania by rest in bed is widely practised. The book would be very useful to anyone whose duty it became to take part in the building of a new asylum.

The Essentials of Materia Medica and Therapeutics for Nurses. By JOHN FOOTE, M.D., Assistant Professor of Therapeutics and Materia Medica, Georgetown University School of Medicine, &c. London and Philadelphia: J. B. Lippincott Co. 1910. Pp. 194. Price 4*s.* 6*d.* net.—This book limits the number of important remedies to be studied, briefly noticing other frequently used drugs and preparations in an appendix. The classification according to chemical and botanical groups is avoided as needless for those for whom the book is intended, and the drugs are grouped at once under their therapeutic properties and uses. The book contains six chapters relating to definitions, weights, and dosage; how medicines act, important drugs and medicines, hypodermic and rectal medication, a reference list of commonly used drugs, chemicals, and proprietary medicines, and therapeutic definitions and abbreviations. It seems on the whole to contain a good deal of useful information and not to be overloaded with unnecessary detail. It is, however, in parts loosely written. We should like to know when the plurals of *infusum* and either *emulsum* or *emulsio* became *infusæ* and *emulsæ* (p. 11). On p. 47 we are told that "when a solution of a soluble iron salt, such as the chloride, is added to albumin, it precipitates the latter, forming a compound known as an albuminate. Mercury compounds destroy and corrode albumin; iron, however, simply makes albumin insoluble and has no corrosive action." If this sentence does not imply that mercury salts do not form an albuminate we are at a loss to know what it does mean; yet the author himself, on the next page but one, states: "Mercury salts combine rapidly with albumin, destroying it and forming an albuminate which is quickly absorbed."

The Birds of the British Islands. By CHARLES STONHAM, C.M.G., F.Z.S. With illustrations by LILIAN M. MEDLAND. London: Grant Richards, Limited. Part XVIII. Price 7*s.* 6*d.* net.—Mr. Stonham's admirable work is nearing conclusion. The eighteenth part has now made its appearance and only two more sections remain for publication. The eighteenth contains descriptions and pictures of the kittiwake, the razor-bill, the guillemot, the little auk, and the skuas, whose name is said by some to be an onomatopœic reproduction of its cry, but by Professor Skeat to have reference to the Icelandic name for its grey colour. The skuas are very interesting birds. The qualities of the great skua Megalestris cattarrharctes (Linnæus) are summed up in its happy name, which signifies "great pirate rushing down." For these birds, and for that matter others of their kind, live by raids upon gulls and terns, whom they shadow and swoop down upon, forcing them to disgorge the fish which they have just swallowed. The great skua only breeds in Unst and Foula in the British Islands, though the bird is occasionally driven further inland by tempestuous weather. It is extremely brave both against man and dog when defending its young. Another skua, the pomatorhine skua, which is more abundant in the British Islands and more widely distributed, is called stercorarius, the old idea being that the food which it obtained by chasing gulls and terns was voided from the bowel of the victims and not from the gullet. The whole family are very interesting, appearing to be innate criminals, who prefer to secure sustenance by robbery, although there is no apparent reason why they

should not obtain their food by honest effort. Miss Medland's pictures are very good in this part.

The Student's Handbook of Surgical Operations. By Sir FREDERICK TREVES, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Eng., Serjeant-Surgeon to H. M. the King, Consulting Surgeon to the London Hospital; and JONATHAN HUTCHINSON, F.R.C.S. Eng., Surgeon to, and Lecturer on Surgery at, the London Hospital. Third edition, revised throughout. With 162 illustrations. London, New York, Toronto, and Melbourne: Cassell and Company, Limited. 1911. Pp. 512. Price 7*s.* 6*d.*—The progress of surgery makes it compulsory that any work on this subject for students should be frequently revised, for old operations drop out of use and new operations appear, and it is essential that only those methods which are current should be described. This useful manual has been subjected to thorough revision by Mr. Jonathan Hutchinson, and it may be taken to represent very closely present practice. For instance, lumbar colotomy and lateral lithotomy are no longer described in this volume, for these operations are never now performed. We are glad to see that severe efforts have been made to keep down the size of the volume, for it is essential that works for students should not be too large. In this book the student will find all the knowledge on operative surgery which he will require for the ordinary examinations. We can commend it with confidence.

On Writing Theses for M.B. and M.D. Degrees. By H. D. ROLLESTON, M.D. Cantab., F.R.C.P. Lond. London: John Bale, Sons, and Danielsson, Limited. 1911. Pp. 27. Price 1*s.* net. —The substance of this little book first appeared, as we learn from the preface, in the pages of the *St. George's Hospital Gazette*. Dr. Rolleston, as senior physician to St. George's Hospital, in which capacity he is constantly being asked for advice as to writing theses, and as one who has himself been through the mill of composing theses for his baccalaureate and doctorate, writes with both authority and knowledge. His advice may be commended, not alone to those who write theses fo an academic distinction, but also to those who write papers for the medical press. Besides the purely practical advice contained in the book, Dr. Rolleston gives some interesting historical facts as to theses and their maintenance. Disputation and maintenance are still carried out in theory, but except occasionally in a Faculty of Medicine there is but little original work displayed in a thesis. A shadowy remnant of disputations still survives at Oxford in the rule that a candidate for the degree of B.D. shall read two theses on some theological subject approved by the Regius professor, a custom which gave rise to Mansel's witty if bitter epigram,

> "The degree of B.D. it's proposed to convey
> To an A double S by a double essay."

But theses have to be written also for degrees in medicine, and Dr. Rolleston's advice will certainly be found most helpful to those who have to write them.

Famous Castles and Palaces of Italy. By EDMUND B. D'AUVERGNE. Illustrated in colour from paintings. London: T. Werner Laurie. 1911. Pp. 320. Price 15*s.* net.—The author of this book has opened up, we believe, new ground, for, often as the cathedrals, the churches, the monasteries, and the art galleries of Italy have been described, the castles have so far escaped any systematic notice. This is possibly because the castles of Italy do not form, as, for example, did the numerous castles of the Anglo-Welsh border, one systematic scheme of offence and defence. The Italian castles are fortuitously situated, they were not necessarily fortresses but often the seats of reigning families, and the historical events with which they are connected have to do with the strife of separate ducal clans and not with the struggles of a king against his people. The detailed history of some of them in consequence is hard to come by, but others, like the castle of Sant' Angelo at Rome, are associated with historic events of real importance. Lurid stories of crime and wrong, and the terrific episodes arising out of the struggle between the mediæval republics of Italy and their rulers, and between their rulers and Emperor or Pope, are largely buried in the archives of extinct States, and Mr. D'Auvergne is to be thanked for the industry with which he has unearthed some of these interesting details, and the skill with which he has woven them into a homogeneous volume. The beautiful illustrations, seven of which are in colour-reproductions from paintings by Mr. C. E. Dawson, give faithfully the appearances of such well-known buildings as the Castle of Sant' Angelo, the Castle of Ferrara—scene of the loves of Parisina and Ugo—and the Bargello at Florence, now the National Museum, and containing a splendid collection illustrative of Italian mediæval art.

Meat and Food Inspectors' Examinations: Model Answers to Questions Set by the Royal Sanitary Institute and Other Examining Bodies. Compiled by G. T. BILLING, Meat Inspector, Metropolitan Borough of Finsbury; and A. H. WALKER, Sanitary Inspector, Metropolitan Borough of St. Pancras. London: Sanitary Publishing Co., Limited. 1911. Pp. 156. Price 3*s.* 6*d.* net.—This book contains a collection of questions actually set at the examinations for meat and food inspectors, which should be of use not only to candidates for that examination, but also for intending candidates for the examinations of the Sanitary Inspectors' Examination Board, the Royal Sanitary Institute, and the Board of Education examination in hygiene. The questions, which are grouped under such headings as slaughtering, cowsheds, signs of disease and health in living animals, general diseases of animals, fowls, and fish, appearances of flesh and fat in various animals, organs in health and disease, carcasses, butchers' joints, parasitic and bacterial diseases, and preservation and storage of food, are supplied with "model" answers. On reading aloud the questions and answers, they give the very practical effect of listening to a *viva voce* examination. Besides flesh food, butter, milk, cheese, eggs, coffee and tea, flour, lime-juice, beer and porter, potatoes, and canned foods are dealt with. There are also questions on the legal powers and limitations of inspectors. The answers are direct, clearly expressed, and to the point, as all examination answers should be, and, so far as we have tested them, they appear to be accurate, affording a very good survey of the subjects dealt with. The regulations for the examination and the syllabus of subjects are prefixed.

JOURNALS.

The Medical Chronicle.—In the June number of this magazine Dr. W. B. Warrington discusses the subject of injury as an etiological factor in the causation of some well-defined nervous diseases, such as tabes dorsalis and disseminated sclerosis, and also tabulates the diagnostic points distinguishing some of these affections. Dr. G. E. Loveday writes on the laboratory diagnosis of syphilis, dealing with Wassermann's reaction and the different modifications introduced into the technique of the test, and also with some other reactions, such as the meiostagmine test, Porges' reaction, and so forth.

Bristol Medico-Chirurgical Journal.—In the June issue Mr. Ernest W. Hey Groves writes on resection of the posterior spinal roots, which he holds to be free from

much danger and to be useful for the control of visceral crises in tabes dorsalis and also a means of relieving spasm in diseases of the pyramidal tracts. We refer our readers to the papers on the subject recently published in THE LANCET. Dr. William Cotton describes, with diagrams, an elementary radiographic camera; Dr. Bertram M. H. Rogers discusses the medical aspect of Boswell's "Life of Johnson" and gives some account of the medical men therein mentioned; and Dr. J. O. Symes contributes some observations on school hygiene. Dr. R. Shingleton Smith gives a personal experience of furunculosis, in which he found Bier's cupping both painful and useless, while the application of strong solution of iodine was most efficacious. Dr. C. E. K. Herapath writes on auricular fibrillation, and gives tracings of some curves obtained with Mackenzie's polygraph; and notes of four cases of cervical cysts probably branchial in origin are given by Mr. Charles A. Morton. Dr. Edward Cecil Williams describes a case of ataxia in a child aged 3½ years.

Edinburgh Medical Journal.—A letter from Dr. Horatio R. Storer giving some reminiscences of the great J. Y. Simpson is published in the July issue of this journal. Dr. George A. Pirie and Dr. Edmund F. T. Price each contribute papers on X ray diagnosis of renal calculi, and Dr. F. Parkes Weber sends a brief note on muscular exercise in relation to heart strain and to neuroses. Mr. J. S. Fraser deals with removal of the faucial tonsils by enucleation, and Mr. Arthur Mitchell considers the operative treatment of varicose veins; while Dr. G. L. Kerr Pringle discusses the classification of some forms of arthritis, especially rheumatoid arthritis and osteo-arthritis.

Dublin Journal of Medical Science.—In the July number Dr. J. B. Story deals with the National Insurance Bill as it affects Ireland. He believes that it will tend to depress wages. A first instalment of Dr. Ernest Hastings Tweedy's annual report of the work at the Rotunda Hospital is also here published. Dr. Douglas Macleod Moffatt writes on medical inspection of schools and the disorders most commonly encountered in such examination; and Dr. J. Singleton Darling and Miss C. Florence Williamson discuss some points in the administration of anæsthetics, speaking favourably of the use of hyoscine and morphine as a prelude to a general anæsthetic and also of the administration of ether by the open method.

The American Journal of Gastro-Enterology. No. 1. June, 1911.—This is the first issue of a new journal devoted to subjects pertaining to digestion, which is published quarterly at 6s. per annum, under the auspices of the American Hospital for Diseases of the Stomach, Philadelphia. The editor is Dr. Lewis Brinton and among his associates and collaborators are several well-known American physicians and surgeons. The contents of this number are—the Surgical Treatment of Gastroptosia, by Dr. H. A. Beyea; Duodenal Ulcer, by Dr. Lewis Brinton; the Importance of the Colloidal Nitrogen in the Urine in the Diagnosis of Cancer, by Dr. M. Einhorn, Dr. M. Kahn, and Dr. J. Rosenbloom; Migraine, with special reference to Disturbance of the Gastric Function an Exciting Cause, with report of 47 cases, by Dr. Robert R. Rhein. Pages 22 to 48 are occupied by abstracts of literature on related subjects. Glancing over the titles of the original articles, all seem subjects that, if adequately treated, deserve a place in a general medical journal; if inadequately, they deserve no place in any journal. We are hardly convinced of the necessity for multiplying special journals in such limited departments of applied medicine.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) EPININE AND COCAINE HYDROCHLORIDE; AND (2) "TABLOID" XAXA AND CAFFEINE.

(MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

(1) Epinine is a remarkable example of the triumph of synthesis; it is the synthetic vaso-constrictor and hæmostatic which acts in the same way as the suprarenal active principle. The advantages of the synthetic preparation are an ensured purity and stability. The combination of epinine and cocaine hydrochloride is obviously useful for local anæsthesia and particularly in dental practice. (2) In tabloid xaxa and caffeine the specific antipyretic and analgesic action of xaxa or acetyl salicylic acid is combined with the stimulating effect of caffeine on the circulation. Its use is therefore indicated in cases of pyrexia in which there is weakness of the heart's action.

X RAY PROOF CLOTH.

(W. S. ROTHBAND AND CO., PREMIER RUBBER WORKS, BENT-STREET, CHEETHAM, MANCHESTER.)

This is a somewhat heavy rubber sheeting which, on analysis, proves to contain metallic lead. The sheet is intended for stopping the action of injurious x rays. On testing the sheet with x rays it proved to be amply effective for all practical purposes. It absorbs, at all events, all rays likely to be prejudicial in x ray operations, and at least 85 per cent. of the total output of an x ray tube of an average degree of vacuum.

LIQUEUR ADVOCAAT.

(WARNINK, AMSTERDAM. LONDON AGENCY, THE VICTORIA WINE COMPANY, 12 TO 20, OSBORN-STREET, LONDON, E.)

This preparation may be regarded as an elegant improvement on the mistura spiritus vini gallici of the British Pharmacopœia, which is an ordinary emulsion of brandy, egg yelk, and sugar to which is added cinnamon water as an aromatic. The advocaat liqueur is the best preparation of its kind we have examined. It is not only a perfect emulsion but a permanent one, its condition remaining unchanged indefinitely, a distinct merit as many emulsions tend to separate. We understand that the egg yelk used is derived under the most favourable circumstances from poultry kept specially for the purpose. Our analysis of advocaat liqueur was as follows: alcohol by volume, 22·82 per cent.; total solid constituents, 45·16 per cent.; and egg fat, in yelk, 7·74 per cent.; coagulable albumin, 5·04 per cent.; mineral matter, 0·19 per cent.; and sugar, 29·05 per cent. The alcoholic strength is about that of port wine. The flavour is bland and attractive. It is obvious that the preparation is a powerful restorative and food.

"TOPMAST" SARDINES.

(ALF. SPRING AND CO., WEST DOCK-STREET, HULL.)

We have already in these columns referred to the peculiar nutritious properties of the sardine, pointing out that, among its advantages as an article of diet, it favours the ingestion of oil. The tinned sardine contains approximately a fourth of its weight of protein and an eighth of its weight of fat. This amount of fat, however, excludes the oil adhering to the fish, which is considerable. It is well known that fats assist in assimilation of proteins, and in particular prevent their cleavage into injurious waste products. We examined samples of the above described brand and found them satisfactory. There was no evidence of corrosion of the tin, neither was any metal found in the oil or fishes. The samples examined included sardines packed

in olive oil, and samples also with tomato. The oil is undoubtedly genuine olive oil, and the preparations possess a good appetising flavour.

ADALIN.

(THE BAYER CO., LIMITED, 19, ST. DUNSTAN'S-HILL, LONDON, E.C.)

Adalin is regarded as a mild hypnotic which may be trusted to produce no unpleasant after-effects. It is in a way related to veronal, inasmuch as it is an ethyl acetyl urea, with, however, bromine contained in the molecule. But apparently its therapeutic action is not referable to the bromine, as is the case with ordinary bromides, since this is liberated too slowly, and is therefore only slowly dissociated. Adalin is insoluble in cold water, but soluble in hot, and is practically tasteless and odourless. It is conveniently administered in tablets containing five grains of the drug.

(1) GOLDEN SHRED ORANGE MARMALADE; AND (2) SILVER SHRED LEMON MARMALADE.

(JOHN ROBERTSON AND SONS, PAISLEY AND LONDON.)

Marmalade has become such a popular article of diet, chiefly at the first meal of the day, that the question of its purity and quality is important. It no doubt serves to some extent as a bitter and tonic aromatic, exercising a salutary effect on the gastric centres. These preparations gave excellent results on analysis, showing a total solid constituent of 77·07 per cent., of which 66·66 per cent. consisted of sugar, roughly a half of which was inverted. The orange and lemon occur in fine shreds. The preparations had the appearance of a clear jelly and are attractive to the taste. According to our analysis they are not thickened with gelatin or preserved with chemical antiseptics.

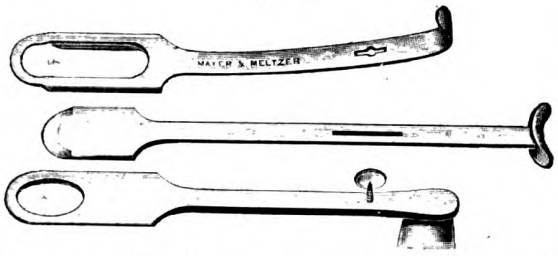
New Inventions.

AN IMPROVED AND SIMPLIFIED ASEPTIC MACKENZIE GUILLOTINE.

IN spite of the many modifications and improvements which have been made from time to time in Mackenzie's guillotine, some of its defects have remained in one or other pattern, and some are common to all: (1) the difficulty of cleaning the groove and slot along which the blade passes; (2) the large number of parts, some of which are small, easily detached, and easily lost; (3) the dependence of the instrument for its proper working upon two screws, the threads of which rapidly wear out, and the fact that these defects usually become manifest during an operation.

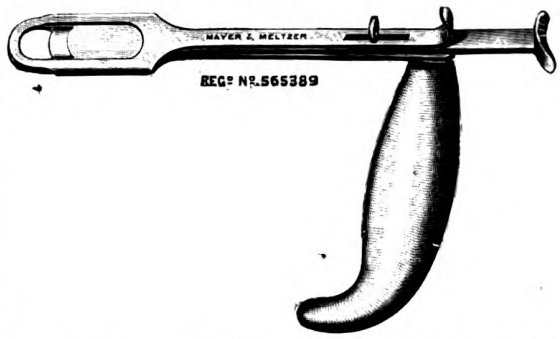
I have devised an instrument in which these defects have been entirely eliminated, and I am indebted to Messrs.

FIG. 1.



Mayer and Meltzer for the great interest they have shown in the instrument and the pains they have taken to produce a really workmanlike tool. The main points of the guillotine may be summarised as follows: 1. It consists of three separate parts instead of, as in most other patterns, six (Fig. 1). 2. There are no screws in it; the handle and turn-button which holds down the spring are permanently attached to the "bed-plate." 3. The "bed-plate" has no grooves at the side or slot at the end, so that it can be cleaned perfectly in a few seconds. 4. The spring and retaining sheath for the blade are in one piece, and as the grooves are open this part also can be cleaned in a few seconds. 5. The handle (Fig. 2) is of an entirely new

FIG. 2.



shape with a slight forward tilt and a forward curve at its extremity, giving great power of lateral pressure against the pillars of the fauces. As this handle, however, has not been found to fit all hands experiments are being made with a view to still further improving it. 6. The instrument can be taken to pieces and put together again in ten seconds, by the watch. 7. A nurse can thoroughly clean and polish the whole instrument, preparatory to sterilising or putting away, in three minutes. 8. An extended trial shows that it is thoroughly efficient in its work, the blade being in perfect apposition to the "bed-plate" and held down by exactly the right amount of pressure applied in the right place.

HUGH E. JONES, L.R.C.P. Lond., M.R.C.S. Eng.,
Honorary Surgeon, Liverpool Eye and Ear Infirmary.
Liverpool.

A SIMPLE NASAL SPECULUM.

FOUR or five years ago I was unexpectedly asked to examine a patient's nose in a country house. I had a frontal mirror, but no nasal speculum. I managed to improvise one with a large hair-pin bent so that the ends of the loops forming the blades overlapped the shanks, thus rendering the blades incompressible. It worked so well that I had a number of these specula in an improved form made by the Holborn Surgical Instrument Company. These instruments have the advantages of being efficient, perfectly sterilisable, and cheap, costing only 6*d.* each. They are thus very suitable for hospital out-patient work or in other circumstances where a ready succession of unused instruments is required.

JAMES DONELAN, M.Ch.R.U.I.,
Laryngologist to the Italian Hospital, London.
Manchester-square, W.

THE BRITISH MEDICAL ASSOCIATION: HONORARY DEGREES.—At the annual meeting of the British Medical Association in Birmingham the University will confer the honorary degree of Doctor of Civil and of Canon Law upon Mr. John Burns, M.P., Sir Francis Lovell (president of the Tropical Medicine Section), Dr. R. H. Chittenden (professor of physiology at Yale), Professor H. Oppenheim (neurologist, of Berlin), Professor Paul Strassman (assistant professor of obstetrics, Berlin), Dr. Byrom Bramwell (President, Royal College of Physicians, Edinburgh); Dr. J. A. Macdonald (chairman of Council, British Medical Association), Dr. R. A. Reeve (ex-President British Medical Association and professor of ophthalmology at Toronto), and Professor G. Sims Woodhead (professor of pathology at Cambridge).

THE LANCET.

LONDON: SATURDAY, JULY 22, 1911.

The National Insurance Bill.

THE progress made in the National Insurance Bill during the past week will be found noted in other columns of this issue, as well as the views and representations of important bodies, as, for example, the General Medical Council, the Royal College of Physicians of London, King Edward VII. Hospital Fund for London, Dublin University (Trinity College), the Royal College of Surgeons of Edinburgh, and the Irish National Party. As far as the medical profession is concerned the situation to-day does not differ much from that of last week. Although the clause of the Bill which defined medical benefits has been closely debated, and the number of proposed amendments has been large, the alterations in the Bill have not been far-reaching, and their essential effect upon the medical profession has not been, as a rule, important. An exception to this statement is the large increase in maternity benefit now offered by Mr. LLOYD GEORGE. Under the new subsection to Clause 8 the wives of workers who themselves work will obtain the double benefit which is quite clearly earned by the double subscription to the insurance fund. The amendment has met with very general approval. The medical profession at large well knows the drain on the resources of the working household that may be caused by the incidence of a confinement, and will commend this more liberal treatment of the mothers of the nation.

Under the heading of medical benefits is of course included sanatorium treatment, and the debate on this subject was an extremely important one. For the first time the House of Commons received from medical men a definite statement as to the part which the properly managed and arranged sanatorium may play in the national health. It was made clear to the House that sanatorium treatment is not a remedy for phthisis, that it is not a panacea for other diseases, that it is not by itself going to eliminate anything in any way whatever, but that the sanatorium in its proper place is a most valuable institution. Dr. CHRISTOPHER ADDISON'S speech setting out the benefits to be expected from the sanatorium treatment of tuberculosis, as well as the terrible cost of this disease to the community, was met with a reply from the Chancellor of the Exchequer that the Government was prepared to recognise that the sanatorium properly used is a most valuable weapon in the campaign against consumption. The excellent memorandum published in THE LANCET last week, and signed by Sir CLIFFORD ALLBUTT, Sir LAUDER BRUNTON, Dr. ARTHUR LATHAM, and Sir WILLIAM OSLER, proves how right the Chancellor and the House of Commons are to take up this view, while the critical remarks made in the course of the debate by, among others, Dr. ESMONDE, Dr. A. P. HILLIER, and Mr. WALTER LONG, are sure to be fruitful. The limitations of sanatorium treatment will be better appreciated by the legislature and by the public now that these have been pointed out, while far more economy will be practised than hitherto in respect of their organisation and maintenance. Mr. LONG made a demand for endowment under the Bill of medical research. It is perhaps not too much to hope, particularly as economy is sure to be practised for the future in the provision and support of sanatoriums, that money will be found to carry on a continuous scientific investigation into the causes which mainly influence the incidence and spread of tuberculosis. These are matters of paramount interest to the public as well as to medical men. The admirable work which has recently been done by the Royal Commission on Tuberculosis is threatened with an immediate end. Before it is too late cannot the very different conclusion be come to by the authorities that it would be wise to keep in working order the valuable research machinery erected by the Commission? The Chancellor of the Exchequer, with reference to the provision for research work under the National Insurance Bill, has recognised the fact that the Bill contains a permission to devote money to scientific purposes, and has pointed out that the Bill contemplates the treatment in sanatoriums not only of tuberculosis, but of such other diseases as may be included by order of the Local Government Board. We hope that Mr. LLOYD GEORGE will give effect to his words by helping to secure the continuation of the excellent scientific work done by the Royal Commission on Tuberculosis.

The memorandum of the Royal College of Surgeons of Edinburgh, which has, we understand, been sent to all Members of Parliament, sets out, with much the same arguments as those which we have previously employed, that delay in legislation is necessary to obtain the views of the medical profession. These, as the College rightly points out, have largely been so far taken for granted. The weighty recommendations of the Royal College of Physicians of London cannot receive consideration without adequate time, but the clause enumerating medical benefits has already been disposed of. While we admit that the Bill has so far received fairly full discussion from the whole House in Committee, the time is all too short for carrying through this intricate piece of legislation. The Chancellor has definitely promised under Clause 14, which deals with the administration of medical benefits, to recommit certain parts of Clause 8 if necessary; when this occurs the unanimity of the medical profession will be put to the test.

The Induction of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis.

THE principle of keeping an inflamed or injured part at rest is a fundamental one in treatment, and is borne out in many instances by Nature's own indications. The protective function of pain is now generally recognised, since not infrequently pain on movement serves automatically to ensure more or less complete immobilisation of an injured part. The reflex rigidity of the abdominal muscles over

acutely diseased viscera and the separation of inflamed serous surfaces by fluid exudates afford other illustrations of the same general principle. A further light is thrown upon the influence of rest or immobilisation on the course of acute and chronic infective processes by the recent development of the theory of auto-inoculation, to which in its special applications to pulmonary tuberculosis we referred in a leading article in THE LANCET of July 1st. It is now suggested that both active and passive movements, by altering the circulatory conditions about a focus of infection, tend to produce auto-inoculation and thus to lead to general symptoms. It is not surprising, therefore, that the suggestion has been made to immobilise the affected lung in cases of pulmonary tuberculosis. The method introduced by Dr. F. T. ROBERTS of strapping the affected side in cases of pleurisy so as to limit its movement was an early attempt in this direction, and although only of very limited efficacy certainly seemed to lessen the pain and afford some relief to the patient. Dr. M. S. PATERSON has lately shown the importance in febrile cases of pulmonary tuberculosis of keeping the patient absolutely at rest in bed—on much the same plan as in enteric fever—the suggested explanation of the value of this method being that it lessens the auto-inoculations with the products of the bacillary activity. It is obvious that the induction of pneumothorax, leading as it does to collapse and retraction of the lung, can bring about complete immobilisation of the lung. Various attempts have been made to apply this fact practically to the treatment of the disease. Many years ago Dr. WILLIAM CAYLEY endeavoured to treat a case of persistent hæmoptysis by the artificial production of pneumothorax. The attempt failed, and the method was thereafter merely mentioned in the text-books as one of the curiosities of unsuccessful treatment. It has lately been repeated apparently with more success, and the same principle has been applied to the treatment of the disease apart from hæmoptysis. The method appears to have been originally advocated for this latter purpose by FORLANINI in 1882, and was employed by MURPHY in America in 1893. It has also been extensively tried on the Continent. In this country but little attention has been devoted to it until recently. We published in THE LANCET of July 15th an interesting paper by Dr. CLAUDE LILLINGSTON in which the practical details of the procedure are described, together with the indications for its employment, while the risks incurred in consequence are carefully discussed. We also published the clinical accounts of six cases in which artificial pneumothorax had been employed.

The condition of artificial pneumothorax is induced by the introduction through a hollow needle of sterile gaseous nitrogen between the parietal and visceral layers of the pleura. Several methods of effecting this are in use. The original method of FORLANINI, which consists in the introduction of the nitrogen into the pleural cavity through a fine hollow needle, can, according to Dr. LILLINGSTON, be carried out with ease in cases not complicated by pleural adhesions, but he enjoins the most careful attention to every detail of the recently improved technique of its performance. The apparatus required consists of a water manometer, a contrivance for slowly introducing measured quantities of nitrogen, and a hollow needle, these being suitably connected together by tubing fitted with stopcocks in such a way that the lumen of the needle may be connected with the manometer or with the nitrogen reservoir. The character of the needle is a matter of some importance, a large needle being more painful, while a thin-walled one is liable to buckle, or if its lumen is too fine it is useless for the manometric observations which are an essential preliminary to the introduction of the gas. Dr. LILLINGSTON describes the two needles in common use—viz., those of SAUGMAN and KJER-PETERSEN—with their advantages and disadvantages. The spot chosen for the puncture is in one of the axillary lines in the seventh or eighth intercostal space, though the conditions in individual cases have to be taken into consideration, since it is best to choose a spot where the lung is healthiest and to avoid the neighbourhood of cavities or of pleural adhesions for obvious reasons. The needle, connected with the manometer but cut off from the nitrogen reservoir, is introduced under strict antiseptic precautions, a momentary sensation of greater resistance being usually experienced when it meets and punctures the parietal pleura. If the point of the needle is within the pleural space and is not blocked by connective tissue the respiratory variations of the intrapleural negative pressure are shown by the manometer. Typical readings are: −14 cm. of water on inspiration and −6 cm. on expiration. Much slighter variations occur when the needle is outside the pleura, whereas a slight oscillation round a mean pressure about that of the atmosphere suggests that the point of the needle is in the lung. It is essential that the needle should be completely dry, as the presence of fluid within it prevents the intrapleural pressure from being recorded by the manometer. After introduction the needle may be blocked by blood or by connective tissue, and it may, under these circumstances, be necessary to pass a stilette along it to clear it. One of the dangers attaching to the procedure is the possibility of forcing air into a vein. To obviate this SAUGMAN, when in doubt, fits a syringe to the needle and aspirates, assuming that if blood is withdrawn a vein has been punctured. When it is clear from the occurrence of the manometric variations that the point of the needle is within the pleura filtered air or nitrogen is introduced. The quantity at the first injection should not exceed 200–300 c.c., and if there are extensive adhesions the pressure, which should be taken before the needle is withdrawn, may rise rapidly after as small a quantity as 50 c.c. It is recommended to repeat the injections every day, or every other day, until the lung collapses and a positive intrapleural pressure of from 5 to 10 cm. of water has been obtained. For this purpose it may be necessary to give several injections of 500 c.c. each. A pressure greater than 10 cm. appears to produce dyspnœa, sometimes of an alarming character, except in cases strictly limited by adhesions.

The rules for the selection of cases suitable for this treatment can hardly be said to be satisfactorily established. It appears that until recently it was employed only for those with marked fever in which one lung was very extensively diseased and the prognosis appeared almost hopeless, but

good results have apparently been obtained in earlier stages of the disease. Dr. LILLINGSTON, in his interesting discussion of this question, points out that there are certain questions to be settled before the method can be extensively applied to early cases or cases of limited extent—viz., the chances that the compressed lung will expand when the injections cease, and the dangers to life from pleural reflex and gas embolism. He admits that reliable answers to these questions cannot be given until the method has been more widely used. He also mentions as possible dangers empyema, hæmoptysis, tuberculous meningitis, and aspiration of pus into the other lung, and refers to an instance of pyopneumothorax reported by BRAUER and SPENGLER, as a result of adopting another method—viz., direct puncture after exposure of the pleura under local anæsthesia. It seems probable that the two most grave risks—viz., pleural reflex and air-embolism—can be very much diminished by careful attention to details of technique, and it appears that a lung can expand after compression lasting for several years, although it must be impossible to promise the patient a functionally active lung at the end of the treatment. Among the minor complications, serous effusion into the pneumothorax, which occurs in one-third of the cases, severe pain and dyspnœa with the first few injections, tachycardia and surgical emphysema may present themselves. The duration of the treatment appears to be lengthy, extending to as much as two or three years, the pleural cavity requiring to be refilled every month or two. If the inflations are discontinued too soon the disease may flare up when the lung expands. In view of all of these possible risks and complications, we cannot but feel that the method should at present be restricted to severe febrile cases which ordinary methods are failing to influence favourably, and further, that its tentative character should be carefully explained to the patient and his friends. It is obviously not a procedure to be lightly recommended, and until much more information is forthcoming both in regard to its immediate and remote results, it is impossible to form any judgment as to its value. In the meantime the careful record of cases, both successful and unsuccessful, such as those described in our columns by Dr. LEONARD COLEBROOK and by Dr. LILLINGSTON in conjunction with Dr. S. VERE PEARSON and Dr. A. DE W. SNOWDEN, will serve a useful purpose in drawing attention to the method and in encouraging other observers to publish their experience.

Physical Training in Secondary Schools.

EDUCATION is undoubtedly a question of body as much as of mind. The body, like the mind, has to acquire its store of information, to evolve habits of discipline, obedience, coördination, and readiness of response; and these require training as much in the one case as in the other. It is not merely a question of "exercise," as generally understood—that is, of haphazard opportunities for the play of the physical forces of the body. Romping play, field games, sports are useful; but they cannot supply that equable development of all parts of the body or confer that effective self-control which are the result of formal physical exercises in the gymnasium when scientifically devised and intelligently taught and carried out. Each, in fact, is complementary to the other, and each is a necessary constituent of an adequate school life. We welcome, therefore, the Memorandum on Physical Training in Secondary Schools recently published by the Board of Education in which these lessons are very clearly taught.[1] Speaking of the object of physical training, the circular, which is signed by Sir GEORGE NEWMAN for the Medical Department of the Board of Education, says that its physical effect includes the influence on the general structure and nutrition of the body, and he recognises clearly the part played by such training in the prevention or correction of faulty action or attitude of the body or of part of it, and in the development of the neuro-muscular system. The educational effect includes among other results the acquirement of habits of discipline, obedience, ready response, and self-control. The disciplinary effects, however, it is pointed out, must not be over-estimated to the detriment of the recreative effects, any more than in games and amusements their adaptability to the task of human development should be entirely lost sight of in presence of their function of producing enjoyment.

Of the many and various kinds of physical exercises that have been devised and are in vogue the circular considers the Swedish system the most suitable in every way because of the definite form of the exercises, which are capable of control by the teacher as to their effects; because they admit of careful graduation and can be arranged in lessons on a reasoned plan. Other systems—the German, the British, the American—are held to be inferior in the fact that they do not provide a "table" of exercises in which the movements follow one another in a certain recognised order and sequence; they do not maintain a regular and steady progression throughout the training, and they lack a characteristic word of command. The Board therefore recommends that all secondary schools should adopt in principle the Swedish system of physical exercises, the best introduction to which will be found in the Board's official syllabus of physical exercises. The advantages of a gymnasium are considered, and general instructions laid down on such subjects as the length of the lesson, the number of lessons, the place of physical exercises in the time-table, the size of the class, and dress. Regarding the qualifications of the teacher, the Board considers that wherever practicable, an expert trained teacher should be a member of the school staff. As this will rarely be practicable, however, in boys' schools, it is recommended that the member of the school staff who is best qualified for the work should be made responsible for physical training, and to this end he should avail himself of opportunities for improving his qualifications by attending teachers' classes or vacation courses. In girls' schools it is easier to obtain the services of a whole-time fully trained woman, and if there is not sufficient physical work to occupy her time one should be engaged who can take some other part in school work.

The circular finally considers the intimate relation of the

[1] Circular 779. Memorandum on Physical Training in Secondary Schools. 1911. London: Wyman and Sons; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby, Limited. Price 2d.

medical officer of the school to the physical training, and points out the desirability of the arrangements being under his supervision, so that he may, for example, take note of the time allotted to physical exercises, the number and length of lessons, their place in the time-table, and their relation to meals. But the medical officer in this connexion should also study the effect of the training on the development of the pupils, and be particularly on the look-out for fatigue or overstrain. It is easy enough to examine and find out those pupils who are unfit for violent exertion, and to order the special exercises required in certain cases, such as flat-foot, but it may not be so simple to ascertain with certainty the subjects who are in a general way not benefiting by the training. We are fortunately beginning to retreat from the position that seemed some time ago to be becoming prevalent, that the mere filling of the head of the pupil with a mass of information constituted education. The object of education is to develop character mental and bodily and so make worthier men and women. No amount of mere instruction will ever accomplish that, nor will any amount of physical training. The right blend of each is wanted.

Annotations.

"Ne quid nimis."

SMALL-POX IN THE UNITED STATES: A DANGEROUS DOCTRINE.

IN an article on Small-pox in the United States, by Assistant Surgeon-General John W. Trask,[1] of the United States Public Health and Marine Hospital Service, the author gives utterance to the following statement: "That the community is protected by vaccination may be true for certain localities, but that the protection thus afforded is general can hardly be maintained." An assertion so entirely revolutionary, coming from such a source, cannot pass unchallenged, and we look at once for the evidence adduced in support thereof. Having pointed out that "one of the most notable features of the small-pox which has been more or less prevalent in the United States for at least ten years is its extreme mildness and the small number of deaths which it has caused," Surgeon-General Trask tells us that "to explain the small number of deaths in the United States we may presume that either the people are partially immune to the disease or else that the existing infection is extremely mild and non-virulent." Why "either ..... or else"? The two conditions are not mutually excluding. On the contrary, they may be, and probably are, co-existent and reinforcing. A vigorous defensive force does not exclude the possibility of a weak attacking one, or *vice versâ*. With such a total disregard of logic staring us in the face at the onset we proceed with lessened trepidation to the course of the argument. Having settled satisfactorily in his own mind that the mildness of the United States outbreak must be due to either one or the other cause, the author proceeds to investigate the first of his alternatives—a partial immunity to the disease—which in like manner he says "might be the result of general vaccination or a racial characteristic otherwise acquired." Again we ask, why "either ..... or"? Surely in this case, also, neither factor excludes the possible operation of the other. It is at this point in his argument to eliminate the factor of immunity as the cause that he lays down the startling proposition above referred to and proceeds to substantiate it as follows: Japan as a nation is "protected" by vaccination as well as, or even better than, the United States; but in 1907–08 there was in Japan an outbreak of small-pox with 19,101 cases and 6273 deaths. As indicating the relatively small number of unvaccinated individuals, he says that out of 5215 small pox patients 1527 were found who had never been vaccinated. But he also tells us that in this outbreak there were found 242 cases in which the patients had previously had small-pox, and of these 57 died. Now, in an outbreak of such intrinsic virulence that even the major and usually absolute immunity of a previous attack of small-pox fails, the minor immunity of vaccination could surely be allowed a greater margin of ineffectiveness without standing convicted of being a local failure. But we find cited, in order to establish the virulent nature of the attack, the fact that the general death-rate of the disease in 1907 was 42·25 and in 1908 was 32·32, while the death-rate among the unvaccinated was 69·4. To produce a general mean, therefore, of 42·25, not to mention 32·32, the death-rate among the vaccinated must have been proportionately low indeed. Surgeon-General Trask next tells us that "if the non-virulence of the disease in this country [United States] is due to protection by vaccination it would be expected that the mild cases would be found only in those so protected"—another *non sequitur*, dependent upon the illogical hypothesis that if vaccination induces immunity nothing else can do so. If, however, the author means to state, not that "mild cases would be found only in those so protected," but rather that "only mild cases would be found in those so protected," it is pretty safe to assume that, relatively speaking, having regard to the virulence of the epidemic, such will be found to be the case. The author apparently thinks otherwise, for he continues: "That the type of the disease as seen in the United States is due to the protective value of vaccination is shown not to be true for certain localities in which outbreaks of the virulent form of the disease have been reported," and he instances 11 such virulent outbreaks as having taken place in 1910—viz., Bay City, Saginaw, and Lapeer, in Michigan; Cleveland, Ohio; Bee County and Denton County, Texas; Marion County, Oregon; Grady County and Oklahoma County, in Oklahoma; Reno County, Kansas; and New York City. Of these we must leave out of consideration Bay City, Lapeer, Grady County, Oklahoma County, Reno County, Denton County, and New York City, because no reference is made in these reports to vaccination at all. But in all the cases in which reference is made to vaccination the protective influence stands out with remarkable clearness, it seems to us. For instance, we are told that in Saginaw the outbreak was so virulent that from three cases with no deaths in September it jumped to 81 cases with 19 deaths in October and 82 cases with 29 deaths in November. Over 40,000 persons were then vaccinated and three weeks' quarantine was enforced in the city until Nov. 26th, "since which date no case of small-pox has occurred." Of the Cleveland outbreak we are told "there was no instance of the disease in those recently vaccinated." Two mild cases occurred in this virulent outbreak in persons who had been vaccinated respectively 17 years and 45 years previously; two medical students, vaccinated on the day of exposure, had very mild attacks. "All the other cases were among unvaccinated children." In Bee County, Texas, "the health officer of Bee County was called to see a patient who had small-pox. There were nine other people living in the house, all of whom refused to be vaccinated, saying that they preferred small-pox to vaccination. A man and two women from another house who had visited the patient before the nature of the

[1] Small-pox in the United States—Prevalence and Geographic Distribution during the Calendar Year 1910. Compiled by John W. Trask, Assistant Surgeon-General. Public Health Reports, June 23rd, 1911. Washington: Government Printing Office.

disease was known submitted to vaccination. The vaccination was successful, however, only in one of the women. Thus, of the 12 who had been exposed to the disease there was but one who had ever been successfully vaccinated; that is the woman above referred to. This woman did not contract the disease, the other 11 did. The original case and 11 secondary ones made 12 in all, and of these five died. A death-rate of 41·66 per 100 cases." In Marion County, Oregon, 29 cases occurred in a virulent outbreak. Of these, 17 had been vaccinated "at some time or another," but they all recovered, while of the 12 who had never been vaccinated 9 died! Finally, a farmer and his wife, with an unmarried daughter, went to visit their son. In the train they sat near a small-pox convalescent (he was detrained as soon as his condition was discovered). The mother, who had been vaccinated 55 years before, had a mild attack of small-pox. The farmer, the son who was being visited, the farmer's daughter, the son's wife, and his child were attacked in succession. None of them had ever been vaccinated. All died from virulent small-pox except the child, who ultimately recovered at the cost of great disfigurement. These are all the cases in which vaccination is referred to, yet in the face of such evidence, recounted by himself, Surgeon-General Trask lends the weight of his authority as a high official of the United States Public Health and Marine Hospital Service, in a periodical which is widely circulated among lay as well as medical readers, to the assertion that it cannot be maintained that the protection afforded by vaccination is of general application.

SOME VIEWS ON NATIONAL INSURANCE AND TUBERCULOSIS.

A VERY important part of the National Insurance Bill is the proposal to devote some of the money to be raised by its operations, if it passes into law, to dealing with the important problem of the treatment and prevention of pulmonary tuberculosis among the persons affected by the Bill. Such an object must necessarily appeal most strongly to those interested in the medical and philanthropic aspects of the tuberculosis problem. We have received a copy of a collection of the opinions of some representative workers in both of these fields, which is published in the July number of the *British Journal of Tuberculosis*. Almost without exception the opinions expressed in regard to the proposals of the Chancellor of the Exchequer to set aside a capital sum of £1,500,000 to assist local charity and local authorities to build sanatoriums throughout the country and to provide a fund of £1,000,000 a year to maintain these institutions are commendatory, in some instances enthusiastically so. Mr. C. S. Loch, the secretary to the council of the London Charity Organisation Society, is, however, of opinion that there is most need for proper local dispensary and "contact" case work. He thinks that the Bill as it stands bids fair to kill off voluntary effort and believes that a much less ambitious scheme would be much more effective. The necessity of providing homes for advanced cases is strongly urged by Sir Thomas Oliver, Sir William J. Thompson, and Dr. Arthur Latham. The importance of the housing question in prevention is discussed by Sir Thomas Oliver and Dr. Duncan Forbes. Dr. G. F. McCleary objects strongly to the proposal to entrust the administration of the sanatorium benefits to the Local Health Committees rather than to the existing Public Health authorities. He suggests that what is required is the development and coördination of existing agencies and authorities, not the creation of new official machinery, which in his opinion is bound to lead to duplication of work, overlapping, and waste of effort. Sir Thomas Oliver, Mr. Waldorf Astor, Dr. Latham, and Dr. Duncan Forbes all emphasise the importance of the detection of early cases and the diffusion of knowledge in regard to this disease with this object in view. Dr. M. S. Paterson discusses the value of sanatoriums in the treatment of the disease and the use of specific methods of treatment. He also refers to the importance of preventive measures. Dr. Jane Walker insists that the constitution of the Local Health Committees shall be really representative, and that at least one-third of the members shall be women. Mr. David Davies, M.P., the chairman of the Welsh National Association for the Prevention and Abolition of Tuberculosis, expresses the opinion that the State grants should be made in some sort of proportion to local effort, and hopes that Wales may be treated as a unit for the purposes of sanatorium benefit. Several of the authorities express the hope that the tuberculosis dispensaries may share in the proposed benefits. While all are obviously convinced of the necessity for the proposed dealing with the tuberculosis problem, there is by no means unanimity of opinion as to the best means of utilising to the best advantage the money which it is proposed to raise. We feel strongly that existing institutions that are doing good and useful work should be encouraged and helped, and that provision should be made for the advanced cases, which are the greatest danger to the community at large and for which at present, apart from the Poor-law institutions, little provision exists. We also hope that if the proposed sums of money are forthcoming steps will be taken to ensure that the views of those having the closest and most intimate knowledge of the tuberculosis problem shall be duly considered, with a view to the most effective and economical employment of the money.

THE NASTIN TREATMENT OF LEPROSY.

AN important and highly interesting report,[1] by Dr. K. S. Wise, Government bacteriologist of British Guiana, has recently been issued by the Colonial Office on the treatment of leprosy by nastin. The report gives the results of the extended trial of this remedy in the Public Leper Asylum at Mahaica during the period from December, 1908, to September, 1910. What makes the report more interesting is the fact that Professor Deycke, the originator of this treatment, visited British Guiana at the end of 1908 at the invitation of the Governor, and with the approval of the Secretary of State for the Colonies, and remained in the colony for about six months in order that he might personally direct the method in which the treatment should be carried out. When he left his instructions were carefully observed and the treatment was maintained strictly on the lines he had indicated up to June, 1910, when experience suggested some modifications; among these was increase of the dose of nastin hypodermically injected; trial was also made of intramuscular injections, and single nodules were injected. In view of the apparent failure of nastin to cause any change or destruction in B. lepræ in the nasal cavities or in the larynx weekly or bi-weekly sprayings by means of an all-glass nebuliser were adopted. Intractable ulcerations were treated with ointments containing benzoylchloride in 2½ and 5 per cent. strengths. Finally, benzoylchloride in olive oil is now being used in some patients as an injection instead of nastin itself. These later methods have not been sufficiently long in use to warrant a report upon them being included in the present one, but it is hoped to give the results at a future date. So far as we know, although nastin has been

[1] A Report on the Nastin Treatment for Leprosy at the Mahaica Leper Asylum, British Guiana, 1908–10. By Dr. K. S. Wise, Government Bacteriologist. Presented to both Houses of Parliament by command of His Majesty, May 11th, 1911. Published by H.M. Stationery Office. Price 1s. 2d.

tried by many experts in the treatment of leprosy, in no instance that we remember has the test been applied before on so large and extended a scale. The reports on the former trials of nastin have been somewhat conflicting, some experts asserting that marked improvement followed the use of the remedy, while others of equal standing reported unfavourably upon it, saying that it had no apparent effect upon the disease at all. Nastin, our readers are reminded, was introduced by Professor Deycke, a German medical officer in the service of the Turkish Government, and stationed in Asia Minor, where he had opportunities of studying leprosy and its treatment. Nastin is a fatty principle extracted from cultures of a streptothrix which Professor Deycke found in the nodules of lepers. It is combined with benzoylchloride, and is made into ampoules with sterilised olive oil. It is now manufactured by a German firm of chemists at Biebrich, on the Rhine, for export. The action of this remedy is said to be effected by the nastin attaching itself to the leprosy bacillus, after which the benzoyl acts upon the bacillus, damaging it by the removal of its fat, when the normal fluids of the body complete its destruction. Nastin is used in three strengths—B_0, B_1, and B_2, the latter being the strongest. It was nastin B_2 which was employed throughout in British Guiana. The number of lepers treated by this remedy in the British Guiana Asylum during the period in question was 135, of whom 80 suffered from the nodular type of the disease, 24 from the anæsthetic, and 31 mixed. There was no selection of cases for the nastin treatment; any leprous patient asking for it received it. Few of the cases could be regarded as early, or favourable, instances; only 3·7 per cent. had had the disease to their knowledge for less than two years. It is worthy of mention that the majority of the lepers who received the injections declared that the treatment produced "a light feeling all over," and as a result they were observed to work harder and more willingly on the farm or on their own garden plots. It is not possible to say how much of this tonic effect was due to the remedy or to the renewed hopes of a cure inspired by the injections. Dr. Wise, in summing up the results, says that the experience gained at the Leper Asylum shows that a few early cases, that is, those of less than 18 months' duration, improved considerably under the nastin treatment, so much so, that they might be regarded approximately as cured. But, on the other hand, some early cases got very much worse, though treated precisely in the same way as the others. It does not seem possible to foretell which course a given patient will follow under the treatment until it has been in process for some time. The action of the nastin injections appeared to be that they initiated, accelerated, or intensified a natural process, which usually occurs spontaneously in too small a degree or too late in the course of the disease to be of any benefit to the patient. It is claimed by Professor Deycke that nastin is capable of producing reactions of a general or local kind, the latter being confined to leprous tissue. On this point Dr. Wise says that his experience does not enable him to give a definite opinion; he admits, however, that such reaction does occur in some cases. There seem to be great variations in individual susceptibility and resistance. Probably in the majority of cases large initial doses are required to produce reaction; moreover, immunity to the action of nastin seems to arise rapidly. As has already been pointed out, Professor Deycke claims that the injections cause definite changes to take place in the B. lepræ, which eventually lose their acid-fast property. In certain cases Dr. Wise found that there had been a marked and persistent increase in the bacillary changes which occur in every leprous patient in greater or less degree; in the majority of the cases treated by nastin a temporary increase of such changes was observed. In a number of instances, however, no increase of the usual natural bacillary changes was noted. Professor Deycke claims that the injections arrest the progress of the disease. But Dr. Wise says that some of the patients undoubtedly got worse under the treatment, while the majority remained *in statu quo ante;* a few improved, and three of them might be regarded approximately as cured. Dr. Wise's conclusion is that since the favourable results are so few, longer and wider experience can alone determine whether these successful cases were instances of natural improvement irrespective of the administration of nastin, or whether, on the other hand, the injections played an active part in effecting the disappearance of the leprotic deposits. We must confess that these results are disappointing, for we had been led to hope that the testing of the nastin treatment in British Guiana would yield definite and conclusive evidence of the correctness of Professor Deycke's contentions on behalf of his remedy for leprosy. It is possible that if there had been selection of "early" cases for treatment by nastin the tabular results might have appeared more favourable. In contrast to the cautious and guarded conclusions of Dr. Wise is the sanguine tone of the prefatory letter of the Governor of British Guiana to the Secretary of State which accompanies the report. In this the Governor says that since the nastin treatment has been introduced four lepers have been discharged, and he adds: "I am in a position to say that at the present time (March 31st, 1911) there are 56 cases in which no leprosy bacilli can be found, and of this number it is hoped that 75 per cent. will be fit to be discharged within the next three months. Never before in the history of the Leper Asylum of British Guiana has leprosy been successfully fought, and the results which have now been obtained will doubtless lead to further research and to a more complete conquest of this most terrible of diseases." We sincerely trust that there are substantial grounds for His Excellency's hopeful anticipations. It is possible that as his letter was written at a later date than Dr. Wise's report the Governor has been able to make use of certain information since obtained throwing a more favourable light on the treatment of leprosy. If this be the case, we hope that a further report will be published at an early date for the benefit of those who are concerned with the treatment of lepers, hitherto a hopeless task, and one from which little satisfaction could be derived.

THE DISINFECTION OF WOUNDS WITH TINCTURE OF IODINE.

IN a recent number of the *New York Journal of State Medicine* Dr. Charles F. Nieder discusses a subject that has, as our readers know, considerable interest for practical surgeons. The details given must be familiar to many of our readers, but iodine as a disinfectant is hardly sufficiently appreciated. Dr. Nieder has used tincture of iodine for disinfecting minor wounds and found it most satisfactory. He used it to prevent infection of slight abrasions of his own hands and found that these healed quickly. The inflammatory reaction which sometimes had occurred previously was almost invariably prevented. He uses the tincture in the treatment of nearly all minor wounds. The following are some examples. A boy stepped on a rusty nail which punctured the ball of the foot through to the dorsum. He was seen two days later with the wound infected and the foot badly swollen and very painful. A small incision was made on the dorsum and a fine ear curette was passed through the wound, cleaning out particles of dirt. A very narrow strip of gauze was twisted, dipped in tincture of iodine, and passed

through the wound. On the following day the pain and swelling had disappeared. The gauze was left in for another day and then removed. Recovery was rapid. In another case a boy had his palm badly lacerated by a bursting cartridge. The wound was cleaned, particles of wadding being removed from between and even from behind the metacarpal bones. The wound was swabbed out with tincture of iodine and rapid recovery ensued. In a third case a man sustained a bullet wound through the thickest part of the hand from the accidental discharge of a revolver whilst cleaning it. Particles of skin were removed from the wound at the point of entrance. Then a narrow strip of gauze saturated with tincture of iodine was passed through from the point of exit, between the metacarpal bones, and allowed to remain in for two days. It was then partly withdrawn, allowing the wound of exit to close, and on the following day was removed entirely. The patient returned to work five days after the accident. In a fourth case a bullet wound of the hand had been treated for three weeks by irrigation with hydrogen peroxide and packing with gauze. It was discharging pus freely from both entrance and exit. It was swabbed out with tincture of iodine. The pus rapidly disappeared and healing promptly took place. In applying iodine to large wounds care must be taken, as it is possible for sufficient to be absorbed to cause toxic symptoms. The chief objection to its use is the sharp burning sensation produced, but this lasts only a short time. Healing is much more rapid than under solutions of carbolic acid or bichloride of mercury. According to Dr. Nieder, punctured wounds caused by nails and similar objects should be enlarged in the skin, and cleaned out with a small ear curette; then a narrow strip of twisted gauze should be dipped in iodine, introduced, and allowed to remain in for two or three days. A strip should also be passed through bullet wounds of the extremities when the course can be followed with a probe. He advises also that in treating wounds requiring suture the skin along the edges should be painted with tincture of iodine, to prevent stitch abscesses.

THE LATE DR. JOSEPH F. PAYNE'S LIBRARY

THE valuable and extensive library of early medical, anatomical, and surgical works collected by the late Dr. Joseph Frank Payne, librarian to the Royal College of Physicians of London, was advertised for sale at Sotheby's, London, on Wednesday, July 12th, and two following days. It included many extremely rare works on the above subjects, besides what is probably the most complete collection in existence of books and tracts on plague, ranging from the "De Observatione in Pestilentia" of Alexander Benedictus of Verona (1493) and the "Tractatus de Epidemia" of Valastus de Tarenta (1497) to the "Treatise on Plague" of Dr. W. J. Simpson (1905). The whole were catalogued in 731 lots. Out of such a collection it must seem impossible to select anything for special mention, for without making the list unduly long whatever is selected may leave other volumes equally valuable to complain of omission. The discerning eye, however, will be struck with, among others, a MS. on paper of the "Trattato della Venena" of Petrus de Abano (fourteenth-fifteenth century); a very rare copy of the "Liber Mineralium" of Albertus Magnus; a very rare copy (1588) of Read's translation of the "Most Excellent and Compendious Method of Curing Woundes in the Head," of Franciscus Arceus, including Read's quaint poem, "A Complaint of the Abuse of the Noble Arte of Chirurgie"; a rare edition (1523) of the "Anatomy" of Berengarius Carpensis; the Florentine *editio princeps* (1478) of Celsus' "De Medicina," Lib. VIII.; the interesting anatomical studies of Realdus Columbus of Cremona, "De Re Anatomica," Lib. XV. (1559); and a first edition (1652) of Culpeper's "English Physitian." The various editions of Galen, Harvey, and Hippocrates are well represented, as is also the "Regimen Sanitatis Salerni." A note to the catalogue stated: "The whole will be offered first in one lot, but if the reserve price be not realised the collection will immediately be sold separately as catalogued." At 1 o'clock precisely on Wednesday the auctioneer mounted the rostrum, and at the upset price of £2000 invited biddings; these ceased at £2500, and the collection, "with all faults and errors of description if any," was knocked down to Mr. Tobin.

APPLICATION OF THE BIOLOGICAL SERUM TEST FOR BLOOD STAINS AT THE OLD BAILEY.

A RECENT case tried at the Old Bailey, in which a gardener named Pateman was convicted and sentenced to death for the murder of a girl to whom he had been engaged to be married, was an instance in which stains upon the clothing of the accused person had been proved to be human blood by the application of the biological serum test. On this occasion there was sufficient evidence apart from the blood stains to connect the prisoner with the crime, and the fact that he killed the woman was hardly in dispute, the defence being that he was insane when he committed the act. Mr. Justice Darling, however, called attention to the value of a discovery which enabled scientific evidence to be given proving the presence of human and not merely of mammalian blood, and also called attention to the fact that the evidence of Dr. W. H. Willcox connected the prisoner still more closely with the crime, as his examination pointed to the blood being that of an anæmic person, and the murdered girl had been proved to have been medically treated for anæmia.

THE FEEDING OF NECESSITOUS CHILDREN.

THE arrangements in connexion with feeding necessitous children at Brighton have been very successful, and education committees from various parts of England have visited them and gained some practical experience. Dr. Duncan Forbes and Dr. J. Lambert are to be congratulated upon the excellent results that have been obtained. Dealing firstly with the working of the canteens during the year 1910–11 the following shows at a glance the extent of the undertaking, and excepting it is necessary to add that the figures in parenthesis denote those for the year 1909–10, the table speaks for itself:—

Approximate number of children nominated for free meals (May–July)		400	
Approximate number of children nominated for free meals (October–April)		1,700	
Total free meals granted		76,701	(64,246)
Actual number of individual children who have received free meals:—			
Recommended by school medical officer	550		
Fed on economic grounds	446		
Fed for various reasons and not examined	54	1,050	(902)
Total number of 1*d.* dinners sold		3,679	(2,355)
Average number of free meals granted per day (May–July)		219	(250)
Average number of free meals granted per day (October–April)		491	(450)
Highest number to receive free meals in any one week		650	(700)
Total sum expended on food during the year		£246 10*s.* 10*d.*	(£216 9*s.* 6½*d.*)
Amount received for 1*d.* dinners		£15 6*s.* 7*d.*	(£10 11*s.* 10*d.*)
Cost of each meal		¾*d.* (4,5ths of 1*d.*)	
Total expenditure, including cost of feeding, administration, &c.		£379 14*s.* 2*d.*	(£453 10*s.* 3*d.*)

The large increase in the total number of free meals granted is accounted for by the fact that the number of days on which children were fed during the past year exceeded that of the previous year by 24 days, the numbers being 192 and 168 respectively. Now what is the result of all the work that

the compilation of these figures must have entailed? The reports submitted by Dr. Forbes and Dr. Lambert are encouraging. They show that the first gain an ill-nourished child makes on being properly fed is often in height. Dr. Lambert in tabular form gives an analysis of the recommendations made at the beginning and end of the session in the cases of 326 children examined at the commencement and at the end of the period of free meals. It is as follows:—

—	Boys.	Girls.	Total.
a. Recommended for free meals at beginning and end of session—i.e., nutrition not brought up to normal by feeding	66	75	141
b. Not recommended for free meals at beginning and end of session—i.e., nutrition not fallen below normal during feeding	61	71	132
c. Recommended for free meals at beginning and not recommended at end of session—i.e., nutrition brought above normal by feeding ...	19	19	38
d. Not recommended for free meals at beginning, but recommended at end of session—i.e., nutrition fallen below normal during feeding.	9	6	15
Total	155	171	326

Thus only 38 out of 326, or 11 per cent., received such benefit as to raise them out of the group which required extra feeding; while notwithstanding the free meals 15, or nearly 5 per cent., fell back into this group, although above the average at first. The drop, Dr. Lambert considers, might be due to three causes, probably the first and second being the most potent factors—namely, (1) disease; (2) insufficient or unsuitable food at home; (3) rapid increase of height, causing relative malnutrition—i.e., the weight not increasing so rapidly in proportion to the height as it should do. A table summarising the weight and height of 15 children in the above group (*d*) showed that although 10 out of 15 gained in weight the average gain was only 0·6 for 4–6 months' feeding, while the average gain in height was 3·2 cm., and as in Brighton nutrition is gauged by the relation of weight to height the tendency would be that all these cases would fall below the average standard of nutrition unless they were well above it at the first examination. It is not surprising, therefore, that with a greater gain in height than normal a great majority of the children remain ill-nourished according to the standard. However, it is quite clear from the results at Brighton that encouragement is given to continue the feeding of ill-fed school children, proving, as it does, that in such cases there is a rapid gain in height. Considerable gratification was expressed at the result of the year's working of the canteens during a recent meeting of the education authority, the hope being expressed that in such work of a national character the charge might later come from a national source instead of being contributed locally.

VISUAL EFFICIENCY.

THERE is a suggestive paper on this subject in the June number of the *Ophthalmoscope* by Mr. A. S. Percival. "A patient whose visual acuity has been reduced in both eyes from 1 to ·5 (i.e., from 6/6 to 6/12) has not suffered a loss of 50 per cent.; the vision that remains to him is much more important than the half that he has lost. The whole question resembles the well-known one in economics about the marginal value of a commodity." Such is the thesis of the paper, and Mr. Percival shows considerable ingenuity in deducing a mathematical formula, which will enable anyone to assign a numerical value to the loss of efficiency that results from the impairment of visual acuity in only one or in both eyes. The tables that he publishes should be of practical use to insurance companies, as giving a fair compensation to any person who insured his eyesight for say £100. It will be seen from the tables that such a policy-holder should receive the sum of £33 6*s.* 8*d.* if the vision of each eye were reduced to 6/12. Another form of policy is suggested by Mr. Percival in which account is taken not only of his loss of efficiency, but also of his loss in wage-earning capacity. A difficulty here arises as to the wage-earning capacity. For instance, we know of a coal hewer who was earning full wages when his visual acuity was less than 1/20, and yet other coal hewers seem to be totally disabled by having their acuity reduced to 6/36. The personal factor which is so important in these questions does not lend itself to mathematical treatment. At the same time, we recommend the careful study of Mr. Percival's paper to insurance companies, as it seems to us that the personal factor should be neglected by them, or they may be abused by malingerers.

THE TRANSPLANTATION OF LIVING BONE GRAFTS.

IN 1881 Jakimowitsch collected the theoretical arguments in favour of transplanting bony grafts, to repair defects in bone, and described very thoroughly the changes which certain forms of such grafts undergo when placed in an altered environment. Since then the literature on the subject has attained such dimensions that there exists a real need for further collation so as to enable the surgeon to draw conclusions from the mass of evidence scattered in the number of recorded cases. This work has recently been very ably performed by Streissler of Graz, who in presenting to the Berlin Surgical Congress the record of 29 of his own cases, devoted his attention to a thorough study of the subject, the result of which is seen in a lately printed monograph.[1] His own successes, as illustrated in the numerous diagrams and reproductions of X ray photographs included in this work, are too striking to be overlooked. They comprise not only the bridging over of small gaps in the flat and long bones, but much more interesting examples of the possibilities of the new methods as evidenced by the successful transplantation of a large portion of the tibia to repair a wide gap left after resection of the neck of the femur for cystic disease, and the equally successful restoration of the humerus by a piece of fibula 12 centimetres long taken from the same patient. Streissler insists on the advisability of using living bony tissue, preferably taken from the same patient, in the formation of these grafts. His experiments prove that living grafts taken from the lower animals, even when they contain both marrow and periosteum, are not desirable, since they tend to become absorbed and the periosteum cells appear to lose their proliferating power when transplanted. Dead grafts, either of decalcified bone, ivory, or artificial media, are quite unsuitable for the more severe cases, since their absorption is so rapid that they scarcely serve to form a support over which the periosteum of the grafted bone can grow. The transplantation of epiphyses, as advised by Helferich, has not so far proved of any great value, and Galeazzi has reported unfavourably upon it. Particularly valuable, from a practical point of view, is the author's extended discussion of the technique which has been found most useful in transplantation. A primary transplantation is the most useful, but in the majority of cases a secondary operation will have to be undertaken. The site of the implantation must be thoroughly opened up, care being taken not to damage the neighbouring tissues more than is absolutely necessary to enable the graft to be placed in position. To take the grafts from recently amputated but otherwise sound bones is seldom practicable, and stress is laid on the possibility, which does not seem to be merely theoretical, of

[1] Der gegenwartige Stand unserer klinischen Erfahrungen über die Transplantation lebender menschlichen Knochens, von Dr. Eduard Streissler, Assistant der Klinik, Graz, Separat-Abdruk aus Beiträge zur klinischen Chirurgie.

transmitting disease by this means. The writer therefore prefers to take his grafts from the patients themselves, usually from the tibia or fibula, both bones which are easily laid bare and from which the chiselling or resection of comparatively large pieces does not present any special difficulty. In obtaining a graft from the tibia, for example, the site of operation is carefully prepared for the reception of the graft, and the area over the bone whence it is proposed to remove the graft is as carefully sterilised with iodine solution, and the lower limb is rendered bloodless by means of a carefully adjusted Esmarch bandage. The manner in which the graft itself is removed and its size must depend largely on individual needs; a chisel or a Gigli saw is generally found to be the best instrument to use to detach the graft, which is then placed in normal saline solution, if the primary operation site has not yet been prepared, or is used at once. The implantation depends, again, largely on the requirements of the case. In some cases Streissler has found it possible to fix the ends of the graft firmly in the medullary cavity of the defective bony ends; in others he has had to use fixation methods such as wiring, aluminium or silver plating. The first method is much the more desirable one, and if the limb is subsequently immobilised by applying a well-fitting plaster support the results obtained are excellent. The wound at the site of the secondary operation heals easily, and gives no trouble in the majority of cases. That made for the implantation generally heals equally well if proper precautions are taken to keep it thoroughly aseptic. Indeed, Streissler lays justifiable stress on the prime importance of maintaining the most scrupulous asepsis in all transplantation operations. Unless that is seen to the grafts may necrose, be extruded as sequestra, or may give rise to prolonged suppuration which entirely nullifies the good obtained by the operation. The cases cited from the writer's own practice, and from the literature concerning 190 cases, are interesting examples of the complications which may arise when the aseptic technique has proved faulty. The indications for transplantation of living bone grafts are various. It has been used with success to repair defects in the long and flat bones, to lengthen a bone, to remedy deformity, in cases of arthrodesis and osteodesis, in fixing bones, and more recently in the transplantation of joints by Judet and Wrede. A full discussion of these indications, with illustrative cases, is given in the monograph. The results so far obtained go to show that the operation is one which has won for itself a recognised standing in surgery, and that should be more frequently employed than it is at present.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: NEW ADDITIONS TO THE MUSEUM.

A VALUED correspondent sends us the following additional note to our annotation in last week's issue, page 170, on the new additions to the Museum of the Royal College of Surgeons of England:—"Attention should be bestowed on a set of fœtuses, in early development, dehydrated and treated with caustic alkali so as to show the points of ossification opaque amidst transparent soft parts. Lionel Beale was probably the originator of this method, but Schultze reintroduced it in 1897, and Franklin P. Mall of Baltimore employed it scientifically in 1906. Mr. R. H. Burne, assistant conservator, made a series after Schultze's plan, in the course of the past year—preparations of great beauty. They are mounted in pure glycerine and deserve the attention of all anatomists and curators. It is especially important that Lionel Beale's claim to priority should be borne in mind by his countrymen, as Schultze himself admits it. In his communication, 'Ueber Verstellung und Conservirung durchsichtiger Embryonen zum Studium der Skeletbildung' (*Anatomischer Anzeiger*, vol. xii., 1897) he states that already as early as the year 1853 Beale, and later Theodor Koelliker, had employed similar reagents for the demonstration of points of ossification. Without doubt Schultze has introduced great improvements. The original specimen figured in Beale's 'Microscope in Medicine' lasted for 43 years, and then owing to an accident dried up and was spoilt. The re-arrangement of the pathological series, under Mr. Shattock and Mr. Cecil Beadles, is making great progress; the Museum is enriched by the acquisition of the collection of malformed pelves formerly belonging to the Obstetrical Society of London, and Dr. J. Davis Barris is engaged in taking measurements which will be indicated in print on the pelves when mounted. Mr. Doran is still engaged in the rearrangement and cataloguing of the obstetrical and gynæcological series. The all-inspiring energy of Professor A. Keith, the conservator, has played the chief part in the great progress made in the improvement and enlargement of the Museum of the Royal College of Surgeons so conspicuous of late years." We have much pleasure in endorsing our correspondent's estimate of Professor Keith's labours.

A GERMAN TUBERCULOSIS DISPENSARY.

IN the *Centralblatt für Allgemeine Gesundheitspflege*, Parts I. and II., 1911, there appears the "First Report of the Work of the Municipal Inquiry and Care Centre for Patients with Pulmonary Disease in Dortmund"—i.e., the tuberculosis dispensary of this town. As the procedure and methods differ in essential points from the Edinburgh system a short account may be interesting. The objects of the dispensary are summed up by the writer as a "seeking out of tuberculous disease in its hiding and breeding places by inquiries among families, and ensuring the earliest and most correct diagnosis by modern methods, looking after the housing and food of bacilli carriers who are in an advanced state of the disease, and assisting suspects and mild cases towards recovery by timely use of all available aids to that end, with special regard to prophylactic treatment in children; also coöperation with general practitioners, school doctors, and medical referees, with whom constant communication, both verbal and written, is maintained, coupled with strict supervision of all dispensary patients." The Dortmund Dispensary was started in January, 1908, and the chief sources of income are the municipality, the Westphalian Insurance Office, the Central Committee of Berlin, provident guilds, various manufacturing companies, and private subscriptions. Three rooms only were taken at first, and the management was placed in the hands of the administrative Poor-law officers and the city medical officer. The second assistant medical officer, who is also city bacteriologist, was appointed as attending physician. Two visiting nurses were also appointed. As at the Edinburgh Dispensary, there are consultations by the physician at regular hours, but only for diagnostic purposes, the patients' homes are visited, contacts are examined, and disinfection is performed by the municipal authorities free, but with a charge for carriage of articles to be disinfected of 4*s.* per journey. Patients found suffering from tuberculosis are classified, and suitable cases are sent to sanatoriums, convalescent homes, open-air schools, hospitals, or dispensaries, the various institutions and charities being chosen according to the needs of the patients. These may go direct to the dispensary or be sent by the visiting nurses or medical practitioners, the object being to obtain a diagnosis and advice. The officers and nurses of the dispensary do not undertake treatment. A cardinal point is that they must not interfere with the general practitioner, and no patient already under treatment is accepted unless he brings a note of recommendation from his medical adviser.

No clerical work is done by the nurses. After diagnosis of tuberculous disease the work of supervision is at once begun by the nurses; disinfectants, spit-pots, and advisory leaflets are given out, and if the patients are poor tickets are given for milk and food from the public kitchen; nothing in the shape of medicine is given, but considerable latitude in the distribution of food seems to be allowed. Beds are also let out on hire or lent free of charge—40 such are in use at present—and rooms at 4*s.* rent are hired where required for isolation of poor persons. If landlords have to forego keeping a lodger to make more room they are indemnified for this. All these benefits are made contingent on good behaviour and a strict adherence to the dispensary rules and regulations. When treatment is required patients are referred to the proper quarters, of which there is the usual choice—hospitals, dispensaries, and clubs. The following are some of the statistical figures from April 1st, 1909, till March 31st, 1910: Number of patients, 2025; physical examinations, 683; sputum examinations, 683; Pirquet tests, 291; visits of nurses, 2911; disinfections, 106. Besides a sanatorium, Dortmund has a "forest school" and a children's home. The importance of treating children in the suspected stage is always recognised. In the appendix there is a full statement of income and expenditure. For the above period the former was £740 and the expenditure £677, leaving a balance of £63. Among the items of expenditure the largest was for sending persons to sanatoriums, £302; nourishment, £74; for the two nurses, £95; and an honorarium for the medical officer of £37. The visiting nurses, like the medical officer, are not employed during the whole time by the dispensary, so that it is evident that the Dortmund administration differs in certain points from ours.

PARALYTIC HERPES OF THE CRANIAL NERVES.

SINCE the important researches of Dr. H. Head and Dr. A. Campbell on herpes zoster, the resemblance of that condition to what might be called posterior poliomyelitis, as opposed to the familiar anterior poliomyelitis, has been frequently pointed out. Recent work, more particularly of Dr. Ramsay Hunt of New York, has made it clear that the term might, with equal justification, be applied to zonas that involve cephalic regions. While it is true that the metameric arrangement so characteristic of spinal nerves cannot be demonstrated readily in the case of the cranial nerves, yet the analogy between the ganglia on the posterior spinal roots and those of the cranial nerves is well known. On the fifth nerve there is the Gasserian ganglion, on the nervus intermedius of Wrisberg the geniculate; the ganglia of Andersch and Ehenritter correspond to the ninth or glosso-pharyngeal, the jugular and plexiform to the tenth. Their cells are unipolar and are the nuclei of origin of their respective sensory nerves. The topography of these various nerve distributions is complex, but is being definitely established both by clinical and by experimental research. The main distribution of the fifth is familiar, and of the second and third cervical: between these is an area involving the region round the ear which is supplied by the nervus intermedius, glosso-pharyngeal, and vagus. The geniculate ganglion supplies the concha, tip of the anti-tragus, part of the anti-helix and its fossa; the ninth and tenth supply the posterior portion of the tympanum and external auditory meatus, part of the posterior internal surface of the pinna, and the adjacent mastoid region. The fifth supplies the rest of the tympanum and external auditory meatus. By observing minutely the distribution of the herpetic vesicles it can be determined which nerve or nerves are involved. In *La Presse Médicale* of May 27th Dr. Henri Claude and Dr. H. Schaeffer have published a new case of "posterior poliomyelitis" of the cranial nerves which presents several features of interest. The patient was a young woman of 28, with a characteristic history of malaise, headache, and pain, who displayed a widespread herpes on the left side of the face, head, and neck. Not only were the sensory cranial nerves, fifth, eighth, ninth, and tenth, involved, but in addition there were motor phenomena in the distribution of the third and sixth, motor fifth, and seventh. A careful investigation of the site of the herpetic vesicles showed that the area supplied by the nervus intermedius had escaped. Tinnitus and hypoacousis suggested implication of the spiral ganglion. The explanation of the paralysis of certain motor nerves is more difficult, but the writers incline to the theory of a basilar meningitis, especially since lumbar puncture revealed the presence of a profound meningeal reaction.

THE NEED OF PROPER SANITARY ADMINISTRATION IN EGYPT.

GENERAL regret will be felt at the death of Sir Eldon Gorst, His Majesty's Agent and Consul-General for Egypt. It has occurred, moreover, at a critical time, and in more directions than one his successor will have an arduous task, while as far as sanitary matters are concerned he may have to face a certain amount of inherited responsibility. Especially do we note with some anxiety a recrudescence of plague in Egypt, concerning which we published a letter from a correspondent in our issue of July 8th. Attention was therein called to the fact that plague figures had more than doubled during the first half of 1911, as compared with the corresponding period of 1910. We now find our correspondent's statements confirmed on the spot by an article in the *Egyptian Gazette* of June 27th, which has just reached us. From that article we learn that, according to the last official bulletins, there were 684 cases more in the first half of 1911 than in the same period of last year, and nearly three times as many as in the whole year of 1909, the increase occurring principally in Upper Egypt. As for Lower Egypt, while only 27 cases with 9 deaths are recorded for Alexandria during the half year, it is pointed out that the greater number of these cases have occurred recently. During the week ending June 17th 25 fresh cases of plague developed. The *Egyptian Gazette* complains of the lack of sanitary organisation—bearing out our correspondent's plea for enforcing on the fellaheen certain "necessary precautions and cleansings." Two years ago,[1] in reviewing the second annual report of Sir Eldon Gorst on the progress made in the various departments of the Egyptian Government, we expressed our regret that the prevention of disease was practically ignored therein, and that in its brief observations on the public health reference was made exclusively to the cure of maladies already contracted, none whatever being made to the adoption of sanitary measures properly so-called. It seems probable that the failure to wage successful warfare against plague is due to the recent developments in the government of the country, and medical men will welcome for the public good the hand of a strong administrator as far as sanitary needs are concerned. They may feel confident that Lord Kitchener's *régime* will be begun in full apprehension of the existing difficulties.

THE TREATMENT OF ARTHRITIS DEFORMANS.

Dr. P. W. Nathan of New York has published a series of papers dealing with the etiology and classification of the various morbid conditions of the joints which are usually included, often without much discrimination, within the terms "osteo-arthritis," "rheumatoid arthritis," and "arthritis deformans." He separates all these diseases into two main

[1] THE LANCET, June 19th, 1909, p. 1775.

groups—the inflammations and the degenerations. One large and important section of his degenerative group is that to which he gives the name "metabolic osteo-arthritis." This group includes cases belonging to that type of arthritis in which joints are affected symmetrically and at the periphery first; it is always polyarticular and progressive, leading finally to muscular contraction and deformity. Examination with the X rays shows rarefaction at the ends of the bones the joints of which are implicated. The name given to this group by Dr. Nathan, as also his plan of treatment, is based on the belief that the disease is a degeneration which has its origin in general metabolic and nutritional disturbance. The plan of treatment which he advocates[1] is divided into two stages. In the first stage, which is prolonged until the disease has become quiescent, the patient is kept at rest and receives a nutritious diet with doses of thymus extract. When the disease has become arrested a very gradual return to active use of the affected limbs is begun; intractable deformities are corrected by tenotomy or even osteotomy if need be. The two chief points in this plan of treatment are the administration of thymus extract and the enforcement of absolute rest until the disease has ceased to make progress. Dr. Nathan was first led to try thymus extract by reading of its effects on skeletal development in Basch's experiments; he uses tablets of 5 grains each, giving from two to four three times daily either before or after meals. It must be given continuously for a long period—in some cases for months. Dr. Nathan does not regard thymus extract as a specific, but he claims that his results in the treatment of 186 cases by this method prove that if it is conscientiously taken for a long time, the patient being managed judiciously meanwhile, marked improvement, if not perfect cure, can always be expected. He says that of 18 patients who were helpless and bedridden, eight are walking without stick or crutch and have no pain, and his figures suggest that failure is to be expected in quite a small percentage even of the severer cases. At any rate, he makes out a case for trial of his method.

[1] Journal of the American Medical Association, June 17th, 1911.

THE BRITISH SECTION AT THE DRESDEN INTERNATIONAL HYGIENE EXHIBITION.

AFTER overcoming almost insuperable difficulties the British committee has succeeded in equipping a British section at the International Hygiene Exhibition in Dresden. As we have already stated, the section was opened on June 29th, Professor Renk, the vice-president of the exhibition, representing the administration, and Mr. H. W. Armit the British committee. Among those who were present mention should be made of Dr. J. Honsberger, the delegate of the Canadian Government, Dr. J. A. Murray and Dr. W. H. Woglom of the Imperial Cancer Research Fund, and Dr. W. Yorke of the Liverpool School of Tropical Medicine. The British Legation was represented by Mr. Cardall, and the Consulate by Mr. Bassange. Among the illustrious guests were the delegates of the King of Saxony and of the Saxon Government, the Lord Mayor of Dresden, and many diplomatists. The speeches were brief and only two in number, Mr. Armit offering a welcome to the guests of the committee and Professor Renk responding.

The section has been planned on scientific lines and is distinctly technical. Daily demonstrations, however, will be held which will render the significance of the exhibits intelligible to the masses. The sections consist of the Care of Infants, the Care of the Defective, School Hygiene, Dental School Hygiene, Physical Training, the Control of Food, the Diseases Communicable from Beast to Man, the Diseases chiefly Affecting Man, Tropical Diseases, Cancer Research, the Control of Infectious Diseases, Ambulance and Rescue Work in Mines, &c., the Care of the Sick at Home and also in India and China, Poisons in Food, Industrial Poisoning and Dangerous Trades, Cremation, Housing and Town-planning, Disposal of Sewage and Effluents, Water-supply, Smoke Abatement, and Military Hygiene and General Hygiene.

The Section of School Hygiene, which merges both into that of the Care of Defectives and that of Physical Training, is of vast interest. The Board of Education has set up maps and charts showing the administrative control exercised over the health of the young. The effect of the introduction of the Medical Inspection Act of 1907 is clearly shown, and the distribution of the special schools forms a key to the remainder of the exhibit. Numerous methods of dealing with the defective are exhibited, and in many cases the results of the method employed are pictorially demonstrated. The London County Council has a large and particularly fine exhibit. Every phase of school life, in its relationship to the health and development of the children, is illustrated in a most striking manner. The teaching of trades under favourable circumstances, the organisation of games, and the methods adopted in the open air and other special schools are dealt with in detail. In Edinburgh markedly good results are obtained in the education of deaf mutes by housing them together with normal hearing children. The effect is that the children gain in intelligence rapidly until there is scarcely any difference between the defective and the normal children. Speaking appears to come much earlier than is usual by other methods and the children rapidly become cheery and happy. These results are depicted by the managers of the Donaldson Hospital. Equally interesting are the effects of careful education, care of the health, and physical training on wastrels in the hands of the authorities at Dr. Barnardo's Home. A series of clear photographs show the methods and results in this Home. A dental school clinic, set up under the guidance of the British Dental Association, should demonstrate that every school authority can afford to look after the teeth of the children attending the schools. The total equipment, which is adequate in every particular, costs only £50.

Dr. R. W. Philip has set up an elaborate exhibit illustrating the scheme for the combating of tuberculosis adopted in Edinburgh. The success of this scheme depends chiefly on the care of every patient, no matter what stage of disease he may harbour. By means of tables, charts, and excellent photographs this scheme is rendered clear. The control of milk, as far as tubercle bacilli are concerned and the tracing of possible foci of infection, has received minute attention at the hands of Professor S. Delépine, and his exhibit is a pattern of excellence. From a technical point of view it is difficult to imagine a more wonderful series of large section of lung than those sent by Professor G. Sims Woodhead, dealing with the pathology of the various types of tuberculous affections. His opaque sections, too, which demonstrate the avascular nature of tuberculous lesions, command universal admiration. In the Tropical Section Professor G. H. F. Nuttall's extraordinary collection of disease-carrying ticks, the only complete collection in the world, is set up in such a manner that the student learns much about the ticks and the parasites which each carries. The Liverpool School of Tropical Medicine has prepared a case dealing with malaria, sleeping sickness, yellow fever, myiasis, and three-day fever. The individual items are excellently mounted and the whole is teeming with interest both for the public and for the expert. The Metropolitan Asylums Board has lent some highly interesting models for exhibition. The training ship *Exmouth*, shown in the Section of Physical Training, the North-Western Fever Hospital, the Brook Fever Hospital, and the ambulance steamer are all excellent in their own way. An interesting series of photographs illustrating the life, work, and recreation of the English hospital nurse attracts considerable attention. The pictures have been specially prepared under the guidance of the matrons of several of the large London hospitals, and depict in a most natural manner the nurse performing a number of her duties.

Some peculiar models of Indian hospitals have been lent by the various missionary societies, that of the Peshawar Hospital, that of the Neyoor Hospital, and that of the Union Medical College in Peking being chiefly worthy of notice. An exhibit, in model form, shows a Hindu woman being treated by a native quack under distinctly unhygienic conditions, and a Mohammedan lady being attended to by a crowd of friends and relatives, also under unfavourable

conditions, in contrast with the treatment in a missionary hospital, where modern methods are employed. On the whole, it is apparent from the section that the condition of medical treatment among the native population of India, and to a certain extent in China, to-day is in much the same condition as medical treatment was in Europe some 300 years ago. The Church administers medical as well as spiritual treatment, and even if the medical woman who acts as physician or surgeon possesses the skill and knowledge common to the medical world in the West, the surroundings and the caste difficulties are so great that the comparison with olden times is not quite unjustified.

In the Town Planning Section the various exhibitors have struggled hard with one another in their effort to send the best exhibit. Each in its special way commands a special preference, and each deserves a detailed description or careful study. It is noteworthy that in the Liverpool exhibit the selected insanitary dwellings shown have been completely demolished, and improved dwellings have been set up in their place. In the Manchester exhibit insanitary dwellings are shown which have been saved and rendered hygienic by judicious alterations. In the same way, in the town planning part, some of the exhibitors show ideal plans which appear to have little consideration to the rent necessitated, while others do the best that can be done for little money. In view of the recent discontent in the Bourneville industrial colony the exhibit sent thereof gains in interest not inconsiderably.

The Disposal of Sewage Section teems with interesting material. The methods of disposal are depicted by diagram and by transparency, and a marvellous model of London showing the various levels of the sewers in regard to the river level tells its story more eloquently than any photograph. The immense size of the outfall sewers is shown in photographs by comparison with the size of the workmen busy in them or on them. A highly interesting and important exhibit is that of Dr. A. C. Houston dealing with the analysis of London water and the number of bacteria contained therein. In connexion with this mention should be made of his excellent series of slides illustrating the tracing of anthrax bacilli throughout the sewage, sludge, &c., during an epidemic in Yeovil. The pavilion is lavishly supplied with transparencies which are illuminated by electric light shining through opal glass. The details of each picture are enormously improved by this method of illumination, and the visitor is able to see microscopical appearances clearly without the aid of a microscope.

Only a few of the exhibits have been mentioned, but these few will show that the section contains a great deal of scientific importance and interest, and that it is worthy of careful study. The exhibition will remain open until the end of October and a visit to it will never be forgotten. We propose to publish short descriptions of some of the more important scientific sections of the exhibition in a subsequent number, in order to give the reader some idea of the nature and scope of the undertaking upon which those who have been responsible for it are most heartily to be congratulated.

MEDICINE IN SCANDINAVIA.

No. III.—SWEDEN.[1]

Number of Medical Men.—Medical Education.

SWEDEN, with an area of 170,713 square miles, had at the end of 1909 a population of 5,476,441. The medical men numbered 1502, giving a ratio of 1 to 3646 inhabitants. This relative scarcity of medical men is due to many causes, one of which is the length of the medical curriculum, which occupies on an average eight years. There are two important examinations. Part I. includes anatomy, physiology, chemistry, pharmacology, and histology. Part II. includes clinical medicine, surgery, obstetrics, gynæcology, pathological anatomy, and medical jurisprudence. There is also a special examination in hygiene and syphilis. The cost of the medical education is estimated at £1000. The quality of the teaching is high, and the reputation for professional ability which the Swedish medical men possess is fully deserved.

[1] Nos. I. and II. were published in THE LANCET of July 1st (p. 36) and 8th (p. 114), 1911, respectively.

The Evolution of Medicine in Sweden.

The evolution of the medical profession has followed lines similar to those of other European countries. Before the seventeenth century the practice of medicine was in bad repute, and was largely in the hands of foreign adventurers. In the seventeenth century the profession was represented by physicians whose training was largely academic and unpractical, and by barber surgeons whose calling was a handicraft learnt under a master on the battlefield and in the barber's shop. In 1663 the Collegium Medicorum was founded by the physicians and held an official position as an examining body, and as a body controlling medical practitioners. At about the same time the Societas Chirurgica was founded by the surgeons and existed as a rival of the Collegium until 1797, when the two bodies were united under the title of Collegium Medicum. The first to place the profession on an honoured and scientific footing were Carl von Linné, the botanist, and Nils Rosen von Rosenstein in the eighteenth century, and the standard then set has been at a high level ever since.

Medical Societies.

There are to-day two medical societies. Of these, Svenska Läkaresällskapet is a society devoted chiefly to literary and scientific work. Its origin dates from 1807, when it was formed in Stockholm by seven of the leading medical men of that period. The history of this society, published in connexion with its centenary celebration, is largely a history of the whole medical profession, and it therefore makes interesting reading. During the Napoleonic wars it led a precarious existence, for many of its leading members were obliged to devote all their energies to the training of army surgeons in response to the sudden demands made for Swedish surgeons by the Government. The liberties, too, of the scientific press were much curtailed at this period, and English, French, and other foreign medical books were smuggled into the country only at rare intervals. In spite of these difficulties the society kept its head above water, and its publications during the last century have been both numerous and valuable. Its official organ, *Hygiea*, is a monthly journal which ranks as the best medical journal in Sweden. The society's library is now a large one, and includes 135 periodicals.

Organisation of the Medical Profession.

Allmänna Svenska Läkarföreningen (the General Swedish Medical Association) is a society formed in 1902 to safeguard the professional interests of medical men, its functions as a scientific body being of secondary importance. Its membership in 1910 had risen to 1081, and its branches spread throughout the country. The rules of the association resemble those of the corresponding bodies in Norway and Denmark, their aim being: (1) the maintenance of good feeling between medical men and the furtherance of their social and economic interests; and (2) the cultivation of scientific interests among medical men. It is at present too early to judge of the association's value to the profession, but numbering, as it already does, more than two-thirds of the practitioners in Sweden, it cannot fail to have a far-reaching influence on their future position, and through them on sanitary reforms throughout the country. It is strange that the association should have been formed so much later than similar bodies in Norway and Denmark. It is possible that the need for such a society was less felt in Sweden, where the Svenska Läkaresällskapet already, to a certain extent, protected medical interests, and where there was less competition between the members of the profession than elsewhere in Scandinavia.

Medical Schools.—Government Appointments.

There are three medical schools—Upsala, Lund, and the Karolinska Institute in Stockholm. Government medical officers are numerous and include the following. Inspectors of hygiene for each province, of which there are 24. Under these there are 139 ordinary district medical officers and 162 extraordinary district medical officers. The medical officers of asylums are also Government officials. The salaries of district medical officers range from £180 to £236, and a pension of £222 is given at the age of 60. Although asylums are owned and managed by the State, general hospitals are as a rule erected and maintained by the county councils. The sanitary medical officers of the towns are also appointed and paid by the local authorities.

Campaign against Tuberculosis.—Unqualified Practice.

The tuberculosis campaign is carried on vigorously both by the medical profession and by the nation generally. Large sums of money have been obtained and spent on educative and sanatorium lines. It is a striking feature of the Scandinavian countries that, once the needs for sanitary reforms are clearly proved by responsible men, the work of reform is taken up wholeheartedly by the entire population. As an instance of this may be cited the popularity of the tuberculosis stamps which are affixed to letters, and which are sold in enormous quantities to rich and poor alike for the benefit of the consumptive poor. The "Maiblomst" or May flower (which costs 1 öre to make and 10 öre to buy) is seen everywhere on May 1st, and is a valuable source of income to the tuberculosis leagues.

The campaign against quackery has been fought both by medical men and chemists. A society with its headquarters at Upsala exists for the investigation of secret remedies and the exposure of the more blatant frauds, and under the guidance of Professor Mörner it has become a powerful weapon against the quack adventurer. Details of this society's work have already been given in THE LANCET of August 7th (page 419), 1909.

General Remarks on Medical Education in Scandinavia and other Matters.

Although, as has been shown, there are certain wide differences in the three Scandinavian countries with regard to medical education and conditions of practice, there are numerous features common to all. Thus the medical training is in every case thorough and practical. Sweden's three medical schools all require a high standard of proficiency in their graduates, and the Universities of Christiania and Copenhagen are the only examining bodies in their respective countries. The uniformity of education and graduation which is thus attained compares favourably with the conditions existing in other countries, such as England and the United States, where the value of a medical degree is a variable quantity and a source of mystification to the general public. Special qualifications and diplomas are conspicuous by their absence, but the graduate in medicine may (with certain restrictions) proceed to the degree of M.D., the tests for which are severe, so that its possessors are relatively few in number, and limited mainly to those who are enabled to devote considerable time to research work. The Scandinavian degree of M.D. is therefore far superior to many continental and American degrees.

The right to practise medicine is jealously guarded, and the foreigner who would practise in Scandinavia must either pass the examinations of the respective countries or else practise as a quack at his own risk; and the pitfalls which the paternal Governments of the three countries have prepared for the quack who endangers the lives of patients are sufficiently numerous to make any extensive practice a danger to the unregistered person. Certain few exceptions have, however, from time to time been made in favour of practitioners with foreign degrees wishing to practise without passing the examinations of the country.

In all three countries the Teutonic influence is traceable everywhere, and is far in excess of that of any other country. German text-books are the most popular. Some of the Scandinavian medical journals also give German or French *résumés* of their original articles. Germany, too, is the Mecca of the Scandinavian medical pilgrim, and a course of post-graduate study is frequently taken in Berlin or some other German town. The expenses of such courses are frequently defrayed by travelling scholarships, which are numerous in proportion to the wealth of the Scandinavian countries. Post-graduate studies are also encouraged at home.

The extent to which medical practitioners may advertise themselves varies not only in the different countries, but in Denmark it also varies in different localities, according to the rules of each branch of the Medical Association; but on the whole, greater freedom is allowed than in England; and in Norway, for example, the medical practitioner may advertise in the lay press, publishing his name, his specialty (if any), and his address and hours at home. But if, for instance, he were to advertise himself as a specialist in urinary surgery on the strength of having performed a couple of circumcisions his colleagues would soon take him to task. The freemasonry which exists among Scandinavian medical men is also extended to the stranger, and medical visitors to these northern countries may always be sure of finding that the words "Kollega" and "Kollegialitet" are not merely polite phrases.

The author is indebted to Dr. Buhre, secretary of Allmänna Svenska Läkarföreningen, for much useful information about medical practice in Sweden.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to July 15th (total available for distribution £42,800):—

	£	s.	d.
St. Michael's, Chester-square	672	0	0
St. Peter's, Eaton-square, with St. John's, Wilton-road	462	0	0
St. Mark's, North Audley-street	293	0	0
St. Margaret's, Westminster	160	0	0
St. Mary's, Bryanston-square	157	0	0
St. Paul's, Portman-square	131	0	0
Christ Church, Mayfair	104	0	0
St. Stephen's, South Kensington	96	0	0
St. Bartholomew's, Sydenham	93	0	0
St. Michael's, Paddington	89	0	0
All Souls', South Hampstead	84	0	0
St. John's Presbyterian Church, Forest Hill	77	0	0
St. John's Wood Presbyterian Church	65	0	0
St. John's, Bromley, Kent	59	0	0
St. Saviour's, Cadogan-square	45	0	0
St. Saviour's, Denmark Hill	41	0	0
Dutch Church, Austin Friars	41	0	0
St. John's, Redhill	40	0	0
Hornchurch Parish Church	40	0	0
Metropolitan Tabernacle	40	0	0
Waltham Abbey Parish Church	35	0	0
St. James's, Holloway	34	0	0
St. Mary's, Newington, with St. Gabriel's	34	0	0
Highbury Quadrant Church	31	0	0
St. Mark's, Kennington	29	0	0
St. Agnes, Kennington Park	29	0	0
St. Olave's, Woodberry Down	28	0	0
St. Luke's, Hornsey	28	0	0
St. Saviour's, Brixton	27	0	0
St. German's, Blackheath	27	0	0
St. Olave's, Hart-street	26	0	0
Camden Church, Camberwell	26	0	0
St. George's, Campden Hill	26	0	0
St. Mark's, Surbiton	26	0	0
St. Peter's, Clerkenwell	25	0	0
All Saints', Notting Hill	25	0	0
Trinity Presbyterian Church, Clapham-road	25	0	0
St. George's, Brondesbury	24	0	0
St. Dunstan's, East Acton	24	0	0
St. Andrew Undershaft	23	0	0
Christ Church, Southgate	22	0	0
St. Paul's, Mill Hill	22	0	0
St. Mary's, Cuddington	21	0	0
St. Mary's, Peckham	20	0	0

BRITISH MEDICAL BENEVOLENT FUND.

AT the June meeting of the above Fund 25 cases were considered, and grants amounting to £183 made to 23 of the applicants. Appended is an abstract of the cases relieved:—

Wife, aged 43, of M.R.C.S., L.S.A., who has been incapacitated for some time past and is at present in an asylum. Has supported herself by typewriting, but owing to the removal of her employer has been obliged to accept a very indifferently paid post. Voted £5.

Widow, aged 78, of L.R.C.P. Edin. Only income a small annuity, which is insufficient to meet quite unavoidable expenses. Voted £12.

Widow, aged 39, of M.B., Ch.B. Edin. Lost her husband a few months ago after a long and expensive illness. Income £17 10s. per annum and hopes to support herself and her delicate mother by establishing a small business. Voted £5.

Daughter, aged 66, of late L.F.P.S. Glasg. Has maintained herself for several years by dressmaking, but now, on account of ill-health, is obliged to depend on letting rooms. Is allowed £10 a year by Hutcheson's Hospital. Voted £5.

Widow, aged 53, of M.R.C.S. Quite unprovided for at recent death of husband from new growth and is at present not well enough to support herself. Voted £10.

Daughter, aged 58, of M.D. Edin. Takes boarders if able to obtain them and receives slight help from friends. Voted £5.

Daughter, aged 32, of late M.R.C.S. Gave up a situation as governess a year ago to nurse her father, recently deceased, and spent all her savings on him. Now asks for help to purchase a suitable outfit for another post abroad which she expects to obtain. Voted £10 if situation is obtained.

Widow, aged 43, of L.R.C.P. Is endeavouring to get her two daughters elected to St. Anne's School and asks for a little help towards expenses of canvassing. Voted £5.

Daughter, aged 68, of late M.R.C.S. Supported herself by teaching for 43 years and now only able to do a little knitting. Relieved three times, £36. Voted £12.

Widow, aged 60, of L.R.C.P. Lond. Supports herself by letting rooms, but asks for help towards expenses of training her daughter in domestic economy. Relieved four times, £20. Voted £5.

Daughter, aged 54, of late L.R.C.P. Edin. Has for several years been quite unable to do any remunerative work on account of continued ill-health, and is entirely dependent on two younger sisters who have to support themselves. Relieved six times, £56. Voted £10.

Daughter, aged 58, of late M.D. Edin. Is a governess by occupation, but at present has no post, and endeavours to support herself by sewing. Relieved nine times, £45. Voted £5.

Widow, aged 61, of M.D. St. And. No income; lets lodgings. Children unable to help. Relieved seven times, £84. Voted £12.

Daughter, aged 60, of late M.R.C.S. Is allowed 5s. a week by friends and earns about the same by needlework. Eyesight failing. Relieved four times, £54. Voted £10.

Widow, aged 64, of L.R.C.P., L.R.C.S. Edin. Has endeavoured to support herself since husband's death, 15 years ago, by taking boarders, but is now in bad health, and dependent upon a sister and a daughter who is an elementary school teacher. Relieved four times, £39. Voted £5.

Daughter, aged 39, of late M.R.C.S. For some time had a post as shorthand-typist at an institution, but was obliged to leave when the staff was reduced, and has been unable to obtain another situation. Relieved once, £5. Voted £5.

Widow, aged 65, of L.F.P.S. Glasg. Quite unprovided for at husband's death several years ago, and has tried to maintain herself by nursing, but is in very feeble health. Receives £10 a year from the Hutcheson Hospital and slight help from friends. Relieved seven times, £70. Voted £10.

Daughter, aged 55, of late M.R.C.S. No income; health only allows of occasional light work. Relieved five times, £50. Voted £10.

Daughter, aged 50, of late M.R.C.S. Had to give up a post owing to temporary ill-health and requires a little help whilst seeking fresh work. Relieved five times, £30. Voted £5.

Deserted wife, aged 50, of M.R.C.S. Maintained herself by nursing for some years, but is now in indifferent health. Slight help from daughters. Relieved four times, £13. Voted £5.

Widow, aged 33, of L.S.A. Supports herself by private nursing, but has been incapacitated since a severe attack of influenza four months ago. Three children, of whom two are at St. Anne's School. Relieved three times, £25. Voted £10.

Daughter, aged 70, of late L.R.C.P. Edin. Has maintained herself by teaching for many years. No income. Relieved once, £12. Voted £12.

Widow, aged 60, of M.D. Edin. Has taken resident patients, but now, owing to a breakdown in health, is in serious difficulties. Relieved once, £10. Voted £10.

Contributions may be sent to Dr. Samuel West, the Honorary Treasurer, 15, Wimpole-street, London, W.

THE LONDON COUNTY COUNCIL AND MEDICAL CLINICS.

A SOMEWHAT remarkable report was submitted to the Education Committee of the London County Council on July 19th. It will be remembered that the Board of Education has only sanctioned the existing agreements with hospitals for the medical treatment of school children on condition that grave defects in the present scheme should be remedied. The Children's Care Subcommittee reported on July 19th, mentioning the arrangements that have been made for ensuring that children selected for treatment actually attended the hospitals, and adding that, pending the consideration of other points raised by the Board, the amount of accommodation to be provided by the Council and the institutions to be used were matters which could be settled independently. Accordingly the subcommittee recommended the renewal, subject to the consent of the Board of Education, of existing agreements to provide for the treatment of a maximum of 55,902 children at a cost of £15,264.

The Children's Care Subcommittee gave the following list of institutions proposed to be brought into the scheme, although in some cases the negotiations are not completed:—

North of Thames.	*South of Thames.*
Fulham Medical Treatment Centre.	Woolwich Medical Treatment Centre.
Hammersmith Medical Treatment Centre.	Deptford Children's Health Centre.
St. Pancras Medical Treatment Centre.	Lewisham Medical Treatment Centre.
Islington Medical Treatment Centre.	Camberwell Medical Treatment Centre.
Hackney Medical Treatment Centre.	Bermondsey Medical Treatment Centre.
Poplar Medical Treatment Centre.	Battersea Medical Treatment Centre.
St. Mary's Hospital, Paddington.	Royal Eye Hospital, St. George's-circus.
Charing Cross Hospital.	Belgrave Hospital for Children.
Metropolitan Ear, Nose, and Throat Hospital.	Miller General Hospital.
Hospital for Sick Children, Great Ormond-street.	
Royal London Ophthalmic Hospital.	
The London Hospital.	

The subcommittee claimed that the institutions were so distributed that practically every child (except in ringworm cases) would be able to obtain treatment within two miles of its home. Modifications had also been made to secure that the children should pass through the hospital routine apart from other patients, and that the amount paid by the Council specifically for the services of the medical men should be paid to them.

In the course of an interesting discussion it was stated that those members of the Education Committee who favour the establishment of school clinics had accepted the present proposals as the most satisfactory substitute. An amendment was moved that one clinic under the control of the Council be included in the list of treatment centres in order that there might be a check on the cost of treatment. On the ground that the National Insurance Bill would greatly modify the whole system of medical treatment of school children, and that the Council would be ill-advised, therefore, to set up any official machinery for the conduct of a clinic, the amendment was defeated. The proposed negotiations with hospitals were then agreed to.

At the same meeting of the Education Committee it was intimated that on July 25th the General Purposes Committee will recommend the Council to deal with the vexed question of the relations of the Public Health Department and the department of the medical officer (education) by placing the whole of the school medical work, including the organisation and administration of medical inspection and treatment of children and the work relating to the cleansing of children (with the staff employed on such work) under the direction of the Council's medical officer of health.

ASYLUM REPORTS.

Surrey County Lunatic Asylum at Netherne (Annual Report for the Year 1910).—At this asylum the average number resident was 675. Admissions numbered 264, and of these 96 were males and 168 were females. Forty-three patients were discharged recovered. The deaths numbered 61, and post-mortem examinations were made in 42 cases. It appears that a villa has now been opened for the reception of idiot children, and all of this class have been transferred from Brookwood.

Barnwood House Hospital for the Insane (Annual Report for the Year 1910).—At this hospital the average daily number on the register was 151. Thirty-nine patients were admitted. The discharges numbered 30, and 11 of these were discharged recovered, this being a percentage of 28·2 per cent. calculated on the total admissions, and 47·8 per cent. on the direct admissions. The average duration of residence of those who recovered was 2½ years. The deaths numbered six, the rate calculated on the daily average number resident being 3·9 per cent. Dr. J. G. Soutar, the medical superintendent, writing on the subject of making insanity a ground for divorce, remarks that one of the great aids to recovery was the knowledge that patients possessed that they would on recovery be welcomed back to their old places at home. He feels as a physician that it is impossible in a great many cases to give an opinion as to whether a patient will or will not recover, and that the contemplation of the possibility of the rupture of home ties would add to the misery of most, and deprive not a few patients of their chance of recovery. Dr. Soutar also makes wise remarks upon the necessity for careful scrutiny of the physical condition of mental patients. It is too often an obvious fault in asylum administration that the number of medical officers is wholly inadequate to perform their medical duties, and we are glad to note Dr. Soutar's opinion that properly to carry out details of treatment the same care and consideration is required in the treatment of many mental patients as is demanded from the physician who is treating enteric fever or pneumonia. Of seclusion Dr. Soutar writes that, in his opinion, if it be ordered with the same sense of responsibility which a physician feels when he prescribes a potent drug it is a beneficent mode of treatment. With this we are in entire agreement, and we would hope that in time seclusion should come to be regarded, not as a penal matter, but as a method of treatment of value in appropriate cases.

Worcestershire Asylum, Barnsley Hall, Bromsgrove (Annual Report for the Year 1910).—At this asylum the total number of cases admitted was 171. Of these 68 were males and

103 were females. The average daily number on the register was 532. Of the cases that were discharged 30 had recovered, giving a percentage of 21·1 on the direct admissions. Dr. Percy T. Hughes, the medical superintendent, considers it to be altogether misleading to discharge under the head of "recovered" those patients in whom the acute attack has caused obvious permanent mental impairment and those in whom congenital mental deficiency is evident and forms the basis of the acute symptoms. In the matter of causation Dr. Hughes has found defective heredity in 71·4 per cent. of the direct admissions, a family history of insanity in 28 per cent., and of alcoholism in 13 per cent. Among other causes bodily disorders of various kinds were found to be present in a majority of the cases admitted and were regarded as having a direct influence upon the mental condition. It is very wisely pointed out that "such evidence proves the necessity for submitting every case to a thorough physical, as well as a mental examination ..... in order that suitable treatment of the physical ailment may be undertaken and every opportunity of complete recovery afforded. The moral effect of this system is also of great benefit, as the patients at once recognise that they are not merely 'put away,' but that they are regarded as being seriously ill and therefore sent to receive medical treatment." During the year 66 deaths occurred, and except in three of these cases post-mortem examinations were held.

Kingseat Asylum and Mental Hospital (Annual Report for the Year 1910).—The total number under treatment during the year 1910 was 563. There were discharged 77 persons, of whom 50 were discharged recovered. The admissions numbered 112, and of these 91 were certified as insane for the first time. There were 41 deaths, giving a rate of 9·2 per cent. on the average number resident, and 7·2 per cent. on the total number under treatment. Dr. H. de Maine Alexander, the medical superintendent, points out that "there are few mental affections which are not accompanied by well-defined physical symptoms. In a great many cases the insanity is entirely secondary to some physical disorder, which is really at the bottom of the mental trouble, and whose presence is very often not suspected on account of the mental symptoms filling the picture with their well-known obtrusiveness." Dr. Alexander also notes that in spite of the large amount of liberty extended to the patients and the opportunities afforded by the villa system there was no "escape" during the year. We entirely agree with him that the less restrictions there are about a mental hospital the better, and that the more it resembles a place of detention the more irritating it is likely to prove to the patients.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on July 13th, Sir HENRY BUTLIN, the President, being in the chair.

The PRESIDENT reported the re-election of Mr. C. T. Dent and Mr. G. H. Makins as members of Council, and they were introduced, made declarations in the terms of the oath prescribed by the Charter of 1800, and took their seats in the Council.

The Council congratulated the President on having received the honour of a baronetcy and Sir Anthony Bowlby on being knighted on the occasion of His Majesty's Coronation.

The names of two Members of the College which had previously been removed from the Medical Register were removed from the roll of Members.

Mr. J. Ernest Lane and Mr. Louis Albert Dunn were elected members of the Board of Examiners in Dental Surgery in the vacancies occasioned by the retirement of Sir Frederic S. Eve and Mr. Dent.

The following professors and lecturers were then appointed:—Sir Henry Butlin, two Hunterian lectures on "Cancer." Professor Arthur Keith, six Hunterian lectures on "The Contents of the Museum." Major Herbert C. French, R.A.M.C., two Hunterian lectures on "Syphilis." Mr. R. H. Paramore, one Hunterian lecture on the "Intra-abdominal Pelvic Pressure in Man." Mr. W. Girling Ball, one Hunterian lecture on "Acute Infective Processes due to the Streptococcus, with Special Reference to the Value of Vaccines and Serums in Treatment." Dr. J. W. H. Eyre, one Hunterian lecture on "The Pathology and Diagnosis of Tuberculosis of the Conjunctiva." Mr. H. T. Gray, one Arris and Gale lecture on "The Mechanism and Treatment of Shock." Dr. L. G. Parsons, one Arris and Gale lecture on "The Mechanism and Treatment of Shock." Professor Edward Fawcett, one Arris and Gale lecture on "The Development of the Human Chondro-cranium and Various Cranial Bones." Mr. S. G. Shattock, six Erasmus Wilson lectures on "Advanced Surgical Pathology." Professor Arthur Keith was appointed Arnott Demonstrator.

Sir Henry Butlin was re-elected President, and Mr. C. W. Mansell Moullin and Mr. C. T. Dent were appointed Vice-Presidents.

The next ordinary meeting of the Council will be held on Thursday, July 27th.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Borough of Leicester.—The estimated population of this town for the middle of 1910 was 248,374, whereas the census enumeration amounted to only 227,242. In 1801 the population was 17,005. The birth-rate is steadily diminishing, and fortunately there is almost a corresponding decrease in the death-rate. The infantile mortality, too, is declining, and in 1910 it was only 126·4 per 1000 births. There was no case of small-pox during the year under review, and Dr. C. Killick Millard, in referring to the outbreak of this disease which occurred in London in the early part of 1911, expresses the opinion that had the first case never been vaccinated she would probably have had a more severe, and therefore recognisable, attack.[1] He thinks, too, that it is no longer legitimate to promote compulsory vaccination on the ground that unvaccinated persons are a danger to the community. Rather Dr. Millard appears to consider that it is the once vaccinated who are a danger to the community, inasmuch as modified cases of the disease are difficult to recognise. It must, however, be borne in mind that equally mild cases are sometimes to be observed amongst the unvaccinated, more especially when a mild type of the disease is prevailing. Dr. Millard has, however, no doubt as to the fact that recently vaccinated persons are, for all practical purposes, absolutely proof against small-pox, no matter how intimately they may be brought into contact with the disease. No indication is given as to what is meant by the word "recently," but the German experience teaches us that relatively remote vaccination is proof against the disease. With respect to enteric fever, a chart is furnished showing the fall which took place in the death-rate from this disease between 1898 and 1902, during which time over 5000 pail-closets were converted into water-closets. There was certainly an association in point of time between the two events, but it is doubtful how far they are to be regarded as causally related. There was also a marked fall between 1888 and 1892. As the medical officer of health observes, other factors were operating. However, the evidence of other towns must also be considered, and these data taken together render it probable that part of the fall may have been due to the substitution of water-closets for pails. There is, too, the fact that in Leicester a marked decline in diarrhœa and enteritis mortality took place between 1898 and 1902. Beds have been reserved since 1902 at the borough isolation hospital for the open-air treatment of phthisis, there being now 30 beds thus available. During 1910 there were 119 patients admitted, the average stay being 54·5 days. As regards results Dr. Millard's experience is that of most others who have made similar studies. The immediate results are highly satisfactory. Improved general health and appetite, increased weight and improved appearance; cough, expectoration, night sweats, and pyrexia diminish or disappear; and the physical signs improve. The other side of the picture is seen in the after-results. There is, however,

[1] Dr. Millard deals with this point in a letter in the present issue of THE LANCET (p. 252).

the educational value of the treatment to be considered. Dr. Millard is not prepared to give statistics, although it would seem that, under all the circumstances, they might be obtained as regards the discharged patients of each year. He adds, however, and he has clearly carefully weighed his words in relation to this very serious and responsible question, "I will merely say that inquiries made, say, a twelvemonth after patients have left the sanatorium, show that in more than half the cases treated the disease is recrudescing and the patient losing ground, whilst in some cases the patient will be dead or in a hopeless condition. Inquiries made two years after discharge show a still larger proportion in which the disease is recrudescing, whilst the number who have died will have increased, and so on as time advances." A large proportion of the cases are, he observes, lost sight of. This is a depressing conclusion, but it is, we are afraid, a true one as regards cases which are not carefully selected. The real point is, How far, if at all, are the lives of the patients prolonged and what is the minimum prolongation of life which, in the opinion of reasonable men, will justify the expenditure? Would longer treatment lead to better results and would it be wise to repeat the treatment each winter for a time, to approximate the condition of the poor to that of the rich who winter by winter seek the high altitudes of the Engadine? Dr. Millard is now considering the question of the establishment of a tuberculous dispensary where *inter alia* tuberculin could be employed. There is a milk depôt at Leicester where in place of "humanised" milk as usually supplied at depôts dried milk has been substituted, and this with what are regarded as such eminently satisfactory results that it is estimated that during the current year the receipts will actually equal the expenditure. It has not been found that any untoward results, such as infantile scurvy, accrue from the use of dried milk, which is becoming very popular both with the mothers and the medical practitioners in Leicester. This milk is prepared by being passed over highly heated iron rollers, the milk solidifying in the form of a thin blanket-like veil which is easily pulverised and which keeps readily. In an annotation in THE LANCET of July 8th, p. 110, we referred to the treatment at Leicester of scarlet fever and diphtheria during 1910.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8102 births and 3650 deaths were registered during the week ending July 15th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been equal to 11·3, 11·7, and 12·0 per 1000 in the three preceding weeks, declined again to 11·8 in the week under notice. During last quarter the annual death-rate in these towns averaged 13·8 per 1000, and in London during the same period the mean annual death-rate did not exceed 13·2 per 1000. The recorded annual death-rates in the 77 towns during last week ranged from 3·8 in York, 5·5 in Hornsey, 6·0 in Willesden, and 6·2 in Walthamstow, to 18·7 in Bury, 19·3 in Sunderland, 19·5 in Plymouth, and 19·6 in West Hartlepool. The 3650 deaths from all causes in the 77 towns last week showed a decline of 65 from the number in the previous week, and included 324 which were referred to the principal epidemic diseases, against 268 and 284 in the two preceding weeks. Of these 324 deaths, 136 resulted from infantile diarrhœa, 68 from measles, 45 from diphtheria, 43 from whooping-cough, 19 from scarlet fever, 12 from enteric fever, and 1 from small-pox. The mean annual death-rate from these epidemic diseases was equal to 1·0 per 1000, against 0·9 in each of the three preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had been 70 and 87 in the two previous weeks, further rose last week to 136, and caused the highest annual rates, 1·3 in Liverpool and in Merthyr Tydfil, 1·5 in Bootle, and 1·7 in Southampton and in Rhondda. The 68 fatal cases of measles showed a further decline from the numbers in the 18 preceding weeks; they showed the largest proportional excess in Plymouth, Great Yarmouth, and Wolverhampton. The deaths referred to diphtheria, which had been 21, 35, and 36 in the three preceding weeks, further rose last week to 45, and included 14 in London and its suburban districts, 7 in Leeds, and 4 in Gateshead. The 43 fatal cases of whooping-cough showed a further decline from the numbers in recent weeks; 10 occurred in London and its suburban districts, and 3 in Manchester. The 19 deaths from scarlet fever, including 3 in London and 2 each in Birmingham and Sheffield, corresponded with the number in the previous week. The deaths referred to enteric fever, which had been 8 in each of the four preceding weeks, rose last week to 12. The fatal case of small-pox was registered in Birmingham. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1264 in the 13 preceding weeks, had further risen to 1345 on Saturday last; 204 new cases of this disease were admitted to these hospitals during the week under notice, against 163 and 191 in the two previous weeks. These hospitals also contained, at the end of last week, 804 cases of diphtheria, 397 of measles, 289 of whooping-cough, and 38 of enteric fever, but not one of small-pox. The 983 deaths from all causes in London last week exceeded the low number in the previous week by but 29, and included 119 which were referred to diseases of the respiratory system, against 117 and 102 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 169 and 155 in the two preceding weeks, were last week 194, and 351 inquest cases were registered. The causes of 27, or 0·7 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner. All the causes of death during last week were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Hull, Newcastle-on-Tyne, and in 55 other smaller towns; the 27 uncertified causes of death in the 77 towns last week included 7 in Liverpool, 5 in Birmingham, and 3 in Stoke-on-Trent.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 820 births and 488 deaths were registered during the week ending July 15th. The annual rate of mortality in these towns, which had been equal to 13·3, 14·2, and 14·6 per 1000 in the three preceding weeks, further rose to 14·9 in the week under notice. During last quarter the annual death-rate in these towns averaged 16·7 per 1000 of the revised estimate of their population, and exceeded by 2·9 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during last week in the eight Scotch towns ranged from 9·1 and 11·7 in Leith and Dundee to 17·3 in Greenock and 18·9 in Edinburgh. The 488 deaths from all causes in the eight towns last week showed a further increase of 11 upon the numbers in recent weeks, and included 57 which were referred to the principal epidemic diseases, against 63 and 49 in the two previous weeks; of these 57 deaths, 23 resulted from whooping-cough, 18 from infantile diarrhœa, 6 from measles, 5 from scarlet fever, 4 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·7 per 1000; the mean rate last week from the same diseases in the 77 English towns did not exceed 1·0 per 1000. The fatal cases of whooping-cough, in the eight Scotch towns, which had steadily declined in the six preceding weeks from 43 to 12, rose again last week to 23, and included 12 in Glasgow and 8 in Edinburgh. The 18 deaths attributed to infantile diarrhœa showed an increase of 4 upon the number in the previous week; 7 occurred in Glasgow, 3 in Edinburgh, and 2 each in Dundee, Greenock, and Perth. The 6 fatal cases of measles, of which 5 were returned in Glasgow, were fewer by 8 than the number in the previous week. The 5 deaths from scarlet fever showed, however, an increase upon recent weekly numbers, and included 2 both in Edinburgh and in Aberdeen. Three of the 4 fatal cases of diphtheria and the death from enteric fever were recorded in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 48 and 56 in the two previous weeks, declined to 47 in the week under notice, and were 2 below the number in the corresponding week of last year. Of the 488 deaths

from all causes in the eight towns last week, 148, or 30 per cent., were recorded in public institutions, and 28 were attributed to different forms of violence. The causes of 22, or 4·5 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 581 births and 369 deaths were registered during the week ending July 15th. The annual rate of mortality in these towns, which had been equal to 17·0 and 14·2 per 1000 in the two preceding weeks, rose again to 16·7 in the week under notice. During last quarter the annual death-rate in these towns averaged 17·9 per 1000; the mean rate during the same period in the 77 English towns did not exceed 13·8, and in the eight principal Scotch towns was 16·7 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 20·9 in Dublin (against 11·3 in London), 16·6 in Belfast, 11·6 in Cork, 19·2 in Londonderry, 10·9 in Limerick, and 5·7 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week did not exceed 12·1 per 1000. The 369 deaths from all causes in the 22 towns last week showed an increase of 57 upon the low number in the previous week, and included 35 which were referred to the principal epidemic diseases, against 21 and 22 in the two previous weeks; these 35 deaths were equal to an annual rate of 1·6 per 1000, exceeding the mean rate from the same diseases in the 77 English towns by 0·6. These 35 deaths in the Irish towns last week from the principal epidemic diseases included 15 from infantile diarrhœa, 7 from measles, 4 from scarlet fever, 4 from diphtheria, 3 from enteric fever, and 2 from whooping-cough, but not one from small-pox. The 15 deaths from infantile diarrhœa exceeded by 7 the number in the previous week, and included 5 in Dublin and 9 in Belfast. The fatal cases of measles, which had been 9 and 6 in the two previous weeks, were 7 last week, all of which occurred in Dublin. The 3 deaths referred to enteric fever, 3 of the 4 fatal cases of scarlet fever, and 3 of the 4 deaths from diphtheria, were recorded in Dublin. One death from scarlet fever occurred in Belfast, and one from diphtheria in Dundalk. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 54 and 46 in the two previous weeks, rose again to 52 last week. Of the 369 deaths from all causes in the 22 towns last week, 132, or 36 per cent., were recorded in public institutions, and 12 were referred to different forms of violence. The causes of 12, or 3·3 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·7 per cent. in the 77 large English towns, and was equal to 4·5 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: F. J. A. Dalton to the *Prince George*, on recommissioning; Edward C. Cridland to the *Illustrious*, on recommissioning. Staff-Surgeons: C. C. Macmillan, D.S.O., to the *Gibraltar* and to the *Pyramus*, on recommissioning; Godfrey Taylor to the *Naiad*; C. E. C. Stanford to the *New Zealand*, on commissioning; J. H. Lightfoot to the *Crescent* and to the *Psyche* on recommissioning; G. E. Duncan to the *Crescent* and to the *Pioneer*, on recommissioning; Thomas H. Vickers to the *King Edward VII.*, additional, on transfer of flag; C. B. Fairbank to the *Flora*, on recommissioning; and R. Kennedy to the *Sphinx*. Surgeon: J. S. Orwin to the *Clio*.

ROYAL ARMY MEDICAL CORPS.

Colonel L. E. Anderson, principal medical officer of the Allahabad Brigade, has been appointed Principal Medical Officer of the Bareilly, Garhwal, and Dera Dun Brigades in succession to Colonel M. Kerin, C.B. Lieutenant-Colonel R. W. Wright, at present serving at Shoeburyness, has been placed under orders for a tour of duty in the Northern Army, India. Lieutenant-Colonel W. W. Pike, D.S.O., from the military hospital at Tidworth Park, Salisbury Plain, has taken up duty as Senior Medical Officer at Cairo. Lieutenant-Colonel H. L. E. White has arrived home on leave from Malta. Lieutenant-Colonel M. O'Halloran has been appointed in charge of the Military Hospital at Canterbury. Lieutenant-Colonel J. H. Daly, at present serving at Limerick, has been detailed by the War Officer for a tour of duty in South China. Lieutenant-Colonel L. T. M. Nash, commanding the Station Hospital at Karachi, has been granted six months' leave of absence home from India. Lieutenant-Colonel C. T. Blackwell has taken up duty at Rangoon in command of the Station Hospital. Major E. C. Anderson, D.S.O., has been transferred from Kuldanna to the Fourth (Quetta) Division for the temporary command of the Station Hospital at Karachi. Major B. Watts, at present serving at Campbellpore, has been granted three and a half months' general leave. Major H. B. G. Walton has been appointed Specialist in Advanced Operative Surgery to the Seventh (Meerut) Division of the Southern Army. Major G. St.C. Thom has been granted one year's extension of his Indian tour of service by H.E. the Commander-in-Chief. Major A. W. Bewley, from the Station Hospital at Meerut Cantonment, has taken up duty as Senior Medical Officer at Landour. Major G. J. A. Ormsby has been transferred from Fyzabad to Dinapore. Major J. F. Burke, from Falmouth, has been appointed to the Medical Charge of the troops at Lancaster. Major J. McD. McCarthy, from Chester, on arrival in India has been appointed for duty at Multan. Major C. F. Wanhill, assistant professor of military hygiene at the Royal Army Medical College, London, has been placed under orders for a tour of service in India. Major C. W. R. Healey has arrived home on leave of absence from Nasirabad. Captain J. F. Whelan from Manchester has taken up duty at Nowgong. Captain A. B. Smallman has been transferred from the military hospital at Colchester to Woolwich. Captain W. McConaghy from Birmingham has been appointed to Tidworth Park, Salisbury Plain. Captain M. Dunbar Walker has been appointed Specialist in Physical Training at the Royal Army Medical College, London. Captain F. J. Stuart has been appointed Specialist in the Prevention of Disease with charge of the Brigade Research Laboratory at Fyzabad. Captain C. J. Coppinger has taken up duty in the Irish Command. The following officers have been detailed by the War Office to proceed abroad for duty with the Southern Army in India: Captains J. Tobin, A. R. Greenwood, P. C. Douglass, J. L. Jones, H. A. Bransbury, and A. W. Sampey. Lieutenant A. Shepherd from Agra has joined for duty at Landour. Lieutenant D. S. Buist, from the Royal Victoria Hospital at Netley, has been appointed to the Station Hospital at Quetta.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions:—Lieutenant-Colonel Harold Hendley to be Colonel (dated April 7th, 1911). Lieutenant-Colonel Robert Bradley Roe to be Colonel (dated April 30th, 1911). Colonel Roe's tenure of appointment will reckon from May 6th, 1911.

The promotion of Major T. S. Novis is antedated from July 27th, 1910, to Jan. 28th, 1910.

The King has approved of the retirement of Colonel William O'Hara (dated June 7th, 1911), and Lieutenant-Colonel John William Rogers (dated July 5th, 1911).

Colonel H. Hendley has been appointed Principal Medical Officer of the Sirhind and Jullundur Brigades, Third (Lahore) Division, in succession to Colonel A. M. Cofts, appointed Principal Medical Officer of the Second (Rawal Pindi) Division. H.E. the Governor of Bombay in Council has appointed Lieutenant-Colonel J. G. Hojel to officiate as physician to St. George's Hospital at Bombay during the absence on leave of Lieutenant-Colonel M. A. T. Collie. Lieutenant-Colonel W. Ronaldson Clarke has taken up duty at Lahore Medical College as Civil Surgeon and Professor of Forensic Medicine in succession to Colonel Hendley. Lieutenant-Colonel A. H. Nott, Bengal Presidency, has arrived home on leave of absence from India. Major A. F. Stevens, civil surgeon of Murshidabad, has been appointed Civil Surgeon at Hazaribagh. Major H. F. Knapton has been granted 35 days' privilege leave. Major R. H. Maddox has

been selected to succeed Captain E. P. O'Connor as Civil Surgeon at Gaya. Major B. R. Chatterton, civil surgeon at Muzaffarpur, has been granted seven months and nine days' leave of absence home from India. Major J. A. Black has been confirmed in the appointment of Chemical Examiner, Punjab, and Professor of Chemistry in the Medical College, Lahore, by the Home Department, Government of India. Major C. A. Lane, on return from leave, has been appointed Civil Surgeon at Murshidabad, in succession to Major J. G. P. Murray. Captain W. G. Hamilton has been succeeded as Superintendent of the Central Jail at Midnapore by Captain F. H. Salisbury. Captain H. M. Inman has been appointed to officiate as Civil Surgeon at Jacobabad. Captain S. J. Bathena has taken up duty under the Jail Department in the Bombay Presidency. Captain N. S. Simpson has been selected to succeed Captain L. Reynolds as Medical Officer of the Lawrence Military Asylum, Sanaway, Punjab. Captain E. Bisset has been placed on plague prevention duty in the Meerut District. Captain E. P. Wernicke has arrived home on leave of absence from India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Major Edward C. Thompson relinquishes his commission (dated July 15th, 1911).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Yorkshire Mounted Brigade Field Ambulance, Royal Army Medical Corps: Thomas Edmund Lister to be Lieutenant (dated June 1st, 1911).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 11th, Inspector-General W. H. Lloyd, R.N., in the chair, the sum of £35 was distributed among the several applicants.

UNITED SERVICES MEDICAL SOCIETY.

The annual general meeting of this society was held at the Royal Army Medical College under the chairmanship of Colonel Sir David Bruce, C.B., F.R.S. The secretaries reported that the balance credit of the society had increased by £5, but that owing to increased expenditure on the publication of the Transactions it would be necessary to obtain more members to keep the society on a sound footing. During the past year there had been nine meetings, at which 17 papers were read, and the policy of the secretaries had been to emphasise the military character of the society, since it was felt that there was already an abundance of purely medical societies. The following officers were elected:—President: Major E. B. Waggett, R.A.M.C.(T.). Treasurer: Major S. Lyle Cummins, R.A.M.C. Members of Council: Staff-Surgeon Dudding, R.N., Major C. E. Pollock, R.A.M.C., Lieutenant-Colonel P. J. Freyer, I.M.S. (R.), and Lieutenant-Colonel E. Lloyd Williams, R.A.M.C. (T.). On the motion of Lieutenant-Colonel Sir William Leishman, R.A.M.C., a hearty vote of thanks was passed to the retiring officers, especially the President, Colonel Sir David Bruce, and the treasurer, Lieutenant-Colonel J. B. Wilson, R.A.M.C. Colonel Sir David Bruce, in reply, referred to the work on preventive medicine as the most important part of the duties of service medical officers. As instances of the value of such work he pointed to the almost complete abolition of Mediterranean fever from the garrison at Malta; this represented a saving which, capitalised, amounted to a gain of something like 1½ millions sterling for an expenditure of about £5000. The work on enteric fever had resulted in a reduction of the incidence in India from 15·6 per 1000 five years ago to a present rate of 4·6 per 1000. This was due to inoculation, segregation of carriers, and improved methods of disposal of excreta, all of which had been indicated largely as a result of researches by medical officers. The saving of lives alone in India must represent a capitalised value of more than 1½ millions. Such economies as these could be obtained in no other sphere of work, and he urged medical officers to devote more and more of their time to prevention and research. At the present time the problem of the prevention of malaria in our tropical garrisons was a subject calling urgently for solution.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—What is adequate remuneration? The question will have to be asked, and its reply will contain the future of the profession, which is a matter of more vital moment to the nation than the fate of any Bill, howsoever beneficent, and which should be the first care of the State. Much irrelevant discussion of impossible terms might have been avoided had that inevitable question been asked in legitimate course of our accredited authorities. Would the Church or the Law ever have been offered the slur of a commandeering of the services of their irresponsible units at a wage not previously discussed with their constituted governing bodies? In principle the State cannot negotiate matters of professional and public interest with individuals or on the basis of individual circumstances. Any attempt, both unbusinesslike and, with all reservation for the best intentions, inequitable, to enter into any such irregular conversations should not have been entertained, but referred to the proper quarter. Much credit and much time have been lost. At any rate, a short respite has been gained—to ponder upon the significance of that official manœuvre and over the error of our tactics in meeting it.

Is the future health advantage of the masses, for which hitherto we alone have toiled and paid, to be constructed upon the basis of our past charities to them and to the State? Where does our own future come in, which should be the State's first concern? And what, too, of the repayment of those long arrears, when we stood vicariously for it *in loco parentis* towards them, and in a unique position among all professions, as contributing to the State unlimited treasure in lives, in efficient health, and in productive labour? Shall we put our own seal to a deed of perpetual sweating, presented to us ingeniously in belated acknowledgment of a long course of free giving? The State has forgotten, it could hardly repudiate, its obligation; and the rank and file of the profession are being mesmerised into forgetfulness over the Chinese puzzles which have been cast at them. Meanwhile we are still waiting for the main answer from the appointed guardians of our status as a profession.

What is the irreducible minimum compatible with the claims of our great past and with the greater claims of our future? It belongs to the honour of the profession not to recognise any of the baser coinage. The Westminster Division of the British Medical Association was the first to assert that essential principle in a resolution passed two months ago as the only safeguard against the official debasement threatening an order which had hitherto been free to pity rather than to resent. In practical terms of the situation, free scope should be afforded to the discussion of figures with any Local Health Committee in those districts which may opt for a basis of "remuneration for services rendered"; the profession cannot be committed by any individual negotiations special to localities. But in others, where it would become irretrievably committed, on the basis of a *capitation fee*, under a direct compact with the State, the irreducible minimum should be half-a-guinea, with faculty to claim more, if justifiable, but under no condition less. That resolution, which has been adopted by other divisions, stands, and any settlement on meaner terms could not receive the sanction of a unanimous profession.

I am, Sir, yours faithfully,

WILLIAM EWART,

Formerly President of the Westminster Division of the British Medical Association.

The Athenæum, July 13th, 1911.

To the Editor of THE LANCET.

SIR,—I desire to bring to the notice of the profession the paramount importance of the *Local Medical Committees*. Their importance unfortunately seems to be improperly appreciated. Thus with regard to Clause 14, the amendment agreed upon by the British Medical Association reads as follows:—

Every approved society and Local Health Committee shall ..... make arrangements with duly qualified medical practitioners in accordance with regulations made by the Insurance Commissioners.

What an immense difference it would have made to the profession had the clause read as follows:—

Every approved society and Local Health Committee shall ..... make arrangements with duly qualified medical practitioners *through the Local Medical Committees in each local area.*

As the clause stands (as agreed to by ourselves) it provides that *local individual competition* (cutting remuneration down to the lowest possible point) will take place in every local area, whilst our liberty of action is given into the hands of the Insurance Commissioners.

Not content with this restriction of our freedom, and apparently without trying to obtain *the power of bargaining* between the Local Health Committees and the Local Medical Committees, the Chancellor has been permitted to frame the following, so that where individual competition fails (from the loyalty of medical men to each other), then the introduction of "whole-timers" may be brought into local areas in order to cut down remuneration or resistance. Hence the following:—

If the Insurance Commissioners are satisfied that the practitioners ..... are not such as to secure an adequate medical service in any area, they may dispense with ..... the adoption of such system ..... and authorise the (health) committee to make ..... other arrangements.

Thus whilst the Bill makes no mistake in providing for adequate medical service, the question of adequate medical remuneration is entirely ignored. In other words, the astute Chancellor gets his Bill, and we are to fight locally (as individuals, not as a local executive) for adequate remuneration. But as the Local Health Committees have to pay half of any extra remuneration (above the 6*s.* capitation fee on which the Bill was founded) out of the already overburdened local rates, it naturally follows that the competition of "weaker professional brethren" or of "whole-time" men will be exploited to the utmost.

I am glad to say that at my suggestion the Newcastle-on-Tyne and Gateshead executive have adopted the following amendments as their policy with regard to this point in the Bill. And as these amendments would put us into a position to resist local sweating and inadequate remuneration, and as they would give us the power of bargaining locally, I strongly commend them to the notice of every practitioner and of every branch of the Association. They read as follows:—

1 *Clause 14.*—Every Local Health Committee shall, for the purpose of administering medical benefits, make arrangements with registered medical practitioners, *on terms approved by the Local Medical Committee*, for insured persons entitled to such benefit.

2. *Clause 44.*—The Local Medical Committee shall be elected by the registered medical practitioners practising in each local area, and shall arrange, in conjunction with the Local Health Committee, all matters affecting the arrangements with registered medical practitioners to give attendance and treatment to the insured.

Given the £2 wage limit the above amendments would tend to meet the just and reasonable requirements of the profession. Without them there will, I fear, be inadequate remuneration, and little security or peace in the local areas.

I am, Sir, yours faithfully,

T. M. ALLISON, M.D. Durh.

Newcastle-on-Tyne, July 15th, 1911.

To the Editor of THE LANCET.

SIR,—Will you permit me to urge all medical men who have not yet signed the declaration sent out by the Medical Association to do so without delay? Letters have appeared stating that some medical men do not care to sign until they know the conditions under which they serve, but, Sir, then it will be too late. What we want is a united profession to make *our own* conditions. If the profession does not stand solid now they will never have another chance of making a successful stand against the evils of club practice. We have to consider not only the financial side but the standing of the profession in the eyes of the public.

I am, Sir, yours faithfully,

Isle of Wight, July 14th, 1911. C. G. BRODIE, F.R.C.S.Eng.

THE POSITION OF THE PRESENT REFORM MOVEMENT IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—Any statement by Dr. J. F. W. Silk on the proposed legislation with regard to anæsthetics is well worthy of consideration. But it is generally acknowledged that the public stand in need of some protection. Vendors of poisons are required to be qualified for their position; how much more should the administrators of anæsthetics be highly trained? Sir Frederic Hewitt's scheme appears to be a very moderate one, and his persistent advocacy has made it acceptable to large numbers of the profession. Any seeming lack of enthusiasm is, in my opinion, due to the fact that the passing of the measure is a mere matter of time, and is in no sense due to indifference to the question.

I am, Sir, yours faithfully,

Dublin, July 15th, 1911. GEORGE FOY.

To the Editor of THE LANCET.

SIR,—It is satisfactory to find from Sir Frederic Hewitt's courteous reply to my letter that there are so many points on which we fully agree. He puts my first point even a little more strongly than I did—viz., that there are far more anæsthetic fatalities under registered than under unregistered administrators, and that there would be very little gained by the passage of an Act which would protect the public against the latter class of practitioners only. Of course, I also agree that if there is to be legislation on the subject at all it should commence by rendering it illegal for unqualified persons to administer such potent drugs except under the immediate supervision of a qualified medical man.

There is a third point on which I know from the memorandum published in Sir Frederic Hewitt's paper in THE LANCET that we are agreed, and that is in lamenting that there are at present no reliable statistics as to the proportion of deaths under anæsthetics to the number of administrations thereof, either in some of our large hospitals or in private practice, but in this matter I understand that a change for the better has already commenced in the hospitals.

We come next to the two matters on which I am obliged, with much regret, to differ somewhat from Sir Frederic Hewitt. When I was investigating this matter some three years ago for one of the medical journals, what I may call the personal factor was not neglected. What I found was that at the hospital where fatalities had been numerous, recently qualified students, who had mostly attained the rank of house physicians and house surgeons, were called upon, in the absence of the appointed anæsthetists, to act as administrators, while at another hospital some of the same class of recently qualified men were appointed assistant anæsthetists. The difference did not seem to me sufficient to account in any way for the increased mortality, and I hope Sir Frederic Hewitt does not mean us to apply to the former class the teaching of science with regard to properly educated and qualified persons who "use these drugs in such a way as to transgress the laws which are now known to be essential for safe anæsthetisation"? With regard to what Sir Frederic Hewitt is pleased to call the methylated chloroform *bogey*, he will find, I believe, that its influence has spread not only over the United Kingdom, but to our colonies. Last year I paid a flying visit to Sydney and New South Wales, and found that both in the fine up-to-date Sydney Hospital and also in a small private hospital 150 miles up the country in the Blue Mountains only Burroughs and Wellcome's pure chloroform was used.

Sir Frederic Hewitt has, of course, before adopting methylated chloroform in his practice, well considered the arguments against it, but I cannot tell whether his attention has been called to some experiments made by Dr. du Bois-Reymond in conjunction with a French chemist, M. Pictet. Pictet believed that the only way to get a perfectly pure chloroform was by repeated freezing of ordinary chloroform. The mother liquid from which the chloroform has been frozen out resembles chloroform physically, but contains residues which, according to du Bois-Reymond, differ considerably physiologically and have a deleterious effect upon the organism. As to what these impurities or residues consist of, nothing appears to be known, but it is possible that they are composed of bodies possessing a profoundly depressant action on the heart. Du Bois-Reymond adds that the amount of impurities is slight, but though minute, they act strongly when dissolved in chloroform and their presence is enough seriously to affect the person or animal inhaling them. In the same annotation in the *British Medical Journal* (Feb. 15th, 1908, p. 405), in which these experiments are referred to, it is stated that Dudley Buxton has pointed out that methylated spirit is very difficult to purify, and is liable to contain by-products such as chlorinated oil, &c.

This question of the danger of using methylated chloroform was first raised, it must be remembered, in the coroner's court, and I hope Sir Frederic Hewitt will agree with me in thinking that neither the coroner's court nor a committee of the House of Commons is the most suitable place for such a discussion. Let both sides, I would suggest, be heard before a section of the Royal Society of Medicine, or let the General Medical Council give a definite pronouncement on the subject, and the bogey, if it be found to be one, will be set at rest for ever.

I am, Sir, yours faithfully,

July 15th, 1911. H. NELSON HARDY.

VACCINATION IN REGARD TO LIFE ASSURANCE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 17th Mr. W. H. Jalland has a thoughtful article under the above title which I have read with interest. As he refers to the remarkable experience of Leicester in regard to small-pox, for which town I have been medical officer of health for ten years, I should like to make a few observations. Mr. Jalland has not got the facts as to Leicester quite correctly. He speaks as if there had only been two epidemics, those of 1892 and 1903, since compulsory vaccination was abandoned 28 years ago, whereas there was a third epidemic in 1904 with a further 321 cases. In addition to these epidemics there have been repeated minor outbreaks due to importations. Thus in 1902 there were seven separate outbreaks, resulting in 18 cases. It is very evident, therefore, that the Leicester experiment has been very thoroughly tested, and it is a little surprising that the lessons to be learnt from it—so totally different from what was confidently predicted—have received so little attention. It cannot be denied that they have a most important bearing upon the subject Mr. Jalland discusses.

The real question at issue is briefly this:—It is obvious that infantile vaccination is falling more and more into disuse—Does this fact and the existence of an increasing proportion of unvaccinated persons in a community necessarily involve, *under present-day conditions in this country*, an increasing risk of small-pox mortality? The orthodox answer of the medical profession is, "Most certainly, yes." But the arguments upon which this answer is based are all of a more or less theoretical or indirect character, and I venture to submit that, convincing though they may seem *a priori*, they ought not to have the same weight attached to them as to the definite results of a crucial experiment, such as has been carried out in Leicester. We have in Leicester a large industrial town, with over 200,000 inhabitants, which has so completely set the vaccination laws at defiance that in the past 28 years, whilst there have been 155,880 births, only 19,562 vaccinations have been registered—i.e., 12·5 per cent. At the time of the last two epidemics the vast majority—say, 80 or 90 per cent.—of the school children in the town were unvaccinated, together with a large number of the young adults employed in the factories. Small-pox has been repeatedly introduced into the town. It has three times succeeded in establishing itself in epidemic form. In one epidemic as many as 50 cases occurred in one week, and as many as 150 in a period of four weeks. Yet the disease has never "caught on" amongst the unvaccinated section of the community, nor has it ever been necessary during my term of office to close a school on account of small-pox. Surely such an experience would be impossible if orthodox theories about the danger of the spread of small-pox amongst unvaccinated persons were correct.

Mr. Jalland refers to and quotes "missed" cases of small-pox as "an interesting point showing how epidemics may spread." This has been precisely our trouble in Leicester. It is the "missed" cases which have baffled us and done the mischief, just as was the case with the recent unfortunate outbreak in the Mile End Infirmary, where a "missed" case of small-pox in a child of 12 years, Annie L——, was treated for a fortnight in the general wards instead of being sent to the small-pox hospital, with the result that a serious outbreak occurred. But Mr. Jalland omits to state—probably he does not realise the importance of the point—that these "missed" cases, with all the mischief which results from them, are *essentially a product of vaccination*, for they occur far more frequently amongst persons who have been once vaccinated than amongst the unvaccinated; the explanation being, of course, that vaccination after it has ceased to protect against an attack of small-pox still has the power of modifying, and thereby masking, the disease. So much is this the case that small-pox in vaccinated subjects may easily baffle the most expert diagnostician, much more so the general practitioner. The child, Annie L——, referred to above, who caused the outbreak in the Mile End Infirmary, directly resulting in 30 cases with eight deaths, *was a vaccinated case*. Will anyone assert that it is probable the same unfortunate mistake would have been made if this child had been unvaccinated? Hitherto this characteristic of vaccination in modifying small-pox has only been looked at from the narrow point of view of the person attacked. We are only now beginning to consider that from the broad point of view of the prevention of disease by the modern methods of notification and isolation this characteristic, hitherto regarded as an advantage, *is really a most serious drawback*. I submit that the extent of this drawback is not yet fully appreciated. Mr. Jalland, in referring to the Leicester system, speaks as if "contacts" were still removed from their homes for purposes of quarantine. This was formerly practised, it is true, but has never been resorted to during my term of office. There is little occasion for it where contacts can be persuaded to be vaccinated promptly, or, even though they refuse, provided they are paid to stay at home and are visited daily. Nor is the Leicester system an expensive one, as is so often urged against it. On the contrary, I submit that it is *far cheaper* than a system of universal vaccination and revaccination (followed by a third vaccination of all males as in Germany) would be. Space forbids me to enter into this here, but I am quite prepared to justify my statement.

The Leicester experiment is about as conclusive as the experience of any one town can be. It has now lasted for a quarter of a century. It is confirmed by the more recent experience of the country generally, where an increasing neglect of vaccination has not been followed by any evidence of an increase of small-pox mortality. I have thought about this question for a good many years, and I may claim to have had some little experience of the subject, having been in the Birmingham epidemic of 1893–94 before I came to Leicester. One hesitates to speak out about such a burning question as vaccination, and one realises, of course, the great gravity of the issues at stake, but I wish to say frankly that in my judgment the only evidence that can reasonably be set against the evidence of Leicester is (1) the breakdown of the "Leicester system" in Leicester itself, or (2) its breakdown in some other town *where it has been fairly tried*. This evidence is not yet forthcoming, and until it is the experience of Leicester cannot be ignored. In conclusion, to prevent misunderstanding, let me say that no medical man who knows the subject believes more strongly than I do in the power of recent vaccination to confer temporary immunity against small-pox. I regard vaccination as the greatest triumph of the science of preventive inoculation, and I would never dream of attempting to fight small-pox as a medical officer of health without its aid. Moreover, if small-pox in any community once *really* got out of hand I would be prepared to advise without hesitation the immediate vaccination of the whole community; and if it were not for the unfortunate prejudice—engendered by the almost cruel and bigoted persecution of anti-vaccinators in the past—such a wholesale vaccination, as a *dernier ressort*, would be quite practicable. It was done in Glasgow not so many years ago. It would cut short any epidemic in three weeks. But I believe that the necessity for such a step would rarely, if ever, occur if the methods adopted in Leicester were fairly tried, and especially if it were freed from the very serious handicap, under which it at present suffers, of having amongst its population a large number of once vaccinated—i.e., partially vaccinated—persons. I believe that this country has now reached such a state of public health efficiency that it will be found to be possible to control small-pox satisfactorily (i.e., quite as well as has been possible in the past, when vaccination alone was depended upon) even though compulsory vaccination has become a thing of the past. There are, no doubt, weak spots here and there, but it must be our business to strengthen these. Of this I feel certain, and I believe many others are coming to think the same, that as time goes on we shall come

to depend more and more upon such measures as notification, isolation, and supervision of contacts, &c., rather than upon infantile vaccination of the general population. The future lies with the medical officer of health rather than with the public vaccinator.—I am, Sir, yours faithfully,

C. KILLICK MILLARD, M.D., D.Sc. Edin.,
Medical Officer of Health.

Town Hall, Leicester.

THE RESOLVING POWER OF THE MICROSCOPE.

To the Editor of THE LANCET.

SIR,—Mr. A. S. Percival questions the utility of continuing the discussion in THE LANCET of the accuracy of the formula relating to the resolving power of the microscope in view of the intricate nature of this subject, and I think he is right, since to arrive at a final solution it will be impossible to exclude lengthy mathematical arguments, which are not likely to appeal to many readers of THE LANCET. Under these circumstances I will endeavour to arrive at an acceptable solution of the question which has arisen through the medium of direct correspondence with Messrs. Percival and Whittaker. Perhaps we may in this way succeed in removing the existing difference of opinion, and in that case I would suggest that the result of our discussion may be communicated to the readers of THE LANCET.

In the meantime I will content myself with the statement of the following bare facts without reference to mathematical argument or to the diffraction theory: (1) The formula $d = \frac{\lambda}{a}$ is undoubtedly correct when we are concerned with the separation of the consecutive bars of a grating (indeed, it holds good when a telescope is brought to bear upon celestial objects presenting features of the nature of a grating, such as the canals of Mars); (2) similarly, the formula $d = 0{\cdot}61\frac{\lambda}{a}$ is correct when a telescope is employed to resolve the distance between two stars, as in the case of doubles. On the other hand, no serious student of optics will dispute the fundamental identity of the *modus operandi* of the telescope and the microscope. We need only remember that we have telescopes to view objects close to their objective, and again, that there are microscopes for viewing comparatively distant objects, and this suggests the possibility and necessity of dealing with the resolving power of these two instruments, and for that matter of all optical instruments, by adopting the same reasoning throughout.

In contrasting these two formulæ it behoves us, however, to bear in mind that it matters greatly whether the details which are to be resolved are of the nature of periodically recurrent structures, or whether they consist merely of two isolated elements. The formula quoted by us, viz., $d = \frac{\lambda}{a}$, applies to periodically recurrent features, such as occur very frequently in natural objects, for instance, butterfly's scales, diatoms, &c. The same formula applies, however, very approximately also to objects of any structural arrangement.

In conclusion, it may be useful to recall the well-known fact that the resolution of adjacent elemental features and the mere act of bringing them into view are by no means synonymous, for it is possible to bring into view extremely small granules or filaments, such as bacteria and their flagelle, whose dimensions may be much smaller than the limit of resolution of a grating. This result is solely a function of the defining qualities of the lenses, the sensibility of the retina of the eye, or the photographic plate, as the case may be, and, above all, of the contrast in the illumination of the small objects relatively to their surroundings. It is precisely this last-named artifice which is the underlying principle of the methods of dark-ground illumination and ultra-microscopic observation.

I am, Sir, yours faithfully,

July 5th, 1911. E. LEITZ.

To the Editor of THE LANCET.

SIR,—I am afraid that I have failed to make my point about the formula for resolution as clear as I should have done. The resolving power of a microscope means its power of resolving two adjacent points, and I gather from his letter that Mr. Leitz now admits that the formula $\frac{0{\cdot}61\lambda}{a}$ is correct when two points only are considered. But Mr. Leitz proceeds to say that if the details which are to be resolved are of the nature of periodically recurrent structures the formula $\frac{\lambda}{a}$ is applicable. This is practically the formula that is used to determine the wave length of light with a diffraction grating (it is well known that the number of lines in a grating affect only the purity of the spectrum), but it is not the correct formula for the resolving power of a microscope, which is, as Dr. Whittaker insists, obtained by introducing the constant 0·61. This is rendered necessary by the consideration of an important mathematical point that was brought out by Sir George Airy, Lord Rayleigh, and Abbé, but was omitted in the incomplete methods used by Drude and others.

The remark that has been applied to Abbé might perhaps be also applied to the other authors I have quoted—namely, that it is necessary to "assume a very high degree of physical and optical insight in his readers"; and that these papers "have in consequence been misunderstood and misinterpreted in all sorts of extraordinary ways by critics falling below the assumed standard of knowledge" (Spitta's Microscopy, p. 401). Without such knowledge it is useless to try to follow the reasoning that has led to the substitution of $\frac{0{\cdot}61\lambda}{a}$ for $\frac{\lambda}{a}$ in dealing with the resolving power of the microscope. I am, Sir, yours faithfully,

July 11th, 1911. A. S. PERCIVAL.

*** Mr. Leitz's letter, it will be seen, was sent to Mr. Percival for his consideration.—ED. L.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—Salvarsan is now universally recognised as an important factor in the treatment of syphilis, and although it may not altogether supersede the older methods of treatment, it must be admitted that a welcome advance has been reached. The celerity with which buccal lesions yield to its administration is nothing short of a revelation. It is no uncommon thing for mucous patches of tonsils, lips, and tongue to disappear within a week under its action. Forty cases of syphilis have been treated by this agent within the last five months at the Liverpool Royal Infirmary (Department for Specific Diseases). The cases included the three stages of the disease, ranging from infections of from two months to 12 years. At first the salvarsan was administered intramuscularly into the upper and outer margin of the gluteus maximus, afterwards the intravenous method was employed. The median basilic was found to be the most convenient vein to convey the solution. As far as my experience of both methods of administration goes, I have found that the results are very similar; the advantage of the intravenous over the intramuscular consisting in its comparatively painless action. The first case (intramuscular), on Jan. 25th, was that of a young man, aged 20 years, suffering from mucous patches of the soft palate, tonsils, and base of the uvula, following an unhealed primary lesion of the inner surface of the prepuce. On Feb. 3rd the mucous patches had all cleared up. The sore had also cicatrised. So far, in his case, there has been no relapse. Case 2: Indurated sore on the sheath of the penis; papular eruption on the chest, abdomen, legs, and forehead; mucous patches of the right tonsil and sides of the tongue. Within ten days the mucous lesions had all cleared up. The skin eruptions, which were the last to disappear, had faded away within a fortnight. The patient was sent to me by Dr. G. S. Wilde of Bootle, and proved a most interesting case. Case 3: A young married woman, suffering considerable pain in the mouth due to irritating mucous patches of the tonsils, tongue, and lips. All the lesions cleared up within a week, "as if by magic," to make use of her own expression.

There is no need to multiply the early cases of secondaries in which the salvarsan was used; all, with one exception, and in that a very slight relapse, followed much the same

benign course. A noteworthy case was an early perionychia (five months' infection), in which four fingers on one hand and one toe were affected. The inflammation at the base of the nails was considerable, involving the greater part of the fingers and toe and causing much pain. On Feb. 3rd I administered an intramuscular injection. On Feb. 20th all the inflammation had subsided, leaving the fingers and toe quite normal. The nails had nearly all separated and a new growth was visible. The patient had also had some mucous patches on the lower lip, which disappeared at a much earlier stage.

Another very interesting case was that of a man 40 years of age, suffering from a gummatous syphilide of the mouth (12 years' infection), giving rise to much destruction of tissue at the angles of the mouth and lower lip, causing disfiguration and contraction of the mouth. A very satisfactory improvement (by the same means) was visible in a few days. The ulcerative and degenerating processes were arrested, cicatrisation following kindly. The patient was a week in the isolation ward, and returned to his home in the country very pleased with the improved appearance of his mouth, which on admission to hospital was revolting to look upon. He wrote to me recently saying that he had had no relapse so far.

In three very distressing cases of leucoplakia (all of some years' duration), in which the tongue presented a very angry appearance, the changes which had taken place in the submucous tissue caused the affected part to become more prominent and nodular. In two of the cases the fissures on the dorsum and sides of the tongue, with the loss of pliability of the organ due to its hypertrophied condition, caused the patients much distress and sensitiveness to hot fluids and spicy food. Within a week of the administration of salvarsan the improvement was marked in all three cases. One of the patients said that he "could now eat a brick." The first of these three cases had a slight relapse two months after the intramuscular injection when it was thought wise to give him a second dose, which was intravenously administered. I saw this man at the department in company with Mr. F. P. Wilson on July 5th, and the tongue then presented a very satisfactory appearance; the fissures at the sides of the tongue had all disappeared, and he said he could now eat with comfort. In three cases of hoarseness due to some secondary lesion of the vocal cords, the loss of voice disappeared very soon after similar treatment, the improvement being marked. One of the pleasing features of the cases treated by means of salvarsan is the enthusiasm shown by the patients as to the value of the compound. This fact must have come to the notice of others who have had experience of its action in cases of syphilis. The last case to which I need allude was one of neuritis (ataxic symptoms). The patient had improved somewhat under mercurial inunctions. However, I advised him to submit to an intravenous injection, to which he consented. In ten days his condition had markedly improved. The gait was much steadier. He expressed himself "a different man."

At the department the practice now is to keep the patients (treated by salvarsan) for some further period under mercurial treatment. I am much indebted to Dr. T. R. Bradshaw for the use of an isolation ward in the Royal Infirmary for the cases treated intramuscularly. I am also much indebted to Mr. R. E. Kelly for operating in some of the intravenous cases. Also to Dr. A. Adams (Dr. Bradshaw's late house physician), Dr. R. B. Edwards (my late house surgeon), and Dr. L. Buckley (my house surgeon) for their kind assistance with the cases, some of which were efficiently injected by them.

I am, Sir, yours faithfully,

ARMAND BERNARD, B.A., M.B.,
Surgeon to the Department for Specific Diseases at the Liverpool Royal Infirmary; Lecturer in Specific Diseases at the University of Liverpool.

July 7th, 1911.

To the Editor of THE LANCET.

SIR,—I am at a loss to understand the motive underlying Mr. Ernest Lane's letter in your last issue, and which appears to be personal rather than critical. He acknowledges that I was correct in my surmise that, when he spoke adversely of salvarsan in December last, his experience was a small one. He also assures me that "he had not the time or the inclination to carefully glean anything" either from the reported casualty lists or the writings of the opponents or friends of salvarsan treatment. Mr. Lane writes that it passes his understanding that his allusion to what I called a remarkably small casualty list should be considered hostile criticism. Mr. Lane, however, drew attention to, and insisted on, the danger to life and sight following the use of this drug, and stated that "intolerance to mercury would be the only justification for looking elsewhere for a remedy." Mr. Lane did *not* emphasise the smallness of the casualty list; on the contrary, he by inference suggested that it was so large as to contra-indicate the treatment in all but occasional cases. Major French, to whose article of June 24th I was replying when I referred to Mr. Lane, quotes Mr. Lane as writing: "My experience of '606' does not agree with the opinions of the majority of those that have tried that preparation, and I am not at all inclined to advocate its use."

When an authority of the eminence of Mr. Lane speaks with no uncertain voice before a medical society on the question of the treatment of syphilis he surely cannot expect or wish his opinion to pass unnoticed. I have the high authority of Professor A. Neisser for entirely disagreeing with Mr. Lane's opinion on the undesirability of the routine use of salvarsan. Professor Neisser said in the Cavendish lecture: "We must treat every fresh case of syphilis, and, indeed, every case where we have suspicion of it, as quickly and as energetically as possible with '606.' Up to the present salvarsan has certainly proved less injurious to the internal organs than mercury."[1] Mr. Lane says that he is shortly opening a discussion on the treatment of syphilis by salvarsan. I shall read the report of this discussion with great interest, and perhaps may hear that Mr. Lane has modified his opinion of December last, which, according to his own confession, was based on only a brief personal experience and an incomplete study of the literature.

It is, perhaps, to be regretted that such an eminent authority should have permitted himself to express a decided opinion based on insufficient data.

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY.
Upper Berkeley-street, W., July 15th, 1911.

THE DECLINING BIRTH-RATE.

To the Editor of THE LANCET.

SIR,—Captain O. A. R. Berkeley-Hill's comments from India in THE LANCET of July 8th on my Jenner lecture[2] are doubly welcome, not only for their intrinsic value but also for their reminder of the late Mr. Berkeley-Hill's unstinted labours in connexion with the Contagious Diseases Acts. The problem of the birth-rate is nearly connected with the prevention of venereal disease. These questions are of the very first national importance; they can hardly be adequately discussed except by medical men, and by them they are seldom discussed except as an *hors d'œuvre* and in private. They should, on the other hand, be expounded to every student during his course, and my own lecture was intended not as an *ex cathedrâ* utterance, but as an appeal for thought and inquiry.

Captain Berkeley-Hill's points may be answered as follows:—(*a*) He thinks I "greatly overrate the disorders indubitably referable to the prevention of conception." My opinion was based on that of the late Professor J. W. Taylor,[3] and we must both appeal to gynæcologists to corroborate or revise his experience. (*b*) Commenting on my plea for sexual discipline, Captain Berkeley-Hill mentions the "many cases of chronic mental disorder which are directly attributable to sexual repression." We must appeal to specialists in mental diseases. But one must beware of attributing mental results to sexual repression, when they may be due to inherent mental defect, and when the repression may be due to habit, circumstance, or submission to authority, itself the result of such defect. My present opinion is based on that of Sir W. Gowers, who declared that he believed no one to have suffered in health by sexual abstinence. (*c*) Methods for prevention of conception may be checked by law without being prohibited. Their price may be raised by fiscal methods; their sale limited, like that of poisons, and subject to medical prescription. (*d*) I cannot understand Captain Berkeley-Hill's phrase, "compulsory

[1] West London Medical Journal, July, 1911, pp. 171 and 173.
[2] THE LANCET, April 22nd, 1911.
[3] Brit. Med. Jour., Feb. 20th, 1904.

barrenness," nor follow Mr. Bernard Shaw's antics amongst the marriage-laws; nor agree that the medical profession must first attack the "lamentable state of the English marriage and divorce laws." Let Captain Berkeley-Hill explain his objections and his alternative.

Does he think that middle-class women refuse to marry because the marriage service follows general custom and expediency in prescribing that man, as breadwinner and protector, shall be the responsible head of the household? Or that they refuse to bear children because they have fallen in love with another man, while their husband remains faithful? Or is he opposed to monogamy or perhaps to any marriage tie as the essential preliminary to propagation in the eyes of the law? If so, he is against civilisation and neither he nor Mr. Shaw has proved his point.

Pending such proof, Sir, I would submit that the chief and obvious factors in the decline of the birth-rate are: (1) the knowledge of methods of prevention and the ignorance of its results; (2) competition in every detail of life and the consequent economic stress; (3) indulgence and lack of discipline; or, in other words, the rational, the economic, and the moral factors. As medical men we are concerned only with the rational factor and should insist, both in public and private, on the value of nature's own checks and methods; on the dangers of celibacy, prostitution, and abnormal married intercourse; and on the healthy influence, the gaiety, and the ultimate economic value of a well-stocked nursery. Contrary advice must only be given with a due sense of the personal and public dangers entailed. May I appeal to gynæcologists and to experts in mental diseases on the two points raised?

I am, Sir, yours faithfully,

F. E. FREMANTLE.

Zetland House, by Guy's Hospital, S.E., July 10th, 1911.

SUGGESTED DIAGNOSIS OF MALIGNANT SCARLATINA ANGINOSA.

To the Editor of THE LANCET.

SIR,—Surely the case reported in THE LANCET of July 15th by Mr. Ernest Stratford, of Wellington College Station, was one of malignant *scarlatina anginosa?* Unfortunately, neither is the date on which the child sickened given, nor are the initial symptoms of the attack mentioned. Again, there is only one note as to the pulse-rate. Notwithstanding these drawbacks, in attempting to arrive at a diagnosis, the confluence of the rash, intensity and persistency of the fever, "enormous" swelling and subsequent sloughing of the tonsils, the presence of hæmaturia and of œdema of the feet, all go to make up a very graphic description of scarlatina maligna.

I am sure that all published descriptions of rötheln will be appealed to in vain—Mr. Stratford, in fact, admits as much—to substantiate a diagnosis of that acute infection in the terrible case reported in your columns.

I am, Sir, yours faithfully,

Dublin, July 15th, 1911. JOHN W. MOORE, M.D. Dub.

AN UNKNOWN SAMARITAN.

To the Editor of THE LANCET.

SIR,—I should like through the medium of your columns to express my grateful appreciation of the kindness shown me last Sunday in Wandsworth by a doctor (whose name I do not know) who not only rendered me first-aid when I was suffering from the effect of a spill from my cycle but brought me home in his own car. I trust you will allow me to take this opportunity of thanking him very sincerely.

I am, Sir, yours faithfully,

8, Solon-road, Brixton, S.W., July 17th, 1911. A. E. POOLEY.

INCOME-TAX RETURNS AND THE DEPRECIATION OF MOTOR-CARS.

To the Editor of THE LANCET.

SIR,—I shall be glad to know whether a doctor may claim for depreciation of a motor-car used in carrying on his practice in making up the return for assessment of the income-tax? My practice has just been assessed by the Special Commissioners and they have disallowed this item, stating that the depreciation of machinery is only allowed in trades and not in professions. If this is the case surely it is time that such unjust law was rectified. The car is indispensable to the production of the income. If a car or carriage were hired the expense could be deducted.

I am, Sir, yours faithfully,

July 10th, 1911. PUZZLED.

*** We understand that it is not infrequently the practice of surveyors to disallow claims for depreciation on the grounds suggested by our correspondent. Some surveyors, too, disallow the claim for the cost of a new car to replace one worn out. We have been advised by the Income-tax Repayment Agency that "a doctor may charge in his accounts for income-tax purposes all repairs to his motor-car used in his practice, and for the cost of a new car to replace the old one." It is obviously unfair to disallow the claims both for depreciation and for renewal: one or the other should stand; and if the practice to disallow both is growing medical men should combine to resist the injustice.—ED. L.

OPENING OF THE NEW MEDICAL BUILDINGS OF McGILL UNIVERSITY, MONTREAL.

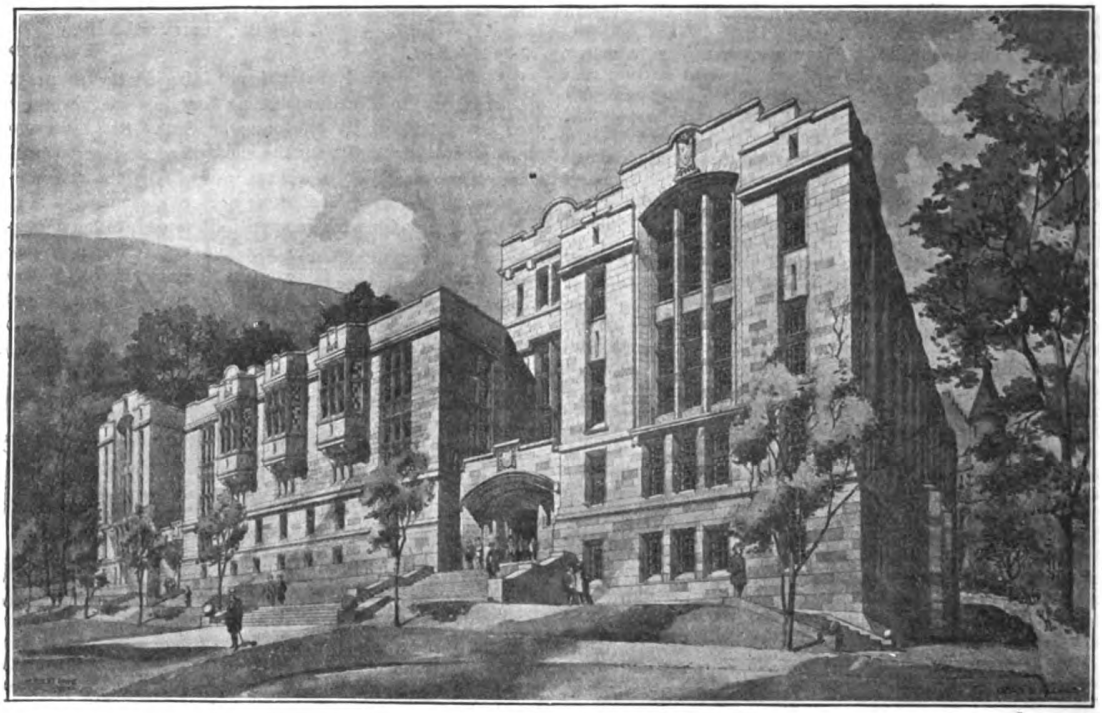
(FROM A SPECIAL CORRESPONDENT.)

THE week beginning June 5th was a carnival week for medicine in Montreal. The first two days of the week were devoted to celebrations in connexion with the opening of the new medical building of McGill University, and on the three following days the annual meeting of the Canadian Medical Association took place in the same building. These events, which have already been chronicled,[1] were made the occasion for a great gathering of McGill medical graduates from almost all parts of the continent, as well as from several out-of-the-way regions, and I think it likely that your readers will be interested in a brief account of the functions.

The attractive programme arranged for the opening of the new medical building was carried out without a hitch, reflecting great credit upon those responsible for the management of affairs. A conversazione was held in the evening of the opening day in the new medical building, and comprised many features of scientific and social interest. There were microscopical and bacteriological exhibits, Roentgen ray exhibits, exhibition of liquid air, library exhibits, lantern demonstrations and exhibits in the hygiene laboratories, and micro-projection of biological specimens, models, and experiments illustrating the physiology of the special senses. Music, concerts, and an informal dance were provided. The main interest of the evening's proceedings, however, naturally centred in the opening ceremony by the Governor-General of Canada, Earl Grey, which took place at 9.15 in the anatomical laboratory, a magnificently proportioned and large room on the third floor. Upwards of 2000 guests were present, comprising the leaders of social and professional life in Montreal. Upon the platform, among other university and city dignitaries, were Dr. Peterson, the principal of the University, Dr. Shepherd, dean of the medical faculty, and Professor J. G. Adami, professor of pathology in the University. After Dr. Peterson and Dr. Shepherd had welcomed their excellencies, Earl Grey delivered an apt and eloquent address, in the course of which he announced that Lord Strathcona had cabled from England that he would give a further sum of £20,000 in order that the new building might be equipped in a fitting manner. This makes a sum of £110,000 given by Lord Strathcona towards the cost of erecting and equipping the new building, in addition to providing the magnificent site. Indeed, without the aid of Lord Strathcona the aspirations of the medical faculty as regards building and equipment could not have been realised. The building, as will be seen from the accompanying illustrations, both in construction and arrangement, is commensurate with the great reputation of the medical school of McGill University. A striking feature of the building is the library, to which Sir William Osler and Dr. Casey Wood of Chicago

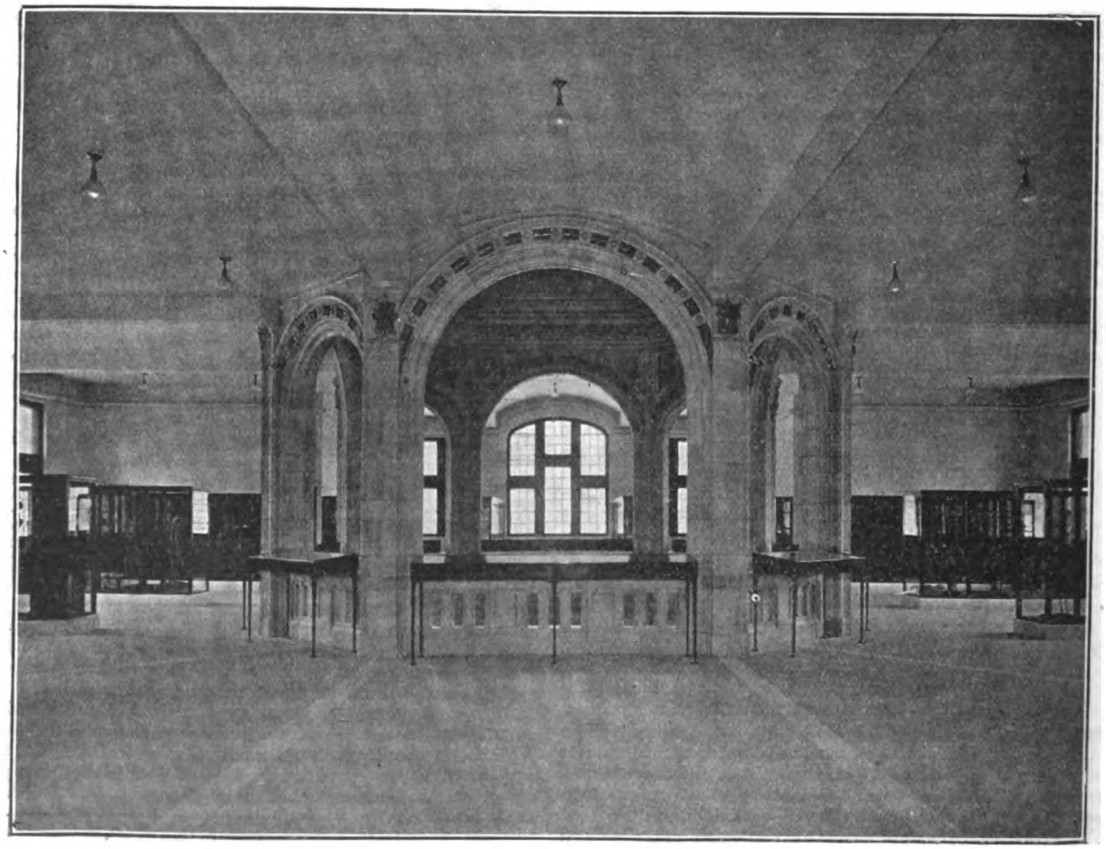
[1] THE LANCET, July 8th, 1911, p. 125.

FIG. 1.



McGill Medical College.

FIG. 2.



Anatomical museum McGill Medical College.

have made some extremely valuable gifts. The excellent arrangements of the library are mainly due to the energy of Miss Charlton, the acting librarian.

On Tuesday morning, June 6th, Earl Grey laid the corner stone of an addition to the General Hospital, Montreal. This hospital is to be virtually rebuilt, and owing to the lim ited space available (for it is situated in the heart of the most crowded district of Montreal) the new buildings will be erected to a height of about seven storeys. These will be of steel construction throughout. The steel skeleton of the part to which Earl Grey laid the corner stone has already been put in place and requires only its casing of stone to be complete so far as the exterior is concerned. At this ceremony the leading civic and university officials were present, and Earl Grey gave an especially appropriate and feeling address.

The culmination of the festive portion of the programme was reached on Tuesday evening, with a dinner at the Windsor Hotel, given by the dean, professors, and members of the teaching medical staff to the medical graduates of McGill University. At this also the Governor-General was present, and there were more than 500 guests, including graduates from the year 1854, represented by Sir James Grant of Ottawa, up to those of the present year. Probably the most distinctive of the speeches was that by Dr. Adami, who took the opportunity to criticise severely some recent remarks and writings of Mr. Bernard Shaw anent the medical profession. Dr. Adami characterised as wicked some of Mr. Shaw's animadversions on the medical profession—wicked because, being widely read by the unthinking crowd, some of the mud cast by Mr. Shaw was sure to stick. From all standpoints the celebrations in connexion with the opening of the new medical building of McGill proved a great success. Before leaving the subject of McGill University Medical School it will be as well to refer to a point which was constantly emphasised in the speeches —viz., that the medical part of the University is considerably hampered by poverty. The impression appears to be general that the medical school of McGill University is rich. This is far from being the case. As Dr. Shepherd stated, while it is rich in buildings and equipment, it is wretchedly poor in endowment. According to the dean of the medical school, at least £200,000 are needed for endowment. There is no endowment for the chairs of anatomy and chemistry, and that of the other chairs is insufficient. Research fellowships also are needed, as well as a library and museum fund. Dr. Shepherd appositely said: "We are living in a palace, but we are starved."

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Faculty of Medicine in the University.

THE dean's annual report for the session 1910–11 has been recently presented to and approved by the Medical Faculty. During the past session the number of students entering for courses in the Faculty of Medicine has been well maintained, and the total is 35. They are divided as follows: 24 have entered for the degree of the University, 3 for degrees in other universities, 2 for the diploma of the London Conjoint Board, and 6 for those of other examining bodies. The following are the entries of the last six years. The total for 1910–11 is 35; for 1909–10, 34; for 1908–09, 30; for 1907–08, 35; for 1906–07, 37; and for 1905–06, 27. The total number of undergraduates at present in the school is the largest on record—viz., 148. 188 students other than undergraduates have taken courses: in research work, 41; school of hygiene, 31; tropical school, 49; operative surgery, 3; and dental, 64. The total of all classes is therefore 336, compared with 298 during the previous session. The proportion of students preparing for the degree continues to increase. The first M.B. classes have been larger during the past session than they have ever been. Progress has been made throughout the past session in the remodelling of first year subjects to form a more suitable introduction to the later subjects of the curriculum. The changes have been most marked in chemistry. Zoology and botany have also been modified in the same direction. A recent regulation of the General Medical Council regarding courses of instruction in these subjects for the First Professional Examination has engaged the attention of the Faculty, and on its recommendation the University Council is about to address a memorial to the General Medical Council in the matter. The course of instruction in systematic surgery has for the first time been divided into general and regional, and the board of clinical studies has also instituted a new course for junior students preparatory to the commencement of dressing and clerking. The composition fee has been remodelled so as to include all the courses of instruction necessary for the degree except vaccination and out-door midwifery. It is now possible to pay the fee in four instead of three instalments. The faculty has devoted considerable attention to the proposal to institute degrees in hygiene. It has recommended to the Senate and the Council the institution of the degrees of Bachelor of Hygiene and Doctor of Hygiene, but these proposals have not yet received the assent of those bodies. A diploma in ophthalmic surgery has been instituted for graduates, and ordinances and regulations relative to the same have been approved by the Senate and Council. The course of instruction in this direction has aroused considerable interest, and applications for admission have already been received. The school of pharmacy has also shown signs of a renewed activity. The Faculty of Medicine is now recognised by the Board of Education as a school eligible for grants. The faculty has had to deplore the loss of one of its most distinguished members, Sir Rubert Boyce, and has recorded on its minutes its admiration of the great services he rendered to medicine and to the University. The most notable appointment in the faculty during the session has been that of Mr. R. Newstead to the newly established chair of entomology. This chair was founded in memory of Joseph Everitt Dutton, who lost his life while on an expedition of the School of Tropical Medicine in West Africa. On the recommendation of the Senate, and with the approval of the Faculty of Medicine, the Council conferred the title of associate professor on Dr. Ernest E. Glynn, the lecturer in clinical pathology. On the recommendation of the faculty an alteration has been made with regard to the regulations for the William Mitchell Banks Memorial lectureship. The election will in future be made biennially instead of annually as heretofore. Alterations in regulations have also been made regarding the award of the International and Colonial Fellowships, the University Scholarship, the Senior Lyon Jones Scholarship, and the medals in anatomy and physiology.

Liverpool University.

On July 8th the Vice-Chancellor of Liverpool University admitted to the University the numerous candidates on whom degrees had been conferred. In his address Sir Alfred Dale paid tributes to the late Sir Rubert Boyce and Professor Kuno Meyer, the latter having been transferred to Berlin. He pleaded for two gifts of £5000—one to enlarge the chemical laboratory, and the other to complete the club-house of the Undergraduates' Union. The scene was a brilliant one, and the function proved highly interesting.

Woolton Convalescent Institution.

Cordial eulogy was bestowed upon the operations of the Woolton Convalescent Institution at its thirty-seventh annual meeting held recently. It was announced that a valuable collection of pictures and furniture had been bequeathed to the institution under the will of the late Madame Otterburg, of London, sister-in-law of the late philanthropist, Mr. David Lewis.

The New Laboratories at Mill-road Infirmary.

A suite of laboratories in connexion with Mill-road Infirmary, an institution under the control of the West Derby board of guardians, was opened on July 14th by the chairman of the infirmary. The infirmary contains 900 beds, and the new research laboratories are designed for the investigation of disease. The arrangement of the laboratories, which are fitted up with all the necessary and most up-to-date appliances, will admit of clinical, bacteriological, and pathological investigation. This departure is the first of the kind which has received the sanction of the Local Government Board. At the conclusion of the opening ceremony the committee and guests were entertained to luncheon by Dr. Nathan Raw, the medical superintendent of the infirmary.

July 17th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Medical Inspection of School Children.

THE Bristol school medical officer's annual report contains much that is of interest; certainly it affords ample evidence in favour of the claim made by the medical officer, Dr. T. A. Green, that "our system of medical inspection, with its gradual expansions, seems to be working satisfactorily." It is, indeed, striking to note in how many directions expansion and coördination with other organisations are taking place. The two school nurses have worked during the year under Dr. Green's direct supervision; a large portion of their time has been occupied in the treatment of verminous and dirty children. In addition to this they have given help at the five "ringworm centres" established last year by the education committee. These centres are for the inspection of children suspected to be suffering from ringworm and for treatment in necessitous cases. The establishment of the centres was the outcome of a resolution excluding cases of ringworm from the schools. The Children's Care Committee is a voluntary body, consisting of the 51 lady visitors for the council and voluntary schools. These visitors have investigated 2608 cases in which the advice of the school medical inspector was ignored; and in no less than 40 per cent. of these the parents have been persuaded to secure treatment for their children. A "semi-deaf" class has been established for the education of children who, while having the power of speech and a certain amount of hearing, were too deaf to gain full advantage from the routine education. 22 children have been attending this class, with satisfactory results on the whole. During the year there were 1323 cases of notifiable infectious disease, and 2182 of non-notifiable disease (measles, whooping-cough, mumps, chicken-pox, and "suspicious" cases) in the schools. Finally, it is encouraging to note a fall in the percentage of carious teeth and of verminous heads as compared with last year.

Coronation Celebrations at Bristol.

Several of the medical institutions of Bristol used special means for celebrating the Coronation of King George V. At the Lesser Colston Hall the blind people of Bristol met, together with the children from the new School of Industry for the Blind, to receive Coronation chocolate boxes and to hear a selection of band music. The company was gratified to learn that the King had graciously consented to confer the title of "Royal" on the School of Industry. At the Ham Green Fever Hospital there was a garden party, with the presentation by the health committee of the city council of an illuminated address to Miss Watt, who has just resigned the post of matron to the Novers-hill Fever Hospital. At the Royal Infirmary sports were held, the prizes being given away by Mrs. E. H. E. Stack.

The Lectureship in Botany to Bristol University.

The lecturer in Botany, Mr. J. H. Priestley, has been appointed to the professorship of botany in the University of Leeds. He will be greatly missed, not only in the botanical department, where he has organised research into problems of plant growth and stimulation, but also in connexion with student societies and organisations. He has been secretary to the local naturalists' club, and to the University athletic ground committee, and president of the University Botanical Field Club. In addition to these offices he has done much of the organisation of the department of economic biology and of the guild of undergraduates.

A Parish Patient at Tavistock.

At a meeting of the Tavistock (Devon) board of guardians held recently it was stated that one of the district medical officers had attended a man who had obtained a "medical order" for several weeks. Upon his death it was discovered that he had over £100 in the bank. The medical officer is now making a claim against the estate of the deceased for medical attendance, and the guardians have decided to assist him in obtaining his fees.

Blindness and Untrained Midwives.

The session of the International Conference on the Blind was held at Exeter on July 7th, under the presidency of Sir Robert Newman. The honorary general secretary (Mr. C. Collingwood), in the unavoidable absence of Dr. G. Reid, the medical officer of health of Staffordshire, read his paper on "Untrained Midwives." Dr. Reid in the course of his interesting remarks alluded to the blindness which resulted from the neglect of untrained midwives attending lying-in cases. He added that with intelligent care of the infant ophthalmia should hardly ever occur, and if such cases should arise, simple, efficient, and early treatment would practically cure every case. Dr. Reid advocated the compulsory notification of this disease, and after the discussion which followed a resolution to that effect was passed.

The West Cornwall Infirmary, Penzance.

At the last meeting of the committee of the West Cornwall Infirmary, Penzance, a letter was read from Mr. R. F. Bolitho, enclosing a cheque for £1500, to be devoted towards the endowment of a bed, to be named the "Oliver Caldwell Bed," in memory of the architect of the infirmary. Mr. Bolitho states that the gift "is to assist to celebrate locally and loyally the Coronation Day of King George V."

A Medical Officer of Health for East Devon.

At the last meeting of the Honiton town council it was reported that the Local Government Board had stated that it had decided to issue an order for uniting the borough of Honiton, the urban districts of Ottery St. Mary, Seaton, and Sidmouth, and the rural districts of Axminster and Honiton, into a sanitary district, with one medical officer of health for the whole area. The Local Government Board added that the medical officer appointed must devote his whole time to the duties, and suggested that he should also be assistant medical inspector of school children.

July 18th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in the Crickhowell Rural District.

DURING the past few weeks there have occurred six cases of typhoid fever, two terminating fatally, in the Llanelly parish of the Crickhowell rural district in Brecknockshire. The medical officer of health, Mr. P. E. Hill, attributes the outbreak to the pollution of the water-supply by the Brynmawr sewage, the outfall works of the Brynmawr urban district council being situated in Llanelly. As long ago as 1902 Dr. R. J. Reece and Mr. Sandford Fawcett, M.Inst.C E., reported to the Local Government Board upon the unsatisfactory condition of these sewage works. On the occasion of the visits of these inspectors leaking sewage pipes were found which undoubtedly polluted certain water-supplies, and in his most recent inquiries Mr. Hill has found that a similar condition prevails and bacteriological examination has revealed the presence of B. coli in the supplies.

The Welsh Crusade against Consumption.

At a meeting held at Shrewsbury of the executive committee of the Welsh National Memorial to King Edward VII, Mr. David Davies, M.P., who suggested the form which the memorial should take, stated that the principal work carried on by the committee during the past eight months had been the collection of funds and the education of the public in the prevention and cure of tuberculosis. The total sum already promised is nearly £190,000, and investments of moneys actually received are yielding an income equal to £3000 per annum. It is hoped that the current administrative expenses will be met out of interest on invested funds. A travelling exhibition has visited nine towns in South Wales and nine in North Wales, and over 200 public meetings have been held in various parts of the country. The committee suggests that provision should be made in the National Insurance Bill for the constitution of Wales and Monmouthshire, so far as the provision of sanatoriums and other institutions for the treatment of tuberculosis and the administration of sanatoriums are concerned, a separate unit under an association to be incorporated by Royal Charter and to be called the King Edward VII. Welsh National Memorial Association. The committee is so sanguine that with properly organised effort tuberculosis can practically be stamped out that a further suggestion has been made for the utilisation of the funds of the association when this shall have occurred. It was therefore resolved by the committee that as tuberculosis is inseparably connected with the general

health of the nation the proposed association should be empowered to take such steps as might be deemed advisable to improve the general health of the people of Wales and Monmouthshire.

Heavy Fines upon Milk Vendors.

At one time the amount of the fines which were imposed upon milk vendors in South Wales for selling milk of an inferior quality was so ridiculously small that no deterrent effect was produced. Latterly, however, the magistrates before whom such cases have been brought have realised that to be effective the fine must be a substantial one. At Pontypool recently a fine of £20 was imposed upon a dairyman, a sample of whose milk taken from a cart in the street was found to contain 4·23 per cent. of added water. Still more recently the stipendiary magistrate of Aberdare imposed a fine of £50 upon a dairyman for a similar offence.

Tregaron Rural District Council and the Local Government Board.

In the report upon the sanitary condition of Tregaron rural district, which was issued by the Local Government Board in 1907, Dr. E. P. Manby referred to the inadequacy of the salary paid to the inspector of nuisances, who was expected to devote the whole of his time to the duties of the office for the small sum of £40 per annum. The Board refused to sanction the appointment, whereupon the district council reduced the salary to £30. For nearly four years correspondence has been going on between the council and the Board, the central authority persisting in its refusal to sanction any salary lower than £60 per annum, the sanction carrying with it a payment of one-half that sum from the Exchequer grants. At length the council has acquiesced in the demand of the Board, whose persistence should act as a deterrent to other sanitary authorities who desire to cut down the salaries of their officials to the lowest possible point. A more reasonable attitude has been taken in neighbouring Herefordshire by the Kington urban district council, which has increased the salary of the medical officer of health, Mr. R. Harding, from £20 per annum to £40, and has increased the salary of the inspector of nuisances by £10 owing to the additional work entailed upon these officials by the Housing, Town Planning, &c., Act, 1909.

July 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Farewell Banquet to Colonel and Mrs. Warburton.

ON the evening of July 14th a banquet was given in honour of Colonel W. P. Warburton, I.M.S., C.S.I., superintendent of the Edinburgh Royal Infirmary, and Mrs. Warburton, in the Caledonian Hotel, by their medical friends in Edinburgh on the occasion of their leaving the city. Dr. and Mrs. Byrom Bramwell and Dr. and Mrs. George A. Berry received the guests, and Sir William Turner presided at the banquet, which was attended by a large number of the staff of the Edinburgh Royal Infirmary as well as other representative members of the medical profession and a number of ladies. Sir William Turner proposed the health of "Colonel and Mrs. Warburton" in a felicitous speech. He referred to the career of Colonel Warburton, first at the University of Edinburgh and later in India, and assured Colonel Warburton of the high appreciation with which his work at the Royal Infirmary was regarded by all with whom he had come into contact. Sir William Turner then presented to Mrs. Warburton as a memento of the occasion an album in which those attending the banquet had signed their names.

Edinburgh Royal Infirmary.

At a meeting of the managers of Edinburgh Royal Infirmary, held on July 10th, Dr. William Thomas Ritchie was appointed an assistant physician to the institution. Dr. Dawson Turner, on the completion of two terms of service of five years each as medical electrician to the Royal Infirmary, has now been appointed Extra Medical Electrician. The duties attached to the office are the treatment by radium of any cases that may require such treatment. No similar appointment appears yet to have been made in this country. Dr. W. Hope Fowler has been appointed to succeed Dr. Dawson Turner as Medical Electrician, and Mr. Archibald McKendrick becomes the Junior Medical Electrician.

Edinburgh Hospital for Women and Children and the Hospice.

The new wing of the Edinburgh Hospital for Women and Children, which has just been completed, was, on the occasion of the Royal visit to Edinburgh, honoured by a visit from Her Majesty the Queen. The hospital, which was founded by Dr. Sophia Jex-Blake, and is officered by medical women, will now have accommodation for 40 patients. The contributory system will still be maintained, the patients paying from 5*s.* to £2 2*s.* per week. The new wing contains two wards of 14 beds each, with wide verandahs facing west and running the whole length of the wards, a new and up-to-date operating theatre, a dispensary, and other offices. The older part of the building, consisting of smaller rooms, will be used for the accommodation of patients paying the higher rates of board, and on the ground floor of this section an electrical department has been fitted up. During the past year the medical women in Edinburgh have wisely strengthened their position by the amalgamation of the hospital with the Hospice, an institution also officered by medical women and situated in the thickly populated district of the High-street. The Hospice will now be reserved entirely as a maternity home for poor married women and a centre for a maternity out-patient department, while all surgical and medical cases will in future be treated at the hospital, the situation of which, at the corner of Whitehouse Loan, provides a fresher atmosphere and more pleasant surroundings than were to be found in the centre of the city.

Carnegie University Fees.

Few who have been watching the trend of events at the Scottish Universities during the last few years have been surprised by the announcement which has just come from the Trust Offices regarding a modification in the payment of Carnegie University fees. Every year since their institution the number of students who take advantage of the benefits of the scheme has increased—particularly in the case of women undergraduates—and the Trust has been faced with the question of modifying the scale. Those modifications, however, will apply only to students who become beneficiaries for the first time next session, present beneficiaries not being affected, but the new arrangement will not seriously embarrass the recipients. It is not expected that the new order of things will become a permanency, and the supposition is that the whole scheme of fees will shortly form the subject of reconstruction. At the University of Glasgow, taking the respective faculties in the bulk, it is estimated that a little over 50 per cent. of the whole fees are met by the Carnegie Trust. As the demands for payment of class fees have this year considerably exceeded the available income under Clause B, the executive committee of the Trust has announced the following arrangement for the academic year 1911–12. In the case of present beneficiaries it hopes to be able to continue the payment of class fees as formerly, but in the case of new beneficiaries it does not see its way to exceed the following annual allowances for the various faculties: Arts, £9; science, £12; medicine, £15; law, £6; and divinity, £6.

Incidence of Puerperal Fever in Glasgow.

In his report on the occurrence of puerperal fever in Glasgow, Dr. A. K. Chalmers, the medical officer of health of the city, points out that the Notification of Births Act now enables us to review the incidence of puerperal fever in some detail. Of the 113 cases of the disease registered last year, 31 had been under medical care from the beginning, while 82 were attended by midwives at the onset of labour, although in 19 of these medical assistance was subsequently obtained. Or, to put it differently, of 10,399 births attended by medical men, the patients in 31 cases contracted puerperal fever, making a rate of 3 per 1000 births; on the other hand, of 12,446 births attended by midwives alone, in 82 cases puerperal fever occurred, making a rate of 6 6 per 1000 births. Dr. Chalmers, however, draws attention to this fact, that before regarding these rates as final, and more particularly before accepting the greater relative incidence of puerperal fever in cases attended by midwives as resulting from defective technique, it is necessary to remember that the midwives' practice is more frequently among the poorer classes and in the smaller

houses, and that these are factors which, while incapable of express statement, must be taken into account when considering the difference in the incidence.

Greenock and District Combination Hospital.

According to the annual report just issued, the past year has been memorable as the busiest experienced in this hospital. This was altogether due to the great prevalence of scarlet fever, which was epidemic in Greenock and the surrounding districts. At times, indeed, the scarlet fever block, which is the largest in the hospital, was taxed beyond its utmost capacity, and the overflow had to be accommodated in the discharge block. During the year 566 cases, of which 448 were scarlet fever cases, were admitted; of these 34 died, giving a mortality of 6 per cent. The average duration of residence in hospital was 43·9 days and of fatal cases 12·2 days.

University of Aberdeen.

The summer graduation at the University of Aberdeen took place on July 12th. The degree of M.D. was conferred upon 8 persons, Ch.M. upon 1, M.B., Ch.B. upon 11, and the diploma of public health upon 6. In his speech Principal Smith noted the fact that the number of students who matriculated in the present year—namely, 969—was 38 less than last year. He also referred to the various gifts to the University made during the year and to the retirement of Sir W. Ramsay, professor of humanity in the University. The University Court has appointed the following to be additional examiners in the respective subjects:—Materia Medica: James Burnet, M.A., M.D., M.R.C.P., lecturer in materia medica and therapeutics, Edinburgh. Pathology: James Miller, M.D., D.Sc., lecturer in pathology, Royal Colleges, Edinburgh. Surgery: Alexander Don, M.A., M.B., C.M., F.R.C.S., lecturer in clinical surgery to the Royal Infirmary, Dundee.

Baldovan Asylum: Change of Name.

Intimation was ordered by the First Division of the Court of Session on June 28th of a petition by Bishop Robberds of Brechin, the Primus of the Episcopal Church in Scotland, and others forming the general council of the Baldovan Asylum for Imbecile Children. The asylum was founded in 1853, under the patronage of the late Queen Victoria and the Prince Consort. From their experience the petitioners find that the name of the institution, and especially of the words "asylum" and "imbecile," is regarded as objectionable by parents of many children who should become patients in the institution, so that the parents often decline to send their children there, thus seriously interfering with the usefulness of the institution. The petitioners are of opinion that the name should be changed to the Baldovan Institution for the Treatment of the Feeble-minded. The proposal to change the name has been submitted to the General Board of Lunacy for Scotland, which has approved of it, and to the general council and subscribers to the institution, who have also unanimously approved.

Opening of Inverness Tuberculosis Dispensary.

The Inverness Tuberculosis Dispensary was formally opened on July 7th by Provost Birnie, Inverness. The treatment by tuberculin is an adjunct to the Forbes Dispensary. Provost Birnie eulogised the good work which the dispensary had done for a number of years.

Forfar Infirmary and Paying Patients.

At the quarterly meeting of the Forfar Infirmary directors it was decided, by a majority of 9 to 4, to admit paying patients to the institution. The motion was objected to on the ground that it would alter the character of the institution. There is to be no preferential class treatment, but the wealthier man, who desires to do so, can pay a weekly sum towards his treatment.

July 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Bill.

THE committee of the Irish Party, to which was committed the task of framing amendments to adapt the National Insurance Bill to the special conditions of Ireland, last week presented its report, which was adopted by the party. The most important recommendation, so far as the medical profession is concerned, is that "as regards the whole of Ireland medical benefit should be excluded from the Bill." It is stated as a reason for this that the poor of Ireland are already sufficiently supplied with medical attendance, mainly at the expense of the rates. This way of dealing with the crux of the medical question was also demanded by the meeting of medical graduates of the University of Dublin held on June 26th. It has not, however, been adopted by any other body of medical men in Ireland, and it is doubtful whether the solution proposed will be welcomed by the profession as a whole. In all its deliberations the profession has proceeded on the assumption that the principle of medical benefit would certainly apply to Ireland, and discussion was limited to the improvement of the conditions of application. The committee of the Irish Party also recommends, *inter alia*, that no persons working for their parents or other persons liable to maintain them should be compulsorily insurable; that domestic servants should be insured at a greatly reduced rate for all purposes except sickness benefit, and that the employer should be under contract to pay the wages during temporary sickness; and that the minimum limit of membership for an approved society in Ireland should be 500.

Dublin University Graduates and the Insurance Bill.

A statement has been issued by a committee of medical graduates of Trinity College, Dublin, for submission to Members of Parliament in reference to the National Insurance Bill. The committee emphasises the fact that the meeting of medical graduates held on June 26th was, with the exception of two dissentients, in favour of condemning the medical clauses of the Bill as unnecessary in, and unsuitable to the conditions of, Ireland. Discussing the amendments which would be required to permit of any successful working of the Bill, the committee observes that a wage limit of £160, such as is suggested in the Bill for certain classes of workers, would admit the great bulk of the middle class of *employed* persons in Irish country towns—i.e., the class from which Irish medical men make their living. No practicable contract fee would recoup medical men for loss of this class. In England, also, a large proportion of the medical man's private practice lies among those whose income is between £2 and (say) £4 a week. Experience shows that this class is under no hardship in providing medical attendance at their own expense without assistance of any kind. The committee suggests a limit of £2 a week in England, and in Ireland, £1 10*s.* a week in the large towns, and £1 a week in the country. This should be a *total income limit*, and not a *wage* limit, and *be applicable alike to voluntary and compulsory insurers*. Free choice of medical attendant greatly contributes to the confidence that should exist between medical man and patient, and is advisable in order to maintain a satisfactory professional relation. Moreover, if this be not permitted, the Bill threatens immediate ruin to those practitioners who are not selected for work under the Bill. Experience of the Friendly Societies shows that they are unable to appreciate either the care required by sick people or the education and skill required to give it. Their only anxiety is to cut rates as low as possible. Any extension of their activity, fortified by public subsidies and State recognition, is to be deprecated. The committee also urges that medical remuneration should be what the profession considers adequate, and that adequate medical representation should be given among the Insurance Commissioners, in the Central Advisory Committee, and in the Local Health Committees, and considers that statutory recognition should be made of a Local Medical Committee representative of the profession in the district of each Health Committee. Attention is also drawn to the injury likely to be done to voluntary hospitals, and the injustice of the compulsory clauses referring to Ireland.

Munificent Gift to the Dublin Hospitals.

In order to commemorate the first visit of King George to Dublin since his accession, Lord Iveagh has handed to His Majesty a sum of £50,000 for distribution to the hospitals of Dublin. In 1903 Lord Iveagh made a like gift in honour of the visit of King Edward. Within the last few months his lordship, who is Chancellor of the University of Dublin, presented the National University with a magnificent site for its proposed buildings.

Dinner to the Right Hon. Dr. Michael F. Cox.

A number of his friends entertained Dr. Michael F. Cox to dinner last week at the Shelbourne Hotel in honour of his

recent appointment as a member of the Privy Council in Ireland.

The Meeting of the Medico-Psychological Association of Great Britain and Ireland.

The meeting of this association was held in Dublin on July 13th and 14th, and was a highly successful occasion. Dr. W. R. Dawson was elected President for the year.

Death of an Inmate of Dundrum Criminal Lunatic Asylum.

On July 17th Mr. W. A. Rafferty, coroner for South County Dublin, held an inquest on the death of an inmate of the Dundrum Criminal Lunatic Asylum, which had resulted from an injury to the head inflicted by another inmate. Both men had committed murder prior to their admission to the institution. It was proved that at the time the injury was given no attendant was present. It was also stated that the attendants worked 16 hours a day. The jury, in finding the cause of death, exonerated the officials from blame, but added that the attendant staff was insufficient, and the hours of duty "wholly excessive."

Ulster Asylums.

At the monthly meeting of the Monaghan and Cavan Asylum, held on July 13th, a subcommittee reported in reference to a letter from the Treasury on the vexed question of the relations of Imperial and local taxation. In 1874 the total average cost per head of the patients was £20 16*s.*, which was equally divided between Imperial and local taxation, leaving £10 8*s.* for each to pay. Now the average cost per head had risen to £25 15*s.*, of which the Imperial charge was £10 8*s.*, while the local ratepayers, with a diminishing population and an increasing number of inmates, had to pay £15 7*s.* In the opinion of the subcommittee (and this was adopted by the board), the least that could be done to carry out the principle established in 1874 was that the Imperial taxation should bear the half of the £25 15*s.* In reference to the Asylum Bill, a resolution was carried calling on the Parliamentary representatives of Cavan and Monaghan to oppose that part of the Bill which reduced the hours or the duty of the officials. At a meeting of the committee of management of the Tyrone and Fermanagh Asylum held on the same day a resolution was passed protesting against the clauses in the Asylum Attendants Bill which proposed reducing the basis of asylum attendants to 60 hours per week. An interesting point arose on a statement of the medical superintendent that it frequently happened that patients were committed to the asylum who should really be sent to prison. It was decided to take the opinion of the committee's solicitors on the matter before issuing a notice to the magistrates.

The Belfast Natural History and Philosophical Society.

During the recent visit of the King to Ireland an address from the Belfast Natural History and Philosophical Society was received by him, and the President (Sir John Byers, M.D.) and the honorary secretary (Mr. R. M. Young, M.R.I.A.) were personally presented to His Majesty.

July 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Visitors' Tax at French Health Resorts.

A MINISTERIALLY appointed special commission has for a long time been engaged in considering the best means of developing the mineral water resources of France, and after four years of persevering effort it has induced Parliament to pass a law authorising a *taxe de séjour*. The payments under the new system will be analogous to the kur-taxe of the corresponding German and Austrian health resorts. In accordance with custom, a decree of the Council of State has recently specified the conditions under which the new law will be applicable. This decree provides that every request for the official recognition of any locality as a mineral water or climatic health resort shall be addressed to the prefect of the department, who will hold an inquiry, and if satisfied will grant the necessary authorisation. The various details relative to the tax must be duly considered by the municipal council of the commune, which will also make the claim for payment, at the same time indicating the manner in which the tax is to be paid, its amount, its duration, and the purposes to which the proceeds will be applied. As a general rule (subject, however, to the voting of the commune concerned) the days of a visitor's arrival and departure will not be counted for taxation. When the tax is based on the rental of a room or a house its amount must be placarded in the room or house. Its duration will be for a period of five years at most, unless it has been made security for an authorised loan, in which case it may continue until the loan has been paid off. The scale of charges must always be exhibited at the entrance of the *mairie* of the commune and in all hotels and furnished houses offering accommodation to persons coming from outside the commune. Hotel-keepers, lodginghouse-keepers, and landlords must have a special register, which will be supplied free of charge by the *mairie* and in these they will enter the names, ordinary places of abode, and dates of arrival of all their tenants. Hotel-keepers and lodginghouse-keepers will at the time when their bills are paid collect the tax from their tenants and give a receipt for it; the tax must, moreover, be collected on the departure of the tenant, even although the latter has made a special agreement with the landlord for deferred payment of the hotel bill. For infraction of these regulations the decree imposes a penalty of twice the amount of the tax, and when fraud is proved a penalty of thrice the amount of the tax. To recapitulate, the tax is based on the rent paid by all visitors coming from outside the commune and remaining for more than five days; all persons who accompany visitors, whether as relatives or servants, are also liable. The average charge will be very small—probably from 5 to 10 francs for each individual. It is expected that the proceeds will allow improvements to be made in many neglected mineral water stations in which property owners deriving good profits from entertainments have given more attention to these than to the mineral water establishment with its indispensable accessories, a park, public walks, dietary regulations, physical methods of treatment, and the like. At the same time it must not be forgotten that some of the municipal councillors will be certain to raise objections to the money being employed for this purpose, and the matter is one in which the councils have extensive powers, because, according to French law, the right of levying taxes belongs only to the State and the communes. As a question of politics it is inevitable that the elected members of the councils will first of all desire to conciliate their constituents so as to retain their seats, and will be under a great temptation to apply the proceeds of this tax for the benefit of the townspeople, by reducing the local rates and providing hospitals, schools, market-places, &c., with the result that improvements which might have been made in the interest of visitors, and for which their money might have been used, will remain for future consideration. There was a proposal that the proceeds of the tax should be disbursed by a commission called the Chambre d'Industrie Thermale, on which the municipal council, the proprietors of the mineral water establishment, and the local medical men should be equally represented, each of these three interested classes appointing one-third of the members, but in Parliament political considerations prevailed and the new decree assigned this duty to the municipal council. It may, therefore, be said that in this new tax the mineral water resorts possess an important instrument of development which will be serviceable or not according to the manner in which the municipal councils make use of it. In some of the councils the majority consists of hotel-keepers who immediately took advantage of the opportunity of doing away with all the town dues (*octrois*) on articles brought into the place; they could then buy provisions more cheaply than before, but they naturally did not reduce the price of their rooms. This example shows that there may well be some misgiving as to the purposes for which the new tax will be applied.

A Home for Medical Men in Reduced Circumstances and a Proposed Medical Hotel.

Some undertakings for the benefit of the profession are gradually undergoing an interesting development. A year ago a boarding house was opened in the neighbourhood of Paris where medical men in reduced circumstances or bad health are received at a very moderate charge, and it is rapidly becoming prosperous in consequence of the gifts and bequests which it receives; the proceeds of the concerts given by the medical orchestra (several times

mentioned in this column) are also made over to it. Another enterprise of interest to the profession has been suggested by Dr. Tourtourat, general secretary of the syndicate of medical men of the Seine. His proposal is that there should be established in Paris a hotel for the exclusive use of medical men. The bedrooms would be reserved for medical visitors from the provinces or abroad. The rooms on the ground-floor would be available for meetings of syndicates, committees, and learned societies, or for any meetings having a scientific and professional object. The income would be derived from the medical societies concerned and from other sources. The proposal has received very favourable consideration from the medical societies and may perhaps become an actual fact some day.

Les Voyages d'Études Médicales.

The eleventh Voyage d'Études Médicales, under the actual presidency of Professor Landouzy, will take place in the South-East of France from August 28th to Sept. 11th, when the following route will be observed: Vals, Montmirail, Balaruc-les-Bains, Lamalou, Alet, La Fou-Saint-Paul-de-Fenouillet, Prats-de-Mollo, La Presle, Amélie-les-Bains, Le Boulou, Banyuls-sur-Mer, Molitg, Le Vernet, Thuès, Mont-Louis, Font-Romeu, Les Escaldes, Ax-les-Thermes, Ussat, Aulus, Salies-du-Salat. A half-fare will be granted on all French railways from the station of arrival on French territory to the place of assembly, Lyons, and again from the place of disbanding, Toulouse, to the same point. The total cost of the trip from Lyons to Toulouse, including first-class fare, conveyances, hotels, board, baggage, and "tips," will be £14. For further particulars application should be made to Dr. Carron de la Carrière, 2, Rue Lincoln, or Dr. Jouaust, 4, Rue Frédéric-Bastiat, Paris.

July 17th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Reform of the Workmen's Insurance Laws.

THE work of reforming the workmen's insurance laws has now come to an end, the Act having been passed before the Parliamentary vacation. As already explained in THE LANCET of Sept. 4th, 1909, the new law is not a complete alteration of the existing workmen's insurance law, but rather a consolidation of the various laws and regulations concerning sickness, accidents, old age, and invalidity, with an extension of their application. The original form of the Bill, called Reichs-Versicherungs-Ordnung, was extensively amended before its final passing. The first scheme of the year 1909, a description of which may be found in THE LANCET (1909, Vol. II., p. 754), met with general opposition from the sick clubs, from the employers' associations, and especially from the medical profession, so that it was remodelled by the Home Office. The Bill in this modified form, after having passed the Federal Council, was introduced in Parliament in May, 1910; and after the first reading was referred to a committee of the House. That committee was busy from June, 1910, to Easter, 1911, in discussing and amending the Bill, and was even by a special law empowered to sit during the Parliamentary vacation. The work of that committee was so thoroughly done that the second and third readings in the House were completed in a few weeks, the Bill having become an Act before the close of the session at Whitsuntide. The Act is of gigantic dimensions, containing not less than 1805 paragraphs; according to the daily newspapers it is exceeded in length only by the codification of the civil law which was made some ten years ago. The Act provides for the institution of an elaborate system of insurance offices; there will be local insurance offices for each city and rural area, district insurance offices for each district, and the Imperial Insurance Office already existing for the whole Empire. It is the duty of these offices to supervise and control the organisations to which as hitherto the actual insuring is intrusted—namely, sick clubs, employers' associations, and old age and invalidity insurance institutions. The constitution of those bodies has been left practically unchanged, an exception being made only in the case of the sick clubs, which were said by the Government authorities to have become mere social democratic organisations whose salaried officials, such as clerks and treasurers, were almost always recognised members of the Social Democratic party. With a view to prevent a continuance of this system the sick clubs are to be more strictly controlled than heretofore. Instead of sick clubs for every trade there will be one general sick club for each town or rural area, but the existing trade sick clubs will be allowed to continue if the number of members is at least 1000. In this way a good many small sick clubs will be broken up, whilst the formation of new trade sick clubs is henceforth prohibited. Similar provisions concern the existing factory sick clubs (Fabrik-Krankenkassen), which admit only the workmen of a single factory. Insurance against sickness will henceforth be compulsory for agricultural labourers and for domestic servants, who have hitherto been excepted from the operations of the insurance law. Special clubs, called country sick clubs, will be instituted for these classes, their principal feature being that they have no self-government at all but are managed by the local authority. There was one clause adopted during the third reading of the Bill in the House which will have an important bearing on medical practice, especially in the country. It is to the effect that insurance shall be compulsory for employed persons earning not more than 2500 marks (£125) per annum. By this provision a good many people in the country, where incomes are often under the above sum, will henceforth belong to clubs and will receive medical attendance accordingly. On the other hand, the clubs are expressly prohibited from allowing members to continue their membership when they become employers and have an income of more than 4000 marks (£200) per annum. With regard to medical attendance, a certain improvement is made by a provision stating that only qualified medical men may be admitted to club practice; the abuse existing in certain clubs of allowing attendance by notorious quacks will thus be abolished. This is one of the few favourable points of the law; but the principal wish of the great majority of the profession that free choice of a medical attendant should be made compulsory has not met the approval of the legislature. There are but few paragraphs of the law dealing with the question of club practice; there must be written contracts between the clubs and their medical men, but the particulars of the contracts are in all respects left to be settled by mutual agreement, so that the clubs are at liberty either to appoint a certain number of medical men or to introduce the free-choice system. The law provides only that there may be a choice for the members between at least two medical men. Nothing has been left in the new law of the highly objectionable provisions of the original scheme instituting arbitration courts with power to compel a medical man to retain a club appointment even in the case of a disagreement and to fine him for disobedience. The Government and Parliament were, in the course of the debates, convinced that it was not desirable for patients to be attended by a medical man working under compulsion and only *pro formâ* to avoid a fine. If no agreement has been entered into, the committee of the club will be authorised to pay the members a certain sum over the usual sick-pay and to leave it to them to consult a medical man as private patients. The law has satisfied neither the profession nor the sick clubs. It is very likely that local medical strikes will frequently take place, although a general strike of the profession is not probable. At the last meeting of the Medical Union in Stuttgart, where 23,625 medical men were represented, a resolution was unanimously adopted to the effect that the medical profession represented by the Medical Union was very much disappointed in the new law, and had no longer any confidence that their grievances will be considered by Parliament. The committee of the Union will open a central office for the consideration of every contract between a sick club and members of the Union; members are pledged not to agree to any contract without the assent of the Union. Contracts will be approved by the Union only when they do not hinder the introduction of the free-choice system, and when the fees are in accordance with the work. Club members earning more than 2000 marks per annum will not be entitled to attendance at the reduced fees of ordinary club patients, but the club will have to pay for them the fees of private patients. The local committees will send the contracts to the above office and the members are also requested not to renew existing contracts without giving previous notice to the office. The above resolution will certainly inaugurate an era of severe struggles and conflicts. This is also the opinion of the

Association of Sick Clubs as expressed at its recent meeting, where the attitude of the medical profession was very much blamed.

A Medical Orchestra.

Following the example of their professional brethren in Paris the Berlin medical men have recently founded an orchestral society which has been so well supported that at the inaugural meeting 60 medical men were present as members. It has been decided that wives and daughters of medical men may also be admitted to membership, and it is hoped to have all the instruments played by amateur performers sufficiently accomplished to make the engaging of professional musicians unnecessary. Dr. Pollak, well known both as an ophthalmic surgeon and also as a musician, will act as conductor, and Dr. Joachim, editor of the *Berliner Aerzte Correspondenz*, will be the general manager. Concerts are to be given for the benefit of medical benevolent funds.

July 17th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Pasteur Institute, Kasauli.

THE work done at this institute since August, 1900—the date of its inauguration—is the subject of a report by its director, Major W. F. Harvey, I.M.S. In all, 11,305 cases have been treated since the above date with satisfactory results, there being only four failures of the treatment. In 1910 the number treated amounted to 2073, as against 1937 for 1909.

Annual Indian Medical Service Dinner at Simla.

The annual dinner of the Indian Medical Service took place on June 19th, when Surgeon-General C. P. Lukis, I.M.S., presided, and in all 38 sat down.

Calcutta.

Calcutta is still perturbed about its water-supply. Muddy water has been passing through the new pipes, and a committee of inquiry has been appointed to find out the cause. The Calcutta corporation has decided to give a piece of land for a wing of a hospital in commemoration of the late King.

School of Tropical Medicine and Practice.

The scheme for the establishment of the above school at Calcutta is more or less mature, and it is hoped to have the first course of instruction for post-graduates started this cold weather. The scheme was put forth by Surgeon-General Lukis. He has also recently spoken in the Legislative Council in favour of an independent medical service. There is no doubt that the time has come for a definite pronouncement from Lord Morley on the subject. Schools of medicine are putting out graduates in medicine every year, and the question is what is to become of them.

June 24th.

Obituary.

THOMAS LAW WEBB, M.D., B.CH. BIRM., M.R.C.S. ENG., L.R.C.P. LOND.

ON July 3rd there passed away at Weston-super-Mare Dr. T. Law Webb, of Ironbridge, Shropshire, who was in many respects one of the most noteworthy general practitioners in the Midland counties.

Thomas Law Webb was born in Ironbridge in 1846, and commenced his medical life as apprentice to his father at the age of 17. Three years later he entered Sydenham College, Birmingham. He took the M.R.C.S. in 1870 and the L.R.C.P. in 1872. He lived practically all his life in the place where his father and his grandfather had lived as medical men before him, joining his father as partner and eventually taking over the practice. The district gradually altered in social position and the work in consequence became harder and less remunerative, yet for more than 40 years he devoted himself to the study of medical science, and especially of pathology, with an enthusiasm which never faltered. During the early years of practice he studied anatomy and physiology, and he passed the first F.R.C.S., no mean feat for a busy practitioner. He taught himself German in order that he might keep in touch with advanced thought in his special subjects, and often corresponded with German writers. After days spent in laborious work he would spend his evenings with the microscope perusing the developments of pathology. He chiefly worked at the diseases of the blood and the protozoal diseases in man and animals, on both of which he became a recognised authority, but he was profoundly interested in the etiology of cancer. He wrote many valuable papers on these subjects, which were published in our columns, in those of the *British Medical Journal*, and in the *Birmingham Medical Review*, of which he was for a time one of the joint editors. His best known work was that on "Cancer Houses," founded on observations made in his own registration sub-district of Madeley, and extending over a period of some 60 years. His final work on this subject he did not live to publish, but his complete statistics brought up to date, together with careful maps of the observed area, showing the marked houses, are now in the best possible hands, and it is hoped they may yet be of service. At first unaided and unrecognised, he worked in his little laboratory far from any intellectual or scientific centre, far from his fellow workers, and unhelped by any meed of appreciation from those around him, but his zeal never abated and his keenness never became blunted. Later in life his work and character began to be appreciated. In 1897 the title of Associate of Mason's College, Birmingham, was conferred upon him. In 1901 the newly founded University of Birmingham conferred upon him the honorary degrees of M.B. and Ch.B., a mark of recognition which gave him the greatest pleasure. In 1903 he was awarded the degree of M.D. for his thesis on "The Etiology of Cancer with Special Reference to Cancer Houses." In 1897 he founded the Clinical and Pathological Section of the Shropshire and Mid-Wales Branch of the British Medical Association, and year after year he was elected its chairman, and later he was president. In 1898 he was elected a member of the committee appointed by the Birmingham Branch for the investigation of local conditions affecting malignant disease. In the same year he was appointed honorary pathologist to the Salop Infirmary and soon after to the Shrewsbury Eye, Ear, and Throat Hospital. He continued to hold these posts, which were created for him, until the present year.

To the bare facts of Dr. Law Webb's life we are able to add a brief appreciation by a personal friend. "Of fine presence he was one of whom his professional brethren felt proud, a single-minded man who followed the highest ideals both in his life and in his practice. His mind retained to the last the freshness of youth, and there was nothing he liked better than to attract young medical men around him and inspire him with his own enthusiasm. His home was a very happy one and a centre for high thinking and high ideals in his own little town. He himself was a charming host, a man with wide human sympathies, a quiet fund of humour, and an unfailing store of quaint old-world sayings and old-world stories. Water-colour sketching and astronomy were his principal hobbies, and he studied the stars through a telescope of his own making. I have often heard it regretted that he did not live in some university town where his gifts and his work would have been better appreciated; but it may well be that lives such as his, lived simply and quietly out of the world's sight, 'still loftier than the world suspects,' do much to raise and ennoble the profession of medicine."

Dr. Webb had long looked forward to retiring from practice and devoting himself to cancer research, and he patiently accumulated stores of observation and knowledge with this end in view, but the pay was too poor and the work, especially his contract work as a colliery surgeon, was too hard for him. When at last he retired from general practice he was a worn-out man, and the task, even though it was a labour of love, was impossible for him.

He died from cerebral hæmorrhage and was buried in the beautiful cemetery on the hill overlooking the town and bay of Weston-super-Mare. He was a brother of Captain Webb, the famous swimmer of the English Channel. He leaves a wife and daughter and two sons.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Corrado Bernabei, professor of internal

pathology in the Siena School of Medicine.—Dr. W. Blackburn, professor of pathological anatomy in the Georgetown University School of Medicine, Washington.—Dr. Charles H. Dixon, lecturer on surgery in Washington University, St. Louis.—Dr. Gregorio Manca, professor of physiology in the Sassari School of Medicine.—Dr. Rudolf Albrecht Koehler, surgeon-general in the Prussian army and for some years professor of military surgery in the Kaiser Wilhelm's Academy. He was from 1874 to 1883 assistant to Professor v. Bardeleben in the Surgical Clinic of the Charité. His name should not be confounded with that of his junior namesake, Surgeon-General Albert Koehler, who succeeded him in the Charité and also at the Kaiser Wilhelm's Academy. —Professor A. Mitscherlich, a well-known Berlin surgeon. He was the son of the eminent Heidelberg chemist, Professor Eilhard Mitscherlich, and was for many years assistant to Professor Langenbeck. He was 79 years of age. His published works dealt with various surgical subjects, also with cocoa and chocolate as foods, and with alcohol poisoning.—Dr. Hans Leyden, nephew of the eminent professor, has died in Berlin from septic infection. He was for many years in practice amongst the foreign residents in Madrid.

THE NATIONAL INSURANCE BILL.

OUR readers will certainly have followed the progress of the Bill in Committee, while our Parliamentary correspondent continues to supply a summary of the principal events as they may affect the medical profession.

On Wednesday in last week progress was reported while the subject of sickness benefit (Clause 8) was under discussion. A highly interesting debate was originated by an amendment proposed by Mr. Austen Chamberlain to exclude treatment in sanatoriums from the sickness benefits on the grounds that such treatment was not really the ordinary work of insurance against sickness. A speech by Dr. Addison made clear to the House the logical grounds on which the treatment of tuberculosis in sanatoriums is founded and showed that from the great drain on the funds of the provident societies made by their tuberculous subscribers, to use his words, "it will be nothing less than a national calamity were this clause to be deleted from the Bill." Dr. Esmonde, Dr. Chapple, and Dr. Hillier made interesting contributions to the debate, the last-named shrewdly pointing out that to provide sanatorium treatment merely for the insured would not check the spread of phthisis in the home. The Chancellor of the Exchequer suggested that later on it might be found possible to extend sanatorium benefits to the dependents of the insured, and Mr. Austen Chamberlain withdrew his amendment, understanding that to some extent the use of sanatoriums was the subject of a large experiment.

On Monday, July 17th, progress was made with the Bill when Sir A. Griffith-Boscawen moved an amendment to Clause 8 (1) *e*, which deals with the maternity benefit, to grant medical benefit also to the women entitled to maternity benefit. Mr. Lloyd George could not accept the amendment, but later moved an amendment providing that a wife who worked and was insured should receive sick pay of 7*s*. 6*d*. a week as well as maternity benefit. The amendment was accepted, and is a very large concession to the general feeling that the maternity benefit was inadequate if it was to prove the source of racial security aimed at. On Tuesday Clause 8 and on Wednesday Clauses 9 and 10 were definitely finished with.

The following memorial, to be sent to the Chancellor of the Exchequer, is being signed by members of the House of Commons:—

We, the undersigned Members of Parliament, respectfully urge upon the Chancellor of the Exchequer the desirability of amending, where necessary, the National Insurance Bill, so as to include the following provisions:—

(1) That there should be a schedule for medicines and medical appliances of prices approved by the Insurance Commissioners for each district, and that insured persons at their own choice shall be empowered to take their prescriptions and orders for drugs and appliances forming part of the medical benefit to any person, firm, or corporate body lawfully entitled to carry on the business of a dispensing chemist, provided that such person, firm, or corporate body is willing to supply the medicines, &c., at the schedule price.

(2) That medicines for the insured should be dispensed by or under the direct supervision of a qualified pharmacist.

(3) That there should be representation of pharmacy on the various advising and administering bodies.

(4) That the administration of medical benefit may be in the hands of the Health Committees rather than those of the friendly societies.

THE GENERAL MEDICAL COUNCIL AND THE BILL.

The President of the General Medical Council, Sir Donald MacAlister, has addressed the following important communication to Mr. Lloyd George:—

299, Oxford-street, London, W., July 12th, 1911.

The Right Honourable the Chancellor of the Exchequer.

DEAR SIR,—With reference to your letter of June 13th, the Committee of the General Medical Council desire me to express their acknowledgments for your courteous reply to the communication concerning the National Insurance Bill which was addressed to you on behalf of the Council. The committee recognise fully the value of the assurances you have given of your personal agreement with a number of the Council's recommendations; but they deem it their duty to urge the necessity of introducing into the Bill certain explicit amendments for the purpose of giving legislative effect to the intentions and desires you express.

I am accordingly instructed to invite your favourable consideration to the following suggestions and explanations, and to inquire whether amendments in the sense indicated will be proposed in Parliament at the instance of the Government. The headings refer to those of your reply and of the Council's report.

1 (*a*). *Insurance Commissioners.*—Following the wording of Clause 43 (5) of the Bill, add at the end of Clause 41 (1) the words: ", but so that one at least of the Commissioners so appointed shall be a duly qualified medical practitioner."

1 (*b*). *Advisory Committee.*—In Clause 42, after the words "consisting of," insert the words "duly qualified medical practitioners."

1 (c). *Local Health Committees.*—Under Clause 42 (5), it may happen that not more than two medical practitioners are appointed on a Health Committee of twenty-two. Having regard to the important functions of the committee in relation to "medical benefit," it appears desirable that provision for a more adequate representation should be made.

2. *Approved societies.*—From facts within its knowledge, some of which are set forth in the reports enclosed herewith for your information, the Council is convinced that the conditions of practice under the control of various associations, which purport to supply "medical aid" to the public, are in general adverse to the highest efficiency of the practitioners employed, and therefore to the welfare of their patients.

The Council thinks it imperative in the public interest that these conditions should not be reproduced in a national scheme for the administration of "medical benefit." It must therefore press strongly for an amendment of Clause 14, which will have the effect of placing such administration under the exclusive control of the Local Health Committees and the Insurance Commissioners. Thus in Clause 13 (1), lines 25, 26, the words "and, subject ..... medical benefit," and in Clause 14 (1) the words "approved society and" should be deleted.

As regards "maternity benefit," the committee understand from your reply that this is not considered to be of the nature of "medical benefit," but rather as a form of "sickness benefit," applicable to the case of a woman disabled from her ordinary employment on account of her confinement. If this view is correct, the committee fail to see that any provision is made for the attendance of a medical practitioner or midwife at and after confinement in the case of an insured woman. Clause 8 (6) excludes the recipient of "maternity benefit" not only from "sickness benefit" but from "medical benefit."

Referring to paragraph 7 of your reply, "maternity benefit" is there treated as equivalent to "sickness benefit in times of confinement"; or in the words of Clause 8 (*c*) it is a payment of *thirty shillings* to insured women "whilst rendered unfit to provide their own maintenance" during four weeks after childbirth. Some form of "medical treatment and attendance" must clearly be provided as well as ordinary maintenance in such cases. It appears therefore to follow that in Clause 8 (6), to which you refer us, the words "or medical benefit" should be deleted.

3. The committee desire to be assured that in making "arrangements" with duly qualified medical practitioners under Clause 14 (1) the Local Health Committees will have instructions, subject in each case to the approval of the Insurance Commissioners, (1) to form a panel, including all practitioners of good standing who are willing to act within a given district; (2) to allow an insured person to choose (say annually) the practitioner on the panel who is to attend him; (3) to provide specially (e.g., by an arrangement with a hospital, as hereinafter suggested) for consultations or serious operations where these are necessary; (4) to provide specially for the treatment of maternity cases, whether attended by a practitioner or a midwife.

In order to make it clearer that the "arrangements" in question shall be submitted to the Insurance Commissioners before they are confirmed, the committee desire that Clause 14 (1) should be altered so as to read as follows: "For the purpose of administering medical benefit every Local Health Committee shall, subject to the approval of the Insurance Commissioners, make arrangements with duly qualified medical practitioners for insured persons to receive attendance and treatment from such practitioners."

The committee agree with you as to the exclusion of members of the profession who may show themselves unfit for the performance of a very responsible public duty; and they would point out that the Council takes a grave view of such misconduct, and is accustomed to exercise its disciplinary authority in cases of the kind.

4. The resources of voluntary hospitals are likely to be diminished by the operation of the National Insurance Scheme. Many of them depend largely on regular contributions from employers and from workmen. There is reason to apprehend that, in view of the weekly insurance payments to be made by both classes, these regular contributions may cease to be paid to the hospitals; they will in large measure be diverted to the Insurance Fund. On the other hand, the demand on the hospitals—for the highly skilled treatment provided in their wards by means of the gratuitous service of eminent physicians and surgeons, for the trained nursing that is necessary in cases of grave illness or operation, and for the provision of costly appliances and apparatus—will remain as at present. In many cases the "domiciliary treatment" of insured persons must be supplemented by treatment in the hospital ward if they are to have a fair chance of recovering their health and resuming their payments to the Insurance Fund.

In Clause 15 provision is made whereby Local Health Committees

may make arrangements, to the satisfaction of the Insurance Commissioners, for subsidising sanatoria or other similar institutions, apparently on the ground that such institutions have a claim on the fund in respect of the treatment therein of insured persons. In the view of the Council the voluntary hospitals have the same claim, and should be dealt with in the same manner. Under Clause 17 it is left to an "approved society" "to grant such subscriptions and donations as it may think fit to hospitals and other charitable institutions." The society may impose such conditions in respect of its subscription or donation as it thinks fit, but no reference of the conditions to the Insurance Commissioners is prescribed. The service rendered by the voluntary hospitals concerns the whole population, insured and uninsured, and the Council is apprehensive that their efficiency may be impaired, if they are constrained for financial reasons to accept the conditions laid down by "approved societies," subject to no review by the Insurance Commissioners or the Advisory Committee.

In Clause 12 (1) the "sickness disablement or maternity benefit" of an insured person without dependents, who is an inmate of a hospital supported by charity, is paid to the Local Health Committee—not to the hospital in which the patient receives both maintenance and medical benefit. If the insured person is in a sanatorium the Local Health Committee makes an "arrangement" with the institution to meet the cost: if the person is in a hospital it makes no such "arrangement." The result may be that a hospital, whose funds are already depleted owing to the establishment of the Insurance Fund, may at the same time be called on to bear the expense of "benefits" which the Insurance Fund has undertaken to provide.

The Council is strongly of opinion that in the interest not of the insured alone, but of the whole community, which is largely indebted to the voluntary hospitals for the training of medical men and for the improvement of medical knowledge and skill, it is both equitable and prudent to minimise the danger to which these institutions are exposed under the present provisions of the Bill. They should therefore be included under a clause similar to Clause 15 (1), and if need be omitted from Clause 17 as it stands. The Local Health Committees should, in other words, be empowered to make arrangements, to the satisfaction of the Insurance Commissioners, with hospitals for the treatment of insured persons therein. As regards the question of the inspection and approval of voluntary hospitals, which is alluded to in your reply, it may be pointed out that the administrators of the Hospital Sunday, King Edward, and other similar Funds throughout the country, take steps to satisfy themselves of the efficiency of the institutions to which they make grants, and that no well-conducted hospital objects to visitation and inspection by competent persons for such a purpose.

5. On the assumption that the administration of "medical benefit" is to be in the hands of the Local Health Committees, the purpose of the Council under this heading would be fulfilled if the first sentence of Clause 14 (1) were altered so as to read as follows: "Every committee shall also, subject to the approval of the Insurance Commissioners, make arrangements with duly qualified pharmacists for the supply of proper and sufficient drugs and medicines and surgical requisites to insured persons."

Seeing that injuries, accidents, and surgical disorders are as likely to disable the insured as affections requiring treatment by drugs alone, it seems obvious that provision should be made for the supply of the ordinary materials that are necessary in such cases. By entrusting the supply and dispensing of medicines, &c., to qualified pharmacists, who are subject to the provisions of the Pharmacy Acts, the maintenance of official standards of quality and purity would be ensured.

6 and 7. The points raised under these headings have already been dealt with above.

8. The committee recognise that the conditions in Ireland differ in certain respects from those in England and Wales and in Scotland. But they are satisfied that the general considerations which they have ventured to lay before you in the foregoing paragraphs are no less applicable to Ireland than to the rest of the United Kingdom. In the case both of "deposit contributors" and of other insured persons, it is eminently desirable that a panel, consisting of practitioners who are willing to act, should be provided in Ireland as elsewhere, and that the medical service of the insured should be distinguished from the medical service under the Poor-law.

I am, yours very faithfully,
DONALD MACALISTER, President.

The following is the reply received from the Chancellor of the Exchequer:—

Treasury Chambers, Whitehall, S.W., July 13th, 1911.

DEAR SIR,—I am desired by the Chancellor of the Exchequer to acknowledge the receipt of your letter of the 12th instant on behalf of the Committee of the General Medical Council, offering suggestions for the amendment of the National Insurance Bill, which shall receive careful consideration. Yours faithfully,

Principal Sir Donald MacAlister, K.C.B. R. G. HAWTREY.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE BILL.

A meeting of the College was held on Thursday, July 13th, and the following statement has been sent to us for publication:—

RESOLUTIONS AND RECOMMENDATIONS OF THE COLLEGE RELATING TO THE NATIONAL INSURANCE BILL.

These fall under the headings of: 1. Contract practice. 2. The representation of the medical profession upon the boards administering the Act. 3. The administration of medical and maternity benefits. 4. Limitation of the income of those entitled to medical benefit. 5. The choice of doctor. 6. The dispensing of medicines. 7. Special medical services. 8. Disease or disablement caused by misconduct. 9. Sanatorium benefits. 10. Powers and duties of Local Health Committees.[1]

1. *Contract practice.*—The College views with great apprehension the prospect that all medical treatment of insured persons under this Bill should be based entirely upon the contract system, and passed the following resolution:—

"The Royal College of Physicians is of opinion that a system of per capita contract practice among the industrial classes, if it should become universal, as appears to be contemplated throughout the working clauses of the National Insurance Bill, will lower the standard of medical practice, and will prove in this way injurious to the public and to the profession."

2. *The representation of the medical profession upon boards administering the Act.*—Alterations should be made providing that not less than one-fourth of the Insurance Commissioners shall be registered under the Medical Act; that the profession shall be represented upon the Advisory Committee; and that the medical practitioners upon the panel in each district shall be represented upon the Local Health Committee by not less than two registered practitioners.

3. *The administration of medical and maternity benefits.*—These benefits should be administered by the Local Health Committees and not by approved societies.

4. *Limitation of the income of those entitled to medical benefit.*—A clause should be added providing that:—No insured person shall be entitled to medical benefit who is in receipt of an income larger than that which shall appear just to the Local Health Committee. Also that *voluntary* contributors having an annual income larger than that which would entitle *employed* contributors employed otherwise than by manual labour to the receipt of medical benefits shall not receive such benefits.

5. *The choice of doctor.*—The following clause should be substituted for the first part of the clause of the Bill dealing with the administration of medical benefits:—"Every Local Health Committee shall for the purpose of administering medical benefits make, to the satisfaction of the Insurance Commissioners, arrangements for each insured person to receive attendance and treatment from a registered medical practitioner, selected by the insured person from a list of registered medical practitioners approved by the Local Health Committee, subject to the consent of the practitioner selected." The local panel of practitioners shall be open to all registered medical practitioners in the prescribed area who apply to be placed upon it.

6. *The dispensing of medicines.*—Provision should be made that the Insurance Commissioners shall sanction the dispensing of medicines by medical practitioners in towns, as well as in the country, when the circumstances are such as to make it expedient to do so; for the supply of proper surgical dressings and appliances; that steps should be taken to ensure that the drugs and medicines are of the standard required by the British Pharmacopœia; that in all cases the dispensing of prescriptions is carried out by qualified persons; for the supply of drugs and appliances needed in case of emergency.

7. *Special medical services.*—The existing schedule for extra payments under the Poor-law is so extremely scanty that it hardly affords any guide for drawing up one for the remuneration of doctors under the Insurance Bill. The only fees specifically allowed under the Poor-law are those for fractures and dislocations of the limbs, strangulated hernia, and amputations. Upon consideration the College is of opinion that the schedule for special medical services should be framed by the Advisory Committees and the Local Health Committees, the varying nature of the conditions under which services requiring special payment would have to be performed rendering it difficult, if not impossible, to draw up a schedule which would be equally applicable to all districts. Operations, the treatment of cases requiring several visits in the 24 hours, examination of persons for certification as insane, consultations and similar special services, should obviously be specially paid for. In whatever form payment is made it appears only just and right that in addition the distance that the medical man has to go should be considered, and that an allowance be made for each mile which has to be travelled, as is now done in the case of public vaccinators under the Poor-law.

8. *Disease or disablement caused by misconduct.*—These cases, which must be included in any scheme of State insurance, are not at the present time usually admitted to club benefits. It is necessary, therefore, that the general medical remuneration should be higher if they are to be included.

9. *Sanatorium benefit.*—In regard to tuberculous disease, the National Insurance Bill in its present form provides for only a limited class of cases, and a large proportion cannot be dealt with by what is described as "sanatorium" treatment. The College is aware that the Bill also provides for other than tuberculous patients, but the conditions sought for are specially applicable to the latter, which need therefore only be considered here. To make the Bill effective provision would have to be made for the following classes of cases:—

CLASS I. (cases suitable for "sanatorium" treatment proper).—(*a*) Closed tuberculosis, in which bones or glands or internal organs are involved. (Cases requiring surgical treatment would probably be temporarily received into hospitals.) (*b*) Early and incipient cases of pulmonary tuberculosis capable of improvement or arrest. (*c*) Certain other cases that would derive temporary benefit from hygienic instruction.

CLASS II.—Under "Sanatorium Benefits" other arrangements should be included for such cases as are unsuitable for more formal institutions—e.g.: (*a*) Many village cases of more advanced pulmonary tuberculosis which might be dealt with in cheap shelters or in well-adapted shelter homes, and many cases in towns which would be unavoidably confined to their own homes. In either case properly secured sanitary, nursing, and medical supervision would be necessary, the continuance of benefits to depend on the continued obedience to the instructions of doctors and nurses. (*b*) In special homes for advanced cases. Or (*c*) In properly adapted portions of already existing institutions for advanced cases.

CLASS III.—Special or general hospitals will receive certain early and acute cases for purposes of diagnosis and treatment, previous to their being drafted into one or other of the above institutions. If these recommendations are accepted it follows that "sanatorium benefits" should be enlarged to include the provision of shelters and other requirements for the hygienic treatment of cases of pulmonary tuberculosis outside any special institution, and should also be extended to include sick allowance for cases treated in other places than in sanatoria, provided certain hygienic conditions laid down are observed. The clauses of the Bill concerned, viz: § 8. 1 (b); § 12. 1 and 2; § 13. 1, and § 15. 1, should be amended in the above sense. § 8. 1 (b) should be amended to include the treatment in sanatoria of cases suffering from tuberculosis likely to recover, or from such other diseases as the Local Government Board with the approval of the Treasury may appoint;

[1] The resolutions and recommendations are given here in relation to their subject-matter. Marginal references were added to the clauses of the Bill where such definite reference was possible. Specific amendments to these clauses are given in the form of an appendix.

and the treatment of patients suffering from advanced pulmonary tuberculosis in other institutions and places (in this Act called Sanatorium Benefit).

The College draws attention to the great importance of keeping the medical practitioner throughout the country interested in and in educational touch with the clinical aspects, diagnosis, and treatment of tuberculous disease. With this object in view the College advises: (i.) That all village group shelters and all other sanatorium treatment, except in the larger institutions connected with counties, cities, or large boroughs, should be medically administered by practitioners selected from the district in which such sanatoria are situated or in which advanced cases included under Class II. reside; (ii.) that the clinical laboratories of health departments for diagnosis, &c., should be within touch of all local institutions; (iii.) that research should be confined to a few special central hospitals, or to large sanatoria attached to counties, cities, or boroughs; and (iv.) that information with regard to the most recent advances in treatment, diagnosis, and pathology should be distributed from such research centre to each sanatorium, practitioner, or medical officer.

The College is of opinion that special remuneration will be required for the attendance of medical men upon these cases and for the additional district and institutional nurses requisite.

10. *The powers and duties of Local Health Committees* require to be more definitely described in order that that they should not clash with (those of) the existing sanitary authorities.

The following are the actual amendments of the Clauses of the National Insurance Bill recommended by the College and issued as an appendix to the paper headed Resolutions and Recommendations of the College relating to the National Insurance Bill:—

Page 2.—Clause 1, after line 20, insert "provided also that Voluntary Contributors having an annual income larger than that which would entitle Employed Contributors employed otherwise than by way of manual labour to the receipt of medical benefits, shall not receive such benefits."

Page 6.—Clause 8, line 4. In connexion with this portion of Clause 8 schedules for special medical services not mentioned in the Bill should be provided by the Local Health Committees.

Page 13.—Clause 13, line 25, delete from "and" to "benefit," line 26. The object of the omission of these words is to prevent an approved society administering medical benefits. Line 29, the words "medical, maternity and" should be inserted before the word "sanatorium," and "s" added to "benefit."

Page 14.—Clause 13. Note to be appended to line 26. Altered as in Section (8) of full Report.

Page 14.—Clause 14, line 32 to read as follows:—Every Local Health Committee shall for the purpose of administering medical benefits, make to the satisfaction of the Insurance Commissioners, arrangements for each insured person to receive attendance and treatment from a registered medical practitioner selected by the insured person from a list of registered medical practitioners approved by the Local Health Committee, subject to the consent of the practitioner selected. The local panel of practitioners shall be open to all registered medical practitioners who apply to be placed upon it. Line 37, omit the words "society or" after "such."

Page 15.—Clause 14, line 3, omit the words "situate in a rural district." Line 4, add "due provision being made as to drugs and appliances needed in cases of emergency." The object of these alterations is to enable practitioners to dispense their own medicine, if it is from any cause desirable for them to do so, and to provide for emergencies.

Page 15.—Line 5 to 15. Omitted if Clause 14, Sections 1 and 2 are satisfactorily amended.

Page 16.—Clause 16, line 17, omit "the" to end of line 18.

Page 16.—Line 21, omit from "by" to end of line 22. The object of the omission of these words is to prevent an approved society administering maternity benefits.

Page 19.—Clause 21, line 8, after "benefits" insert the words "other than medical and maternity." Line 28, the same words to be inserted after "benefits."

Page 35.—Clause 41, line 16, after "Commissioners" insert "of whom not less than one-fourth shall be registered under the Medical Act."

Page 36.—Clause 42, line 3, after "societies" insert "of the medical profession." This is to ensure the presence of registered medical practitioners on the Insurance Commission and the Advisory Committee.

Page 37.—Clause 43, line 11, for "duly qualified" read "registered." Line 12, after "Practitioners" insert "nominated by the panel."

Page 37.—Clause 44: The powers and duties of the Local Health Committees require to be more definitely described in order that they should not clash with the existing Sanitary Authorities.

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH AND THE BILL.

A memorandum has been prepared on the Bill by a committee of the Royal College of Surgeons of Edinburgh, and has been sent to all Members of Parliament. It is signed by the President, Dr. George A. Berry, and the secretary, Dr. R. McKenzie Johnston. The memorandum sets out the amendments to the Bill demanded by the medical profession, and points out that this is the third occasion on which the College has felt it to be its duty to press for delay in this very important piece of legislation. The memorandum then proceeds:—

It must be obvious that the medical benefits cannot be satisfactorily provided without the cordial coöperation of a large body of medical men. In spite of this admitted fact the Bill was drafted and presented to Parliament without any conference with those who are materially affected by it and who have the widest knowledge of what is required. It has too readily been assumed that the scheme for medical benefits proposed by the Bill is the one and only possible method by which an effective medical service can be provided. The profession is practically unanimous in holding that the amendments mentioned are essential to the present Bill as it stands, but it should be clearly understood that, even if such emendations were accepted *in toto*, a large proportion of the profession would still regard the Bill as an oppressive measure interfering with the professional life and freedom of the medical practitioner in a way in which no other profession is interfered with. It is therefore desirable that, if the Bill as a whole cannot be delayed, *the medical benefit part should be withdrawn*. A well-matured scheme could then be produced next session after consultation with the profession which has the widest knowledge of the conditions of life among the poor during sickness.

The memorandum stipulates that the medical member of the Insurance Commission should not hold office for longer than 10 years, as otherwise he would tend to lose touch with professional work. The whole document is in line with our views many times expressed. The willingness of medical men to accept a position concerning which they have never been consulted has been taken for granted, and now that their willingness is found not to exist a strong argument for delay is furnished.

KING EDWARD'S HOSPITAL FUND FOR LONDON AND THE BILL.

The Executive Committee of King Edward's Hospital Fund for London recently appointed a subcommittee to inquire into the probable effect of the National Insurance Bill upon the hospitals receiving grants from the Fund. The subcommittee ascertained the views of 32 of the principal London hospitals and drew up a report thereon. Upon receiving this report the Executive Committee agreed upon the following statement which represents an abstract of the views of these hospitals or their secretaries. The divergent nature of the replies makes it evident that any statement as to the probable effect of the Bill must be largely speculative. The statement runs:—

As the Bill now stands the Insurance Scheme does not apply to certain classes, nor, in the earlier years of its operation, to the families and dependents of the insured. One of the largest of these hospitals estimates that between 60 per cent. and 70 per cent. of the persons now treated in that hospital will be unaffected by the Bill. It further appears from the replies that the balance of opinion amongst these hospitals inclines in the following directions:—

(1) That as regards the number of in-patients it is anticipated that the effect, if any, will be rather to increase the total numbers, even though the proportion of the tuberculous cases may be eventually reduced.

(2) That as regards out-patients it is anticipated that a different class of out-patient may have to be dealt with, and that the effect on numbers, if any, will be towards reduction.

(3) That there is widespread apprehension that the contributions from employers and employed will be reduced.

(4) That Clause 15—"Administration of sanatorium benefit"—will not, it is thought, have any considerable effect in the relief of general hospitals.

(5) That Clause 17, "Power to approved societies to subscribe to hospitals, &c.," is not thought likely to operate beneficially if such contribution is optional, and, if compulsory, there is some apprehension lest this might lead to intervention in management.

(6) That while complete statistics are not available as to the numbers of members of Friendly Societies who at present enjoy the benefits of hospital treatment, it appears that a considerable proportion of adult male patients at these hospitals are members of Friendly Societies or clubs; but that little contribution to these hospitals is at present received from such societies.

The Executive Committee adds to the statement that while under Clause 8, as amended, the Bill purports to confer on insured persons full medical treatment and attendance, including medicines and surgical appliances, the only means for supplying such benefits, in non-tuberculous cases—apart from optional contributions of approved societies to hospitals and charitable institutions (Clause 17)—appears to be by arrangements made with individual medical practitioners—(Clause 14 (1)). The Executive Committee having given due regard to the replies received from the hospitals, shares the opinion generally held that under such arrangements the utilisation of hospitals for more serious cases is not likely to diminish and may, not improbably, increase, with corresponding effect on expenditure, and that the Bill in its present form will tend rather to the reduction than to the augmentation of the hospitals' revenue.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED.

The council of this society has forwarded to all its members the following resolutions adopted by it in reference to the Bill. The council urgently requests them to use their influence with their Parliamentary representatives, and with others, to secure for the medical profession the very moderate concessions asked for:—

1. That medical attendance be limited to compulsory contributors, whose total income does not exceed £2 a week.
2. That the appointment and control of the medical officers and the

administration of medical benefits be exclusively in the hands of the Local Health Committee.

3. That two-fifths of the Insurance Commissioners shall be medical men.

4. That the principle be adopted of a wide panel of medical men in each district, including all registered practitioners willing to serve, from whom, subject to the consent of the practitioners selected, the insured person may choose his medical adviser.

5. That this Council are strongly of the opinion that contract work is disadvantageous to the public and unfair to the medical profession; but should a Health Committee under the Bill decide on the adoption of a contract rate for a county the capitation fee should in no case be less than eight shillings, to include only ordinary medical attendance.

6. That Clause 42 of the National Insurance Bill be altered so as to include in the Advisory Committee medical men representing those employed under the Act.

The council of the society has also forwarded copies of the above resolutions to all members of the House of Commons.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly examination in Practical Pharmacy the following candidates were approved:—

John Gordon Ackland, St. Bartholomew's Hospital; Wilfred Herbert Alderton, London Hospital; Christian Philip Sidney Allingham, London Hospital; John Andrew, St. Bartholomew's Hospital; Gideon Albertyn Beyers, St. Bartholomew's Hospital; Edward Billing, B.A. Cantab., Cambridge and Guy's Hospital; William Somerset Birch, King's College Hospital; Norman Briggs, Leeds University; Lionel Charles William Cane, Guy's Hospital; Hugh Forster Chillingworth, St. Bartholomew's Hospital; Joseph Woods Clayton, London Hospital; Ernest James Cooke, New Zealand University and Guy's Hospital; William Hern Cornelius, L.D.S. Eng., Middlesex Hospital; Cyril Lister Curle, Birmingham University; Harold Archibald Douglas, Cambridge University and St. Bartholomew's Hospital; Herbert Nisbet Eccles, Guy's Hospital; David John Evans, University College, Cardiff; Bernard Creasy Ewens, B.A. Cantab., Cambridge University and St. George's Hospital; Cyril James Gozney Exley, Leeds University and University College; Frederick Ernest Feilden, Middlesex Hospital; Edwin Llewellyn Zenas Fickling, King's College and St. George's Hospitals; Claude Henry Fischel, Middlesex Hospital; Sidney William Fisk, Middlesex Hospital; John Fox-Russell, Middlesex Hospital; Gloster Tyndall Garraway, University College; George Harris Haines, University College; Douglas Noel Hardcastle, St. Mary's Hospital; Robert John Harley-Mason, Middlesex Hospital; Harold James Beresford Heelas, Middlesex Hospital; Arthur Martin Henry, L.D.S. Eng., Guy's Hospital; James Stanley Higgs, St. George's Hospital; Walter Owen Hughes, Liverpool University; Ifan Septimus James, University College; Drue Drury Butler Jay, St. Bartholomew's Hospital; Tudor Philip William John, University College, Cardiff; Frank Edwin Johnson, London Hospital; Gerald Patrick Kidd, St. Thomas's Hospital; Charles Hardiman Laver, Guy's Hospital; Cyril George Learoyd, St. Thomas's Hospital; Sidney John Liddon Lindeman, St. Bartholomew's Hospital; Henry Guy Ludolf, Leeds University; John Edward Carbery Maguire, St. Bartholomew's Hospital; Rodney Honor Maingot, St. Bartholomew's Hospital; Donald Samuel Eccles Milligan, St. Thomas's Hospital; William Hubert Milligan, St. Thomas's Hospital; Charles Frederick Newman, Birmingham University; Ernest Noble Perham, University College and Middlesex Hospitals; Harold Dobson Pickles, Leeds University; Guy Algernon Pratt, Guy's Hospital; Edward Austin Prichard-Evans, University College, Cardiff; Charles Edward Reckitt, Guy's Hospital; Robert Mowat Reid, St. Bartholomew's Hospital; Walter Graham Reynolds, St. Mary's Hospital; Francis Charles Robbs, St. Mary's Hospital; Charles Young Roberts, St. Thomas's Hospital; Laurence Cecil Sebastian Roche, B-ès-Lettres, Caen, St. Thomas's Hospital; Arthur Rose-Innes, University College; Cecil Spurling Staddon, St. Thomas's Hospital; William Fletcher Stiell, St. Thomas's Hospital; Hugh Stott, Sheffield University and University College Hospital; James Llewellyn Montford Symns, B.A. Cantab., Cambridge University and Guy's Hospital; Cedric Rowland Taylor, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Gordon Stuart Terry, Bristol University; Bryan Montague Tuke, Middlesex Hospital; John Wells Whiteman, Middlesex Hospital; Ismail Zaki, University College; and Thomas Fernando Zerolo, St. Bartholomew's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Materia Medica and Pharmacy.—H. G. Steel, Durham and St. Mary's Hospital.
Anatomy.—J. C. P. Bayley, Manchester; and W. J. Wood, University College Hospital.
Physiology.—J. C. P. Bayley, Manchester; and G. B. Holroyd, London Hospital.

UNIVERSITY OF OXFORD.—In the examinations for the Diploma in Public Health the following have satisfied the examiners:—

Part I.—William R. Honeyburne, William H. L. McCarthy, and William F. Roach.
Parts I. and II.—Duncan Davidson, B.M., Brasenose, Gilbert H. Dive, Samuel Hamilton, Helen B. Hanson, Lancelot Kilroy, and Murdoch McKinnon.
Part II.—Harold S. Burnell-Jones, David G. Evans, and Francis R. Seymour.

Mr. John H. Evans, M.B., M.Ch. Oxon., F.R.C.S. Eng., has been appointed by the Hebdomadal Council of the University of Oxford representative at the Third International Laryngo-Rhinological Congress, which will be held in Berlin at the end of August.

UNIVERSITY OF LIVERPOOL.—The following awards and appointments have been made in the Faculty of Medicine: Chairman, Professor Benjamin Moore: dean, Mr. K. W. Monsarrat; lecturer in public health bacteriology, Dr. R. Stenhouse Williams; senior demonstrator of anatomy, Dr. W. P. Gowland; assistant demonstrator of anatomy, Dr. T. P. McMurray; J. W. Garrett International Fellow, Dr. O. T. Williams; lecturer in dental mechanics, Mr. Lewis Osborn; Robert Gee Fellow, Dr. J. Campbell; Johnston Colonial Fellow, Dr. A. Adams; Holt Fellow in Physiology, Dr. T. W. Wadsworth; Holt Fellow in Pathology, Dr. R. Stopford Taylor; Torr medal, A. N. Misbah; Gee prize, Miss P. M. Powell, R. Kennon, and A. Seddon (equal); Derby exhibition, H. Nield; Clinical School exhibition, J. R. D. Webb; University scholarship, H. S. Pemberton; Holt medals in physiology, H. S. Pemberton and R. E. Roberts.—The following degrees and diplomas have been conferred:—

M.D.—A. R. Jackson, G. W. N. Joseph, and A. G. W. Owen.
M.B. and Ch.B. (Honours).—J. Homer, R. Kennon, R. H. Knowles, T. H. Martin, H. Nield, A. L. Oluwole, Phoebe M. Powell, and A. Seddon.
M.B. and Ch.B. (Ordinary).—G. S. A. Bishop, W. H. Parry, and J. P. Rafter.
Diploma in Dental Surgery.—W. B. G. Jones.

DEGREES OF M.B. AND CH.B.

Final Examination.—Part I.: R. G. Barlow, A. D. Bigland, F.'G. F. Browne, H. V. Forster, H. W. Jones, N. P. Laing, R. Lee, M. T. Morgan, F. C. Plummer, Frances M. B. Price, H. Seddon, and S. N. Wright. Part II.: G. R. Barlow, A. D. Bigland, F. G. F. Browne, H. V. Forster, R. W. Gemmell, A.V. Glendenning, H. W. Jones, R. Lee, M. T. Morgan, F. C. Plummer, Frances M. B. Price, H. Seddon, T. O. Williams, and S. N. Wright.
Second Examination.—Part A., Anatomy and Physiology: G. D. Harding, R. Martlew. Part B., Materia Medica: Maud E. Bateman, E. B. Marsh, H. S. Pemberton, and J. St. G. Wilson.
First Examination.—Part I., Chemistry and Physics: Ruth I. Bateman, R. L. Blenkhorn, N. B. Capon, E. H. Eastwood, W. T. Evans, H. Garas, G. S. Graham, W. Griffiths, J. P. Johnson, C. H. G. Kelly, A. G. McColl, L. Oldershaw, H. C. Roberts, C. G. Skinner, and H. P. Williams. Part II., Biology: Ruth I. Bateman, R. L. Blenkhorn, N. B. Capon, E. H. Eastwood, W. T. Evans, H. Garas, G. S. Graham, W. Griffiths, W. G. R. Hinchliffe, J. P. Johnson, C. H. G. Kelly, A. G. McColl, E. J. McCormick, H. R. Mansergh, R. J. Minnitt, L. Oldershaw, F. G. Pailthorpe, H. C. Roberts, and C. G. Skinner.

DEGREE OF B.D.S.

First Examination.—G. G. Downie.

DIPLOMA IN DENTAL SURGERY.

Third Examination.—R. N. Lee and W. Williams.
Second Examination.—W. S. Hartley, E. T. Haworth, R. Stoddart, S. S. Tiffin, and S. L. Wallis.
First Examination.—H. W. Flinn, E. T. Haworth, H. O. Sumerling, and B. R. Townend.

UNIVERSITY OF ABERDEEN.—The following degrees were conferred on July 12th:—

Degree of M.D.—William Manson Fergusson, M.B., Ch.B., *Robert Philip Garrow, M.B., Ch.B., *Norman Stephen Gilchrist, M.A., M.B., Ch.B., John Phimister Mitchell, M.B., Ch.B., *Patrick Nicol M.B., Ch.B., *James Rae, M.A., M.B., Ch.B., Alfred John Williamson, M.A., M.B., Ch.B., and William Wood, M.B., Ch.B.
* Commendation for thesis.
Degree of Ch.M.—Frank Pearce Sturm, M.B., Ch.B.
Degrees of M.B. and Ch.B.—Alexander Middleton Brown, M.A., George Paterson Burr, Clifford Cuthbert Chance, William Jenkyns Cruickshank, M.A., Charles Stanley Glass, William Edward Glover, Herbert William Greig, B.Sc., Angus Mackintosh, James Robertson Murray, Peter Reid, and John Ross.
Degrees of M.B. and C.M.—Arthur Cyril Henry Dickman.

Diplomas in Public Health were conferred on:—

David Stewart Garden, M.B., Ch.B. Aberd., Peter Sinclair Hunter, M.A., M.B., Ch.B. Aberd., *David Rorie, M.B., C.M. Edin., George Irvine Thompson Stewart, M.A., B.Sc., M.B., Ch.B. Aberd., James Alex. Tolmie, M.A., M.B., Ch.B. Aberd., and *James Watt, M.A., M.B., Ch.B. Aberd.
* With credit.

The Lyon prize to the most distinguished graduate in medicine of the year and the John Murray Medal and Scholarship to the most distinguished graduate (M.B.) of 1911 were both awarded to James Davidson, M.B., Ch.B.

FOREIGN UNIVERSITY INTELLIGENCE.—*Cracow:* Dr. Franz Krzystalowicz has been appointed Extraordinary Professor of Dermatology. Dr. Erwin Miesowicz has been granted the title of Extraordinary Professor.—

Düsseldorf (*Academy of Practical Medicine*): Dr. Bauer has been appointed Lecturer on Serotherapy, a new departure, it would appear, as serotherapy has not hitherto been considered sufficiently important for a special lecturer to be appointed for it.—*Frankfort:* Dr. A. Reinhardt of Leipsic has been appointed Prosector of the Senckenberg Institute of Pathological Anatomy.—*Giessen:* Dr. Wilhelm Stepp has been recognised as *privat-docent* of Medicine.—*Innsbruck:* Dr. Johann Loos, Extraordinary Professor of Pædiatry; Dr. Geo. Juffinger, Extraordinary Professor of Laryngology; and Dr. Ludwig Mark, Extraordinary Professor of Dermatology, have been promoted to full Professorships.—*Kiel:* Dr. W. Runge has been appointed Oberarzt of the Clinic for Nervous and Mental Diseases, in succession to Dr. Raecke, who goes to Frankfort. Dr. H. Meyer has been recognised as *privat-docent* of Roentgenology and Light Therapy.—*Königsberg:* Dr. Walther Telemann has been recognised as *privat-docent* of Medicine.—*Leipsic:* Dr. Paul Hübschmann has been recognised as *privat-docent* of Pathological Anatomy.—*Munster:* Dr. Otto Krummacher, *privat-docent* of Physiology, has been granted the title of Professor.—*Paris:* Dr. Chauffard, Professor of the History of Medicine and Surgery, has been appointed Professor of Clinical Medicine.—*Prague* (*Bohemian University*): Dr. Ottomar Völker has been appointed Extraordinary Professor of Anatomy. Dr. Johann Jesensky, *privat-docent* of Odontology; Dr. Franz Samberger, *privat-docent* of Dermatology; and Dr. Josef Cisler, *privat-docent* of Laryngology, have been granted the title of Extraordinary Professor.—*Rostock:* Dr. P. Erdmann, *privat-docent* of Ophthalmology, has been granted the title of Professor.—*Vienna:* Dr. Zdarek has been recognised as *privat-docent* of Medical Chemistry.

THE INTERNATIONAL CONGRESS OF UROLOGY.—The triennial meeting of this association will commence its meetings on Tuesday next, July 25th, at the rooms of the Medical Society of London, 11, Chandos-street, W., where all communications should be made to Mr. John G. Pardoe, who is acting as secretary of the congress. There will be a reception of delegates at Princes' Gallery, Piccadilly, W., on Monday evening by Mr. E. Hurry Fenwick, President of the Congress, and Mrs. Hurry Fenwick. A full programme of scientific work has been arranged for the next three days, and on Wednesday evening a banquet will be given by the British members to the foreign members at the Savoy Hotel. The secretary would like to hear at once from members intending to take part in the Congress or attend the functions.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Mr. W. J. B. Carter, medical officer, Gold Coast, has retired, and Mr. W. H. W. Strachan, C.M.G., principal medical officer of Southern Nigeria, and Mr. S. W. Thompstone, C.M.G., principal medical officer of Northern Nigeria, retire on pension. Mr. W. H. Langley, C.M.G., principal medical officer of the Gold Coast, has been promoted principal medical officer of Southern Nigeria, and Mr. W. M. Woods has been selected for appointment as a medical officer in Southern Nigeria. *Other Colonies and Protectorates:* Dr. C. E. Anderson has been selected for appointment as female medical officer in charge of the Lady Havelock Hospital for Women and Children, Colombo, Ceylon, and Dr. R. P. Cockin, district medical officer, Nicosia, Cyprus, has been selected for appointment as resident surgeon of the Colony Hospital and bacteriologist, Grenada, West Indies.

DONATIONS AND BEQUESTS.—Mrs. Lucas, wife of the late Mr. Henry Lucas, who was for many years chairman and treasurer of University College Hospital, has sent to the treasurer of that hospital £1000 on behalf of herself and children for the endowment of a bed in memory of her husband.—Under the will of the late Mr. Rolandi the sum of about £150,000 will be divided equally between the following hospitals:—Italian Hospital, French Hospital and Dispensary, German Hospital, Middlesex Hospital, University College Hospital, Cancer Hospital, Royal South London Ophthalmic Hospital, and Royal Asylum for the Deaf and Dumb at Margate.—Among other charitable legacies bequeathed by the late Mrs. Elizabeth A. Watson is the sum of £10,000 to the trustees of the Nottingham General Hospital to provide accommodation for as many in-patients in that hospital as the interest shall suffice for. The fund is to be kept distinct from the general funds of the hospital and is to be known as "The Watson Bequest."

ON Wednesday the Annual Conference began at Caxton Hall of the National Association for the Prevention of Consumption, when Mr. John Burns, President of the Local Government Board, delivered an address on the work of the Board in this connexion. His Majesty the King sent to the conference from Holyrood Palace a sympathetic message.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Bill.

A HIGHLY interesting debate on the sanatorium treatment of tuberculosis arose in the discussion in committee of the House of Commons of Clause 8 of the National Insurance Bill on Wednesday, July 12th. The debate extended over four hours. Mr. AUSTEN CHAMBERLAIN started it by moving to omit the provision of Clause 8 that amongst the benefits conferred upon insured persons under the Act was "treatment in sanatoria or other institutions when suffering from tuberculosis or such other diseases as the Local Government Board with the approval of the Treasury may appoint." The consideration which the right honourable gentleman submitted to the House was that the Bill was a Bill for insurance against sickness, and that sanatorium treatment was not really the ordinary work of insurance against sickness. There were good grounds for the State treatment of the disease of tuberculosis, but the charges for sanatoriums were much more in keeping with the public charges already assumed by the State and the public authorities than with the insurance charges already included in the Bill. If tuberculosis were to be treated in this special way, why should not the equally terrible scourge of cancer receive similar treatment?

Mr. AUSTEN CHAMBERLAIN'S speech, which was that of a friendly critic of the Bill, gave rise to a succession of instructive utterances. Mr. MUNRO FERGUSON declared that a national campaign against tuberculosis by the Government would not effect anything like the same good as the proposals of the Bill. Mr. LONG demanded that more research should be made into the causes and cure of the disease, and supported his demand from the report of the Royal Commission on Tuberculosis. He asked the Chancellor of the Exchequer not to commit himself to the method of the Bill as a wholly satisfactory method of combating the disease. Sufficient money had not been provided for research work, and vast expenditure on sanatoriums should not be undertaken until more knowledge existed that that kind of treatment was likely to be really effective. A speech by Dr. ADDISON later in the debate was warmly applauded in the House. As a medical man he spoke of the problems connected with the care and cure of tuberculous patients with knowledge and lucidity, and to this kind of speech the House of Commons always lends a willing ear. Dr. ADDISON'S view was that during the last few years, not only in this country but in others, a sufficient amount of very reliable data had been obtained which he thought would more than justify the Chancellor of the Exchequer in pursuing his undertaking with respect to sanatoriums. With regard to cancer, it was safe to say that medical men had no knowledge of the prevention of the disease, but there was a great deal of knowledge as to how to prevent tuberculosis. Dr. ADDISON pointed out the great calls which tuberculosis made on the funds of friendly societies. If the House wanted to protect the insurance fund and sick pay it should undertake the preventional treatment of tuberculosis, which caused a greater charge upon the funds than any other disease. The honourable Member went on to discuss at length the relation of sanatorium treatment to the infected persons, and the necessity of checking the disease in the home. "I am sure," he said in conclusion, "it will be nothing less than a national calamity were this clause to be deleted from the Bill."

Dr. HILLIER, who followed Dr. ADDISON, did not entirely share his conclusions. Dr. HILLIER said that for the State to provide sanatorium treatment merely for those insured under the Bill was neither statesmanlike nor wise. What about other members of the family who contracted phthisis, as they must inevitably do? They would continue to spread the disease. The sanatorium treatment, unless supplemented by other machinery, would be nothing less than a costly palliative and not a remedy. However, he welcomed the attempt on the part of the State to grapple with this great problem, even although he did not think the whole of the proposals were entirely well directed.

Mr. LLOYD GEORGE, when he came to reply to the debate, spoke with confidence of his sanatorium proposals. "From all the inquiries I have made," he said almost in his opening sentence, "I think this experiment will be a success, and I am sure that its success will end in our extending the experiment a good deal further than we propose to do in this Bill." The Chancellor of the Exchequer, however, admitted that the warning not to trust exclusively to sanatoriums in grappling with tuberculosis was very timely and valuable, as sanatoriums could not treat all the cases. The right honourable gentleman then addressed

himself to the question of the success of sanatoriums. He quoted statistics compiled at the Hearts of Oak Sanatorium and the Post Office Sanatorium, and also figures supplied to him by the German Imperial Insurance Office. These, he said, justified Parliament in proceeding with this great experiment. Every inquiry he had made showed that sanatorium treatment did give an increased chance for life to the man who was fighting for his life. Even although sanatorium treatment did not cure consumption, it certainly strengthened people in fighting against the disease. Mr. LLOYD GEORGE indicated that the Government did not intend to exclude other methods of treating tuberculosis. They would, he said, take full advantage of supplementing sanatoriums by other methods or of supplementing other methods by sanatoriums. The Chancellor of the Exchequer further replied to criticisms directed against the Government for refraining to deal with all sufferers from tuberculosis. The Bill only dealt with insured persons. The right honourable gentleman pointed out that a universal extension of the provisions of the Bill would lead to an expenditure of three and a half millions. However, he pointed out that as certain excess charges in the Bill were to be shared by the local authorities and the Treasury, the provision might very usefully be extended to sanatorium benefits as well. If that were carried out he had no doubt the Health Committees and the approved societies would use the sanatoriums for curing the dependents of insured persons. It would then be open to the local authority to approach the Treasury with a view to increasing the accommodation. The Treasury would undertake half the expense and the local authority the other half. In conclusion, he warned the House not to overburden the scheme by attempting too much.

Several interesting speeches were made after Mr. LLOYD GEORGE resumed his seat. Dr. CHAPPLE spoke of the practical difficulties which had to be overcome in the treatment of tuberculous patients. He admitted the limitations of sanatoriums, but claimed that better results in the care of tuberculosis had followed the erection of sanatoriums than any other treatment known to medical science. Dr. ESMONDE also showed the medical man's intimate knowledge of the ravages of the disease amongst the industrial population. Members listened with deep attention to his description of the difficulty of inducing the workman stricken with tuberculosis to leave his home. He earnestly asked the Chancellor of the Exchequer to take into consideration the treatment of persons in their homes. He deprecated spending great sums of money at the present stage in the erection of large buildings.

Mr. AUSTEN CHAMBERLAIN ultimately withdrew his amendment, remarking that the debate had been amply justified. He observed that he and his friends were quite satisfied with Mr. LLOYD GEORGE'S statement that although the experiment of sanatoriums was a large one it was still to be regarded as only an experiment, and not only as an experiment but as one amongst several for combating and fighting tuberculosis.

The debate was generally regarded by the House as most useful and instructive, but its length permits only its salient points to be touched upon.

On Monday, July 17th, the House of Commons made further progress with the consideration of Clause 8, which sets out the benefits to which insured persons are entitled. The principal topic touched in the course of the discussion was the maternity benefit, which is 30*s*. The point that a married woman, who was herself an insured person, would find herself insured twice over, was brought to the notice of the Government. The Chancellor of the Exchequer, who admitted that there was an unfairness in this arrangement, promised an amendment to transfer the maternity benefit to the husband's fund and to give the wife her 30*s*. in the form of sick pay. This provision was subsequently embodied in the Bill.

Before the House agreed to Clause 8 in its amended form on Tuesday afternoon Mr. AMERY put in a plea that the health campaign should be extended to the scourge of syphilis as well as to that of tuberculosis. The honourable Member in general terms indicated the effect of the former disease on the health of the nation and the danger to the community of its presence. The essential thing in dealing with syphilis was that the treatment should be cheap and accessible, and such that the victims of the disease should have confidence in. Mr. AMERY did not ask that the Chancellor of the Exchequer should set aside a large sum of money for dealing with the problem, but he suggested that the right honourable gentleman should contemplate a serious national campaign to deal with it. The line suggested was that institutions for treatment should be opened in certain districts in order to gain experience and to discover how sufferers from the disease could most effectively be treated. Mr. MCKENNA, the First Lord of the Admiralty, who is assisting Mr. LLOYD GEORGE in the conduct of the Bill, acknowledged the serious tone of Mr. AMERY'S remarks. He pointed out that the phraseology of the clause gave the Local Government Board power to deal with "other diseases" besides tuberculosis, and he had no doubt that the views of Mr. AMERY would receive the serious consideration of that department. Clause 8, which contains a good many amendments as the result of the deliberation in committee, was ultimately agreed to.

On Wednesday the House of Commons continued to deal with points concerning benefits and the machinery by which they are to be administered, but the case of the medical profession was not reached. It will be considered on Clause 14, which may be reached next week. One of the features of the debates on the Bill has been the frequency of the demands to extend its limits and the successful resistance to some of them by the Chancellor of the Exchequer on the ground that they would conduce to instability of finance.

National Insurance Bill Amendments.

Several fresh amendments have been set down to Clause 14 of the National Insurance Bill with reference to the administration of medical benefits.

Dr. ADDISON gives notice of one to the following effect: "Subject to regulations by the Insurance Commissioners, it shall be lawful for any insured person, in lieu of receiving medical attendance and treatment under such arrangements as aforesaid, to enter into agreement with any duly qualified medical practitioner for medical attendance and treatment, and any approved society or Local Health Committee which would otherwise have been charged with the duty of administering his medical benefit shall contribute towards the cost of the medical attendance and treatment of such person under such agreement sums not exceeding in the aggregate the cost which the society or committee would otherwise have incurred in providing medical attendance and treatment for him."

Colonel HICKMAN proposes to insert in the clause the following provision: "Where any medical man can prove to the satisfaction of the Insurance Commissioners that within ten years before the passing of this Act he has paid a sum of money for the goodwill of his practice, and that, not being a selected medical man under the provisions of this Act, he thereby loses not only the sum paid for the goodwil of his practice, but a great part of the practice itself, the Commissioners shall make such compensation as they may think fit."

Sir PHILIP MAGNUS has given notice of his intention of moving an amendment in these terms: "Provided that no insured person shall be entitled to medical benefit if his average income from all sources exceeds £2 a week, but in any such case he shall, in lieu of the medical benefit to which he would be otherwise entitled under this part of the Act, be entitled to receive a cash payment towards the expenses of medical treatment, the amount of such payment to be calculated in accordance with tables to be prepared by the Insurance Commissioners."

Somewhat different phraseology to accomplish a similar object is adopted by Mr. AMERY, who proposes that "no insured person shall be entitled to medical benefit if his average income from all sources in the calendar year preceding the date at which he became entitled to sickness benefit exceeded the sum of £100, but in any such case he shall, in lieu of the medical benefit to which he would otherwise be entitled under this part of this Act, be entitled to receive a cash payment towards the expenses of medical treatment, the amounts of such payment to be in accordance with tables to be prepared by the Insurance Commissioners."

On Clause 15 (administration of sanatorium benefit) Mr. DAVID DAVIES will bring forward an amendment that "no person shall be entitled to treatment in a sanatorium unless the Local Health Committee considers the case one suitable for sanatorium treatment, and admission to such treatment shall be conditional on the case having been previously notified to the public health authority or to such authority as the Insurance Commissioners may appoint."

Mr. EVELYN CECIL has given notice of the following amendment to Clause 14: "And any Health Committee may make arrangements with hospitals for the reception of insured persons in the case of accidents or operations or such other serious causes as the practitioners may be unable or unwilling to treat in the patient's house, or it may make grants out of the medical benefit funds to any hospitals which have rendered such services."

Dr. HILLIER on the same clause will move that the medicines provided under the clause "shall be dispensed by a pharmaceutical chemist, or chemist and druggist, under the Pharmacy Acts, 1852 and 1868, or by a certified assistant to an apothecary under the Apothecaries Act, 1815, or by persons who for seven years prior to the passing of this Act have been employed as dispensers to medical men."

Geneva Convention Bill.

The Geneva Convention Bill, which has been read a second time in the House of Commons, is designed to give the effect of a statutory enactment to certain matters arising out of the Geneva Convention of 1906. That Convention decided that measures should be taken to prevent the fraudulent use of the Red Cross flag and to limit the employment of the badge to the Red Cross Society, which assisted the sick and wounded in time of war.

HOUSE OF COMMONS.

WEDNESDAY, JULY 12TH.

Maternity Orders in London.

Mr. CROOKS asked the President of the Local Government Board whether he could obtain for the information of the House the number of maternity orders giving the right to free attendance by a medical man from the various hospitals maintained by voluntary contributions in London.—Mr. BURNS replied I understand that in 1909 5134 confinements occurred in London in lying-in hospitals, and 24 875 in connexion with free hospital maternity charities at home, being a total

of 30,007. Assuming one birth to a confinement, this implies that about 25·4 per cent. of the total births in London were gratuitously attended in connexion with these charities.

Mr. CROOKS asked what was the number of maternity orders issued by the boards of guardians (1) in London, (2) in the provinces, and (3) in Wales, differentiating between institution and home attendance of the medical officer.—Mr. BURNS answered: According to the latest returns 3125 cases were admitted to maternity wards of London workhouses and infirmaries during the year 1910. The number of midwifery orders given to district medical officers was 1265 and to midwifery nurses appointed by guardians 329. I am not able to give corresponding figures for the rest of the country.

Medical Inspection of School Children.

Mr. WEDGWOOD asked the President of the Board of Education whether it was the practice of medical inspectors of school children to make recommendations on the medical card of each child as to treatment or care; and whether the inspectors of different authorities differed in practice on this point.—Mr. RUNCIMAN said in reply: In most cases the defect is referred to the parent in a special note. There are so many varieties of practice that it is impossible to deal with them in an oral answer. My honourable friend will find much information on this point in the latest report of the chief medical officer of the Board.

Mr. WEDGWOOD: Can the right honourable gentleman say whether the schools under the London County Council are worse than those in the rest of the country?—Mr. RUNCIMAN: Quite recently I have had to criticise the methods adopted by the London County Council, and I see there are considerable improvements in progress by that Council and the medical officers.

Mr. WEDGWOOD asked whether the right honourable gentleman could say how many schools on the average were allotted to one London County Council medical inspector for inspection; how many visits and how many hours a year on the average a medical inspector in the London area gave to each school; and how many children of each school he inspected individually at each visit.—Mr. RUNCIMAN replied: So far as I can ascertain from the information at present at my disposal, I think the answer to the first part of the question is 9·2, but I cannot pretend to an accurate knowledge from month to month of the precise ways in which the various medical inspectors of local education authorities are employed. The actual number of visits per school and the number of hours spent in each school naturally vary with the number of children in average attendance. No general conclusions could properly be drawn from the averages suggested in the question, which are misleading unless account is taken of the varying sizes of the schools. The number of children inspected at each visit appears to be, in the case of the older children, about 20 to 25, and more in the case of infants. A visit extends over two and a half hours.

National Insurance Topics.

Mr. HASTINGS DUNCAN asked the Chancellor of the Exchequer whether Health Committees appointed under Clause 14 of the National Insurance Bill to administer medical benefit might include medical men practising homœopathy in their list of qualified medical practitioners.—Mr. LLOYD GEORGE replied: The answer is in the affirmative.

Major HENDERSON asked whether, under the insurance scheme, in the event of an insured person becoming demented and detained in a public institution, the whole of his invalidity money would be paid to his dependents without deduction.—Mr. LLOYD GEORGE answered: In the circumstances described the disablement benefit would be paid to, or applied in whole or in part for the relief or maintenance of, the dependents of the insured person as the society or committee by which the benefit is administered think fit. No part would be payable to the institution, but the dependents would have no absolute right to the whole.

THURSDAY, JULY 13TH.

National Insurance Topics.

Mr. GIBBS asked the Chancellor of the Exchequer whether he would be willing favourably to consider an amendment to the National Insurance Bill providing for the compensation of such medical men as should be able to prove financial loss owing to the operation of the Act.—Mr. HOBHOUSE (on behalf of Mr. Lloyd George) replied: My right honourable friend anticipates that the operation of the National Health Insurance will cause financial gain rather than loss to medical men.

Mr. POINTER asked whether the right honourable gentleman had considered the case of the medical aid societies at work in various parts of the country, which engage, pay, and control a medical practitioner of their own, who prescribed for and attended the members of the society, using the medicines and drugs purchased by the society; and whether they would be affected by the National Insurance Bill, and if so how, and if adversely what provision he intended to make to enable them to continue their work.—Mr. HOBHOUSE said in reply: A medical aid society which is prepared so to extend its operations as to administer all the benefits provided under the National Health Insurance can become an approved society. Under the proposals of the Bill a society which desires to confine its activities within the existing limits can readily make such arrangements with the approved societies through which its members are insured to enable it to continue to administer their medical benefit and to receive the funds available for that purpose out of their contributions.

Medical Inspection of School Children.

The House went into Committee of Supply on the Education vote.

Mr. RUNCIMAN (President of the Board of Education), in the course of his statement, said that at the time when Parliament was discussing a National Insurance Bill it was well to take into account that under the organisation of the local education authorities 6,000,000 children were already subject to medical inspection. In the whole of the authoritative areas there were 322 medical officers who were carrying out this work. Last year no less than 2,000,000 children were examined by the school doctors. Of these no less than 10 per cent. were found to have defective vision. Some 3 to 5 per cent. had defective hearing; 8 per cent. had adenoids or enlarged tonsils; 1 per cent. had ringworm and 1 per cent.—in some cases rising to over 4 per cent.—were suffering from tuberculosis in a readily recognisable form. 1 per cent. were suffering from heart disease. From 20 to 40 per cent. had extensive decay of the teeth. These were facts which, when brought home to the local authorities, made them at once agree, even at the expense of their most economical ratepayers, to embark upon medical treatment. Inspection was of some good, but it did not go the whole way. If inspection was to yield practical results it must lead up to treatment in one form or another, either privately or organised by the local education authority. But if it was to be undertaken by the local education authority that could not be done under the statute until four points were fulfilled:—(1) Before treatment was undertaken the inspection must be satisfactorily organised; (2) the treatment based on prevention schemes of treatment should be coördinated with the work of preventive medicine already conducted in the area and not organised apart from it; (3) the authority which was responsible for the inspection should also be responsible for the treatment; (4) before the authority undertakes this work all other means should be exhausted—that was to say, that the parent could not himself have the child treated by a private practitioner. But there was work which the private practitioner could not do and which was much better done by organisation. Even such a common thing as ringworm yielded best to X ray treatment, and very few private practitioners had the necessary apparatus. Therefore he thought it was as well to have the school medical service organised in harmony with the public health service already in existence. The Board of Education preferred the school medical officer to be the medical officer of health—and he was in a very large number of cases—something like 250 out of 320. Another thing of great value was that if the school medical officer was not the same as the medical officer of health, he should at least be in close touch with the borough medical officer, for it was extremely desirable that the information collected by the school medical officer and by medical inspection should be passed on to the medical officer of health as quickly as possible. The reason of it was that the sanitary control of the schools was in the hands of the sanitary officer. Notification, disinfection, and sanitation of the home were in the hands of the sanitary authority. The right of entry into the house of the ailing child was an advantage possessed by the medical officer of health. All that meant that the medical officer of health was an essential officer in the economy of the school medical service. That was why the Board asked the local authorities to work in complete harmony with the existing public health authority. He took as an example tuberculosis. The first thing necessary to find out was the cause of tuberculosis and the source of the trouble. The medical officer of health had a record of the child's birth and he knew something about the home environment and the tracing of the source of infection. The school medical officer detected the disease at the time, and then the child was dealt with by the local education authority, which body was responsible for the improvement of hygiene in the schools, for open-air schools, and other means for dealing with each case. Finally, it was the sanitary authority which disinfected the home and closed up the case. The same held good in regard to verminous cases, and it was equally true with regard to infectious diseases. The medical officer of health undertook the various medical duties. He linked up the home with many of the public services, and that was the reason why the Board of Education was taking the view that a conjunct arrangement must be worked on if medical inspection and treatment were to be at all effective. The charge made with regard to medical inspection was that it would be likely to lead to a decrease in the sense of responsibility of the parents. Quite the contrary had been the experience. The truth was that a great number of parents were reluctant to believe that anything was wrong with their children. It often came as a complete surprise to them to learn that there was. There was a minority of people who resented medical treatment, but on the whole the vast majority were surprised when they heard of illness among their children, and they believed it to be their duty to make the care far better than before. A great many of the medical complaints were really the effect of defective mothering. By giving a little assistance, guidance, and hints to the mother and making her improve the home surroundings the health of the children was improved and the best use was made of medical inspection. The best way of dealing with a great many of these cases was to make the nursing better and to improve cleanliness, and that was the practical result of the institution of medical inspection. So far from decreasing the sense of responsibility, it opened the eyes of many parents to the necessity of better treatment for their children. He would not trouble the committee by telling it the large number of local authorities who had made special arrangements for carrying out this Act. He would like to point out the number of school clinics which had been instituted in various parts of the country, and he desired to say that where board school clinics were started full advantage ought to be taken of the service already available. Special treatment, he would like to add, was now provided in many areas for feeble-minded and defective children and for children who were deaf or blind.

MONDAY, JULY 17TH.

Tuberculosis in the Navy.

Mr. MCKENNA informed Mr. WORTHINGTON-EVANS that there was no provision for the treatment in sanatoriums of men on the active list of the Royal Navy who were suffering from tuberculosis, and so far as was known no men on active service were treated in such sanatoriums in 1909.

Tuberculosis in the Army.

Mr. WORTHINGTON-EVANS asked the Under Secretary of State for War whether he could state the number of men on active service who in the year 1909 were provided with treatment for tuberculosis in sanatoriums; whether there was now any provision made for treatment of men on active service in sanatoriums; and what, if any, deductions from pay were made when such treatment was given.—Colonel SEELY replied: No soldier while still serving with the colours is sent to a sanatorium, and therefore no question of a deduction for hospital stoppages arises on this account. As soon as a soldier is diagnosed to be suffering from tuberculosis steps are taken to invalid him from the service and his retention in a military hospital is only temporary until he is fit to travel. Notification is duly made to the medical officer of health of the place to which the man is to be sent on discharge; but I am informed that in nearly every case the regimental authorities take steps to secure the man's reception in a sanatorium, the cost being in many cases provided by the officers of the regiment.

National Insurance Topics.

Mr. COOPER asked the Chancellor of the Exchequer whether, in the case of an insured person requiring and being ordered nourishing diet, such as milk, beef-tea, wine, &c., or simple appliances such as bandages

and trusses, arrangements would be made for their supply; and whether they would be a proper charge on the National Insurance Fund.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) replied: Simple appliances can be supplied as part of medical benefit, but articles of diet cannot. In this respect the National Health Insurance Scheme will conform to the ordinary practice of Friendly Societies.

Mr. SANDYS asked how many representatives of the medical profession were to be included amongst the Insurance Commissioners, on the Advisory Committee, and on the Local Health Committees respectively; and whether it was intended under the National Insurance Bill to sanction the appointment of local medical committees with powers to act in conjunction with Local Health Committees for the purpose of making suitable arrangements in connexion with the administration of medical benefits.—Mr. HOBHOUSE answered: The Insurance Commissioners will be an executive, not a representative, body, but my right honourable friend intends that at least one of their number shall be a medical man. The medical profession will certainly be represented on the Advisory Committee, and the precise number of representatives cannot be settled until the members of the committee and the other classes of persons to be represented have been decided on. The Local Health Committee must, under the proposals of the Bill, include at least two qualified medical practitioners.

Mr. H. LAWSON asked whether rules would be made and issued, either by the Treasury or the Local Government Board, in regard to the division of medical practice as between doctors contracting under the National Insurance Bill in the same area in regard to the number of patients, especially those with chronic illness and in regard to the distance from the doctor's house for visiting purposes, in regard to night calls, having in view the present custom and scale of fees.—Mr. HOBHOUSE said in reply: The answer is in the negative.

Mr. POINTER asked whether duly qualified herbal practitioners would be allowed to practise under the terms of the National Insurance Bill in cases where the insured person preferred their services to those of the ordinary medical practitioner.—Mr. HOBHOUSE answered: No practitioner who has one or other of the qualifications enumerated in connexion with the Medical Acts would be ruled out by the terms of the Bill.

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A Laboratory Text-book of Embryology. By Charles Sedgwick Minot, LL.D. (Yale and Toronto), D.Sc. Oxford; James Stillman, Professor of Comparative Anatomy in the Harvard Medical School; President of the Boston Society of Natural History. Second edition, revised. Price 16*s.* net.

Medical Officers of Schools Association. The Educational Treatment of Stammering Children. By Thomas J. T. McHattie, M.D.Edin. Issued by the Medical Officers of Schools Association. Price 1*s.* net.

DELARUE, H., LIBRAIRIE, 5, Rue des Grands-Augustins, Paris.

Mme. Long-Landry, Ancien Interne des Hôpitaux de Paris. La Maladie de Little-Étude Anatomique et Pathogénique. Travail du Laboratoire de M. le Pr. Dejerine à la Salpêtrière. Price not stated.

DENT, J. M., AND SONS, London. (DUTTON, E. P., AND CO., New York.)

Dante Alighieri. The Divine Comedy. Translated by C. E. Wheeler. Volume I., Hell; Volume II., Purgatory; Volume III., Paradise. Price 2*s.* 6*d.* net each volume.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

Department of Applied Mathematics, University College, London. Questions of the Day and of the Fray. No. III. An Attempt to Correct Some of the Misstatements made by Sir Victor Horsley, F.R.S., F.R.C.S., and Mary D. Sturge, M.D., in their Criticisms of the Galton Laboratory Memoir: "A First Study of the Influence of Parental Alcoholism, &c." By Karl Pearson, F.R.S. Price 1*s.* net.

FISCHER, GUSTAV, Jena.

Die Morphologie der Missbildungen des Menschen und der Tiere. Unter Mitwirkung zahlreicher Fachgenossen. Herausgegeben von Dr. Ernst Schwalbe. III. Teil. Die Einzelmissbildungen. VI. Lieferung. Anhang. I. Kapitel. Entwicklungsstörungen des Postfötalen Lebens. Von Prof. Dr. A. Dietrich. Price M.1.60.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Fünfzehnte Lieferung. Band I. Physiologie der Körpersäfte, Physiologie der Atmung. Price M.5.

KARGER, S., Berlin.

Die Syphilis im Lichte der modernen Forschung, mit besonderer Berücksichtigung ihres Einflusses auf Geburtshülfe und Gynäkologie. Von Dr. Franz Weber, Assistent an der Kgl. Univ. Frauenklinik und Privatdozent für Geburtshülfe und Gynäkologie an der Universität in München. Price M.4.

Die Perorale Intubation. Ein Leitfaden zur Erlernung und Ausführung der Methode mit reicher Kasuistik. Von Dr. Franz Kuhn, Elisabeth-Krankenhaus in Kassel. Mit einem Vorwort von Geh. Rat Prof. Dr. O. Hildebrand, Direktor der chirurg. Klinik in der Kgl. Charité in Berlin. Price M.5.

Leitfaden der Akustik für Ohrenärzte. Von Dr. M. Th. Edelmann, Prof. h.c. der Kgl. techn. Hochschule München. Price M.4.

Ueber Wernickes Einfluss auf die klinische Psychiatrie. Von. Prof. Dr. H. Liepmann, Privatdozent an der Universität, Oberarzt an der Irrenanstalt Dalldorf der Stadt Berlin. Price M.1.

MARHOLD, CARL, Verlagsbuchhandlung, Halle a.S.

Die Bedeutung der Vererbungslehre für die Augenheilkunde Rückblicke und Ausblicke. Von Prof. A. Peters in Rostock. Price M.1.

SHAW AND SONS, Fetter-lane, Fleet-street, London, E.C.

The Mechanism of the Heart Beat, with Especial Reference to its Clinical Pathology. By Thomas Lewis, M.D., M.R.C.P., D.Sc.; Lecturer in Cardiac Pathology, University College Hospital Medical School. Price 16*s.* 6*d.*

SIMPKIN, MARSHALL AND CO., LIMITED, London. (HANNA AND NEALE, Dublin.)

Incompatibility and Some of its Lessons. By Walter G. Smith, M.D., King's Professor of Materia Medica and Pharmacy, School of Physic, T.C.D.; Physician to Sir P. Dun's Hospital; Ex-President, R.C.P.I. Second edition. Price 1*s.* net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Lehrbuch klinischer Untersuchungsmethoden. Für Studierende und Aerzte. Von Dr. med. Theodor Brugsch, Universitäts professor, Assistent der II. Mediz. Universitäts-Klinik in Berlin, und Dr. med. Alfr. Schittenhelm, a.o. Professor der Klinischen Propädeutik und Geschichte der Medizin in Erlangen. Zweite erweiterte Auflage. Price, paper, M.15; bound, M.17.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURNET, JAMES, M.D. Edin., M.R.C.P. Edin., has been appointed Examiner in Materia Medica to the University of Aberdeen.

CRABB, R. L., M.B., B.S. Lond., has been appointed Obstetric Assistant to University College Hospital.

CURRY, A., L.R.C.P. & S. Irel., has been appointed Anæsthetist at the Hospital for Women and Children, Leeds.

DAWNAY, A. H. PAYAN, F.R.C.S. Eng., has been appointed Ophthalmic Surgeon to Out-patients at the Great Northern Central Hospital.

FOX, S. C. GUNDRY, M.R.C.S., L.R.C.P. Lond., has been appointed Senior Medical Officer at Perak, Federated Malay States Medical Service.

GILFILLAN, S. J., M.B., C.M. Edin., has been appointed Medical Superintendent of Colney Hatch Asylum.

HART, W. S., M.B., Ch.B., has been appointed Anæsthetist at the Hospital for Women and Children, Leeds.

KISCH, HAROLD A., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Ear Hospital.

MOORE, F. CRAVEN, M.D. Vict., F.R.C.P. Lond., has been appointed Honorary Assistant Physician to the Manchester Royal Infirmary.

ODELL, WILLIAM, M.D. Durh., F.R.C.S. Eng., has been appointed Honorary Consulting Physician to the Western Hospital for Consumption, Torquay.

PAUL, J. E., M.D. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Physician to the Western Hospital, Torquay.

RAE, C. G., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of the Southern Division of the Wick Parish Council.

RAYNER, H. H., M.B., B.Ch. Vict., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary.

SANCTUARY, T., M.D. Edin., has been appointed Medical Officer of Health for the Duffield Rural Sanitary District.

SHAND, G. ERNEST, M.B., B.S. Aberd., has been appointed Senior Medical Officer at the City Asylum, Birmingham.

SIKES, A. W., M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond., has been appointed a Half-time Assistant Medical Officer in the Education Department of the London County Council.

TASKER, H. L., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

WALSHE, F. M. R., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £120, with board, &c.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board and residence. Also Locum Tenens to act as Junior House Surgeon. Salary 3 guineas weekly, with board and lodging.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and laundry.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BURNLEY, VICTORIA HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with residence, board, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CAMBERWELL, GORDON-ROAD WORKHOUSE, Peckham.—Assistant Medical Officer. Salary £120 per annum, with apartments, board, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

DUMFRIES, CRICHTON ROYAL INSTITUTION.—Pathologist and Clinical Pathologist. Salary £250 per annum, with quarters, board, and laundry.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

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FULHAM ANTITUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

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PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician. Salary £50 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon and Two House Physicians, all for six months. Salary in each case at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Dean-street, Soho, W.—Assistant Surgeon.

ST. PANCRAS INFIRMARY (SOUTH) AND WORKHOUSE.—Assistant Medical Superintendent and Assistant Medical Officer. Salary at rate of £135 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £60 each per annum, with board, lodging, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, laundry, &c.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

THROAT HOSPITAL, Golden-square, W.—Surgical Registrar.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon, each for six months. Salary £40, with board, lodging, and laundry. Also Anæsthetist. Salary £37 16s. per annum.

WALTHAMSTOW, LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, rooms, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WEST HAM UNION WORKHOUSE, Union-road, Leytonstone, N.E.—First Assistant Resident Medical Officer. Salary £150 per annum, with usual allowances.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and washing.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer., Salary £120 per annum, with rooms, attendance, &c.

WESTMINSTER HOSPITAL.—Assistant House Surgeon for two months. Board provided.

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WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer, unmarried. Salary £140 per annum and all found.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Act at Glastonbury, in the county of Somerset.

Births, Marriages, and Deaths.

BIRTHS.

CADDY.—On June 25th, the wife of Adrian Caddy, M.D., F.R.C.S., of Harington-street, Calcutta, of a daughter.

SEARLE.—On July 8th, at Bridge-street, Cambridge, the wife of C. F. Searle, M.B., of a son.

SPITTA.—On July 13th, at Bolton-street, Mayfair, the wife of Harold Spitta, M.D., of a daughter.

MARRIAGES.

CORNISH—LLOYD.—On July 13th, at St. Ann's Church, Kew Green, Charles Vivian Cornish, F.R.C.S. Edin., to Ethel Saunderson, younger daughter of the Rev. Frederick Charles Lloyd.

JORDAN—BRUMLEU.—On July 12th, at Holy Trinity Church, Sidcup, by the Rev. J. Foster Lepine, Alfred Charles Jordan, M.D., of 14, Weymouth-street, W., third son of the late Albert Jordan, of Bowden, Cheshire, to Christina, third daughter of the late Charles Brumleu, of Mossbank, Sidcup.

MUSSEN—OAKSHOTT.—On July 12th, at St. Peter's, Rock Ferry, Arthur Augustus Mussen, M.D., to Norah Elsie, youngest daughter of the late Thomas William Oakshott, J.P., and Mrs. Oakshott, Derby House, Rock Ferry.

OAKLEY—BROMLEY.—On July 12th, 1911, at Great Nest Church, Salop, by the Vicar, the Rev. F. J. Stanley, George Gardner Oakley, M.R.C.S. Eng., L.R.C.P. Lond., eldest son of Dr. J. Oakley, J.P., Holly House Halifax, to Mary Gardner Bromley, second daughter of Richard Bromley, Esq., Felton Butler, near Shrewsbury. "At Home," Holly House, Halifax, Sept. 5th, 6th, and 7th.

RIDOUT—HOOPER.—On July 11th, at St. Jude's, Southsea, Charles Archibald Scott Ridout, M.S., M.B. Lond., F.R.C.S. Eng., to Gladys Mary, eldest daughter of the late Henry Lawrence Hooper and Mrs. Tyson, of Spencer-road, Southsea.

WATKINS—CROW.—On July 11th, at Croydon, Frank A. Watkins, M.R.C.S., L.R.C.P., L.S.A., of Merton Lodge, Denmark Hill, to Clara Elizabeth Crow, younger daughter of W. M. Crow, of Croydon.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"BENIGHTED ITALY."

IT used to be a proud distinction of the profession that its members might be summoned by duty to the lowest haunts of vice and crime and their persons be secure from aggression or violence, where no other intruder, not even the clergyman, could enter an appearance without danger, except when accompanied by an imposing police force. Now, it seems, in the "Third Italy," which has lately been celebrating its "new departure" on the line of progress, this distinction no longer holds good. A well-informed correspondent writes: "From the Alps to Etna, from the Venetian territory to Palermo, the populace in town or country has risen in revolt against the divisional practitioners or sanitary officers when in the very act of protecting them from epidemic disease, causing them to run for their lives and thereafter to find that their houses had been set fire to and their families threatened with extinction in the flames. Barely six miles from Palermo, the seat of a university, a cathedral city, and a great *entrepôt* of traffic and tourist resort, the population of Belmonte Mezzagno assembled *en masse* on the night of July 10th before the town-hall, where the syndic, the town council, the departmental practitioner, Dr. Genova, and other functionaries of the commune had met to take opportune measures for the public health, threatened, *inter alia*, by cholera. A storm of hooting and hostile cries brought the prefectoral commissioner to the balcony, where he vainly tried to appease the infuriated mob. His words were drowned in a volley of invectives, closely followed by a shower of stones, which made havoc of the windows of the town-hall. The syndic and others of the councillors effected their retreat through a back door, while the town clerk was seeing to the closure of every point of access. By this time the assailants had taken to their revolvers, while others of them were using logs of wood as battering-rams against the main entrance. The besieged party (for such they now were) put out the lights, but the fusillade of stones and pistol-shots continued and forced them speedily to seek such shelter as they could in the corners of the several rooms. Meanwhile the brigadier of carabineers with a few linesmen succeeded in occupying the immediate front of the building, but the mob, which had added to its numbers, maintained its steady fire of projectiles, making the position of the besieged every moment more critical. Fortunately the town clerk bethought him of a door to the back which had been closed up with plaster, and he and the others by dint of their penknives got down to the door-handle, which by good luck they turned and so effected their escape to the open country. The mob on ascertaining this became still more infuriated and renewed their efforts to force the main entrance, shouting 'Morte al medico! Morte al commissario!' ('Death to the doctor! Death to the commissioner!'). Having got inside the building they burst through the door improvised by the besieged and gave chase, but without overtaking the fugitives. They then marched to Dr. Genova's private residence, broke into it, sacked it, and flung the fragments of furniture into the street. They finally set fire to it and put the neighbouring houses in imminent danger of being involved in the conflagration. The brigadier with his handful of soldiers could no longer protect the town-hall which the mob now proceeded to set on fire, with the result that the municipal registers were all destroyed. Only the arrival of a strong contingent of carabineers succeeded in quelling the riot and arresting the ring-leaders and some of their abettors." A similar uprising, equally inspired by superstitious dread of hygienic precautions and the institution of a lazzaretto, is reported from Venice, doubtless to be followed by others. Surely "the schoolmaster abroad" has been very far afield, and the priestly confraternities culpably negligent of their duty as mediators, when such scenes are witnessed in a country whose Past has figured so honourably in the advancement of medicine.

A MYSTERIOUS BURNING FATALITY.

AN inquest was held recently at Marlborough upon the body of a little girl, 6 years of age, who was burned to death owing to her clothes catching fire in the street, there being no evidence obtainable to account for their ignition. The child was standing in the High street, when suddenly she was seen to be enveloped in flames, and a lady, who suffered some injury by her prompt and plucky effort to save her, succeeded in extinguishing the flames, but not before the child had been severely burnt. It was thought that a motor-car which had just passed near her had set her on fire, and to enable the possibility of such a thing to be tested the coroner rather ingeniously caused a reconstruction of the scene to take place before the jury and himself on the actual spot, and with the witnesses of the occurrence present in the places that they had occupied. The car suspected was backed out of the garage by its driver just as it had been on the day of the burning with a piece of flannelette saturated in petrol placed near the exhaust pipe, from which it had been suggested that a spark might have escaped. The test took place and nothing occurred. The flannelette did not catch fire, and expert evidence was given in confirmation of this negative result, when the inquest was resumed in more normal fashion, to the effect that no spark could be emitted from the exhaust when the engine was running and that it had never occurred to anyone before the case in question that anything could catch fire from the exhaust. The jury returned an open verdict and the manner in which the poor little girl lost her life remains for the present unexplained. It is of course possible to conjecture that she was playing with matches before the car passed her or that some careless smoker had thrown a lighted match upon or near her clothes, which consisted apparently to some extent of flannelette. That they should become fiercely alight before they were noticed is a curious circumstance, and it was hardly to be expected that responsibility would be brought home to the motor-car. With every variety of inflammable material, constantly brought close in the streets of towns to every part of motor-cars of all classes, such an occurrence could hardly remain unique if it were possible for it to happen in anything like the manner suggested.

THE NECESSITOUS LADIES' HOLIDAY FUND.

To the Editor of THE LANCET.

SIR,—You were good enough on previous occasions to allow me space in your valuable paper to appeal for contributions to provide holidays by the sea- or country-side for necessitous ladies. Through the generosity of your readers I was enabled to bring rest and refreshment to many. I appeal again for help to send away governesses, typewriters, hospital nurses, secretaries, musicians, actresses, and ladies engaged in other professions who, unable to provide holidays for themselves and without the possibility of earning money in the summer months, are left behind in London exposed to the sufferings attendant on poverty.

In this happy Coronation year I plead for those too proud to plead for themselves, for the overworked and unfortunate, and more especially for those broken down in health.

All contributions sent to me to appended address will be gratefully distributed. I am, Sir, yours faithfully,

48, Upper Berkeley-street, London, W. CONSTANCE BEERBOHM.

DEATH FROM ANTHRAX IN A LABORATORY.

AT an inquest held recently at St. Pancras on the body of Henry Stephen Thurston, laboratory attendant at University College Hospital, it was proved that the deceased had died from anthrax poisoning. He had developed a boil on the side of his neck which had been removed after microscopical examination of matter obtained from it had shown that it was due to anthrax. After the operation he had progressed so favourably as to appear out of danger, but a rise of temperature followed and he died several days after the operation. The actual source of infection was obscure. Dr. Francis Thiele, lecturer on bacteriology at the hospital, stated that experiments in connexion with anthrax had been conducted in the laboratory, and explained to the jury the possibility of a tube having been left out in error, in which case it might have been handled by the deceased. If this happened the tube might have been in a condition to require sterilisation outside, and it would, in fact, have been sterilised if the attendant had reported having found it. As he had suffered from toothache he might have touched his face and neck and infected the latter through a scratch. The jury returned a verdict of "Death by misadventure."

HOME SUMMER RESORTS.

MANY people are now turning their attention to the absorbing question where to spend their holidays. The attractions of Cardiff as a summer resort are put forth, "with the approval of the corporation," in an illustrated pamphlet by Mr. B. J. Austin Jenkins, B.A., published by the Health Resorts Association under the title "Cardiff, including Penarth and Barry." The same association also puts forth an illustrated handbook on Llandrindod Wells, edited for the urban district council by its clerk, Mr. D. C. Davies. This pamphlet deals with the amusements and recreations, the muriated, sulphur, and chalybeate springs of Llandrindod, and with other information of interest to the prospective traveller. The medical officer of health informs us that infectious diseases are practically unknown there. Also, we have received from the same association an illustrated handbook to "Deal." All these pamphlets can be obtained free on application to the Health Resorts Association, 29, John-street, Bedford-row, London. For those in search of real quiet for rest and recuperation, especially for convalescents, it would be hard to find, perhaps, a more peaceful spot than St. Margaret's Bay, between Deal and Dover, of which Mr. J. Harris Stone, M.A., writes entertainingly and well in his pamphlet, "The Piccadilly of the Sea." It is a curious little settlement on the beach of St. Margaret's Bay, sheltered from the cold winds by high chalk cliffs. It thus possesses much of the delightful and equable climate of the

Canaries; and in winter, while those at the top of the cliff are shivering in the icy blasts or shrinking in the snow, the dwellers at its foot, it is said, bask in the sun in comparative warmth and comfort without need of extra clothing. Here, within a few feet of the sea, are to be found rose gardens the products of which have taken the gold medal at the Kent Horticultural Society. Here is no rush of train, no hooting of motor, no great throng of people. Those who are seen there have business or residence there. Yet the ceaseless passing and repassing of ships in the "Piccadilly of the Sea" dispels all dulness. Mr. Stone's little book can be had for 6*d.* from the Central Publishing Co., 358, Strand, W.C. "On the East Coast" is the title of yet another attractive booklet, compiled by Percy Lindley for the Great Eastern Railway Company. It is an entertainingly written guide-book to the principal seaside resorts of the Essex, Suffolk, and Norfolk coasts. Besides many vignette engravings it contains several railway maps showing how to get from point to point, and 14 page illustrations in colours. The descriptive notices of the various places contain information as to walks, drives, hotels, boarding-houses, and house agents. A list of the Eastern Counties' golf links and of the principal fishing and yachting points in Norfolk is appended. The pamphlet can be obtained gratis on application to the Superintendent of the Great Eastern Railway, Liverpool-street Station.

CHOLERA IN MADEIRA.

IN a report on the affairs of Madeira for the year 1910 Captain James Boyle, British Consul, states that a severe epidemic of cholera broke out in November and practically paralysed trade and shipping. There can be no doubt (he writes) that as early as September—and some say before that—suspicious cases occurred, but it was not till nearly the end of November that the port was closed and the disease announced as cholera. The difficulties of medical men and others in fighting this epidemic were enormously increased and their actions much hampered by the ignorant peasantry, who really believed that the medical authorities were killing patients on purpose, and further that the various water-courses (*levadas*) were being poisoned by those interested in politics. There were two peculiar features in the epidemic. The first was the many cases and deaths among women and children, and the second was the exemption from the disease of the richer classes. This clearly points to insanitary arrangements in the poorer quarters. It is the general belief that bad water and defective drainage, &c., were the main causes, as all or most of the cases at first occurred at Funchal and its environs. The efforts of medical men and authorities in combating the epidemic were most praiseworthy, but as long as isolation in the first place is not strictly adhered to and insisted on, these diseases must spread, in spite of precautions such as the use of disinfectants, boiled drinking water, &c. According to official statistics, the number of cases during the epidemic was 1769 and of deaths 556. The population of Madeira is, roughly speaking, 150,000. It may be interesting to recall the epidemic of cholera in Madeira in 1856. It began in July and ended on Dec. 31st, and the deaths in the whole island (then having a population of 105,856) numbered 7041, showing a mortality of 6·7 per cent. It is most sincerely to be hoped that the authorities will now take in hand the long-talked-of scheme for a proper water-supply and a modern system of drainage for Funchal. This is important, not only for the inhabitants, but for the numerous visitors who flock to the island annually. Another severe epidemic is certainly possible with the water-supply in its present condition and the obsolete sanitary arrangements. If this unfortunately should happen it would have the effect of frightening away visitors and others perhaps for many years, and would cost the island far more in the long run than the public works which are so urgently needed.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

THE Rev. Canon Scott Holland has sent us a plea on behalf of the Factory Girls' Country Holiday Fund, the good work of which we have frequently extolled. Although the means for improving the health of the workers may be a matter for discussion, the need for improving the physical well-being of those who labour in our workshops and factories is thoroughly recognised, and it should be remembered that the class for which this fund provides a brief holiday in the country once a year furnishes the mothers of a large section of the population. The fund deserves wide support. Subscriptions and donations may be sent to the honorary treasurer, Mr. H. Rendell, 51, Gordon-square, London, W.C., and the Rev. Edward Canney, Chairman, St. Peter's Rectory, Saffron-hill, London, E.C.

SALVARSAN.

Messrs. Meister, Lucius and Brüning of 51, St. Mary Axe, have issued a pamphlet on "606," which they will supply without charge to any medical man applying for a copy. It gives an account of the mode of preparation of salvarsan and of its administration, and it prints reports from numerous physicians who have used it. Not the least valuable part of the pamphlet is a copious bibliography occupying nearly 50 pages.

Oxygen.—It is quite usual for both names to appear on both plates in such circumstances.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for July and August, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 24th–August 2nd (Belfast).—Health Exhibition in connexion with above Congress.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th–29th (London).—Universal Races Congress.
July 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. Kingsford: Anæsthetics.

FRIDAY.—3.45 P.M., Lecture:—Mr. H. James: Mouth and Teeth.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 19th, 1911.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 13	30·39	N.E.	...	127	82	57	61	67	Fine
,, 14	30·37	N.E.	...	125	84	58	58	67	Fine
,, 15	30·21	N.	...	113	70	62	61	66	Fine
,, 16	30·06	W.	...	125	79	58	60	65	Cloudy
,, 17	29·92	N.W.	...	121	77	55	58	64	Cloudy
,, 18	29·72	W.	...	127	77	62	61	65	Cloudy
,, 19	29·99	W.	...	124	77	57	60	65	Fine

The following journals, magazines, &c., have been received:—Archives Générales de Médecine, Bulletins et Mémoires de la Société de Radiologie Médicale de Paris, School Hygiene, Review of Neurology and Psychiatry, Journal of the Royal Institute of Public Health, South African Medical Record, Indian Medical Journal, Welldoer, Birmingham Medical Review, Therapist, Pacific Medical Journal.

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Y.—*Yorkshire Post*, Leeds.

Z.—Messrs. C. Zimmermann and Co., Lond.

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Presidential Address

ON

THE PRESENT POSITION OF THE MEDICAL PROFESSION.

Delivered at the Seventy-ninth Annual Meeting of the British Medical Association,

BY ROBERT SAUNDBY, M.D., LL.D., F.R.C.P.,

PROFESSOR OF MEDICINE, UNIVERSITY OF BIRMINGHAM; AND PHYSICIAN, BIRMINGHAM GENERAL HOSPITAL.

PREVIOUS ANNUAL MEETINGS IN BIRMINGHAM.

LADIES AND GENTLEMEN,—For the fifth time Birmingham has the honour to receive the British Medical Association, and I am expressing the feeling of all classes of our citizens represented here to-night when I bid you thrice welcome to the Midland metropolis. We hope to be able to make your visit agreeable, and that you will be favoured with the fine weather upon which no small part of your enjoyment must depend; but apart from the varied entertainments and hospitalities which we beg you to accept, there is a goodly programme of business in which many of our distinguished visitors are expected to take part; and from the papers that are to be read and the discussions which have been arranged there should be much fresh food for thought—fertile material for the propagation of new and profitable ideas which will remain when the festivities of this meeting will have faded to a vista of pleasant memories. I would commend to your notice the Pathological Museum, on which much labour and learning have been lavished; it has been arranged with the especial object of illustrating a few forms of disease, a plan deemed more instructive than if we had made a miscellaneous collection of specimens ranging over a wider field; this museum is in the Pathological Department of the University in Great Charles-street. The exhibition in Bingley Hall also deserves your attention, as it comprises all that commercial enterprise can contribute to aid the art of healing, and the latest and best products of our manufacturers are there displayed.

Our meeting is this year fortunate in coinciding with the coronation of our Gracious Sovereign and Patron, King George V. We are assured that he possesses to the full measure that interest in the achievements and progress of medical science which was displayed so conspicuously by His late Majesty King Edward, and we may rely upon his sympathy and approval in all our efforts to promote the health of the people committed to his charge. We wish him perfect health to reign untroubled by foreign wars or domestic strife; we pray that he and his Gracious Consort may live to see their children grow up vigorous and honoured princes, happy in the assurance of a loyalty which is no empty sentiment, but is founded on a well-considered appreciation of the value of monarchical institutions.

I have spoken of this as the fifth occasion on which the Association has honoured Birmingham by visiting the city. At the first meeting, in the year 1834, the President, Dr. John Johnstone, devoted his address to "the great question of regulating the education of practitioners and giving the right and fixing the boundaries of practice," which was then "before the Legislature," although 24 years had to pass ere such a project of law became embodied in an Act of Parliament. It is interesting to know he could think that the problem of medical education, "as society is at present constituted, presents no difficulty." He regarded the existing opportunities for academical teaching as "quite sufficient," as medical studies should be confined to anatomy, physiology, pathology, and natural philosophy. But, however much this may come short of our modern ideal, we may heartily agree with him when he says that "character, after all, must be the foundation upon which any system of medical education is built," and for that we must rely chiefly upon the training given during those impressionable years devoted to preliminary education, "which should consist of classical instruction, combined with a wide range of moral and religious teaching," these being the "best groundwork of future judgment and higher intellect."

In 1856 the presidential address was given by Dr. James Johnstone; it was brief, and dealt chiefly with the need for sanitary reforms, which he urged upon the Association, insisting that such a body could effect a great deal of good by advocating them. It is satisfactory to remember that to this Association in no small measure is due the adoption by Parliament of those sanitary measures by which the health of the people has been so greatly benefited.

At the meeting in 1872 Mr. Alfred Baker devoted his address to the same topic, and pleaded that a city such as Birmingham should possess those powers of town planning which, after the lapse of 38 years, have at last been granted. Although we may congratulate ourselves upon many improvements in the sanitary condition of Birmingham, I regret that we cannot at present say with truth, as he did, that "fine and healthy trout are frequently taken by the angler in the Tame at Hamstead," near Birmingham, for the pollution of our rivers, which is a great national misfortune, has increased as a consequence of the presence of a great population on their banks.

MEDICAL EDUCATION.

At the last meeting, in 1890, Sir Willoughby Wade reverted to the subject of medical education. He insisted that the time devoted to the numerous branches of medical education was too short, that cramming took the place of study, and that the true purpose of education was lost. He would not propose to lengthen the curriculum, as that would involve an increase in cost which would press too hardly upon the resources of the average student, but he desired to get rid of some of the subjects at present included, defending himself against the accusation of desiring "to lower the standard of medical education," which, he said, was a phrase more deadly than any argument. He contended that "the question to ask is not what the student has learnt, but how he has learnt it; not how much knowledge he has acquired, but whether he understands what he has been taught; not what he has thought about it, but whether he has learnt to think at all"; and he ended a striking address by the warning—*Propter scientiam sciendi perdere causas.*

The editorial article in the *British Medical Journal* which dealt with this address pointed out that at the commencement of his medical career the student who is fresh from school, untrained in the habit of teaching himself, is obliged to face "some of the toughest and driest subjects" in the whole curriculum, and it compared our course of studies to a cone of which the broad instead of the narrow end is presented to the neophyte. Under the old plan of medical education, as we read in the biographies of Sir James Paget and Sir William Broadbent, a lad on leaving school went as a pupil to a medical practitioner, where he learnt something about the general routine of practice, and grew familiar with the atmosphere of the profession, and thus was more or less prepared for his work when he joined a medical school; on the other hand, his general education too often suffered, and, while there was much that was good in the old system, it has passed away, and no useful purpose can be served by trying to set back the clock.

When 16 years ago the curriculum was extended to five years it was hoped that the student would have more time to devote to the strictly professional part of his education, but the extra year has been swallowed up by the increased demand of the teachers of the preliminary sciences. We are again complaining that the time is too short, and this can hardly be doubted in the face of the fact that the majority of students fail to obtain their qualifications in six years. Some think that preliminary science, or at least elementary chemistry, physics, and biology, should be learnt and passed before the student enters upon his medical studies, and as these subjects are now adequately taught at many of our public schools it is better to leave boys for another year under school discipline and instruction than to launch them at so early an age into a medical school, where the supervision of studies and the control of conduct must necessarily be comparatively weak, where temptations to idleness are many, and where too often the lad is removed from the guidance of master or parent and lives alone in a great city surrounded by sources of pleasure which are irresistible to his inexperienced mind and unformed character. What wonder is it if under these conditions the first year is often wasted? No parent would

willingly expose his son to such risks, but the supposed obligation to enter him at a medical school as soon as he has passed the preliminary examination, in order that the year may count towards the curriculum, outweighs his scruples. For this we must blame the regulations of the General Medical Council and of some of the qualifying bodies. But the Council has recently modified its rules, and as some of the most important bodies now recognise the instruction given in properly equipped secondary schools, it is to be hoped that their example will be generally followed. It should be possible to make the curriculum five years in a medical school after preliminary science has been passed, and so adequate time be obtained for those subjects which can be learnt only in a medical school and in hospital.

Though there is still much in the modern arrangements for medical education which falls short of our desires, there has been a vast improvement in the organisation of medical teaching, in the equipment of medical schools, and in their methods of instruction. Of these not the least important is the foundation of this and other provincial universities, for which large sums of money have been subscribed by the public and to which the Education Department recognises its obligation to render financial assistance in the national work they are doing. Medical education in England has always had its feet firmly planted on the solid foundation of hospital work, but it was deficient in academical opportunities as compared with the schools of Scotland and the Continent, and while these steadily improved their clinical teaching we for a long time hardly realised our deficiencies. Our numerous and admirable hospitals have provided abundant clinical material, and many subordinate appointments of incalculable value for the training of practitioners, but the scientific needs of students are but poorly supplied in them. During the last 10 years this has been to some extent remedied by the better equipment of our medical schools, mainly by the self-sacrifice of the senior teachers, who have surrendered the greater part of their scanty emoluments for this purpose; laboratories have been started in all our schools, and in some hospitals it has been realised that it is not enough to possess good accommodation for the care and comfort of the sick, but that adequate means must also be provided for the study of their diseases by good laboratories with a sufficient paid staff. We in Birmingham who work in the hospitals or in private practice are indebted to our colleagues at the University for much assistance which is exerting an incalculable influence on the character of medical practice, but I would plead with our hospital authorities to take a broader view of their duties and to realise that in the end the interest of the patients will be best served by spending more money on the scientific equipment of these institutions.

THE FUNCTION OF VOLUNTARY HOSPITALS.

We in Birmingham are justly proud of our hospitals, which have been to a large extent rebuilt or reorganised since the Association last visited this city. Several of them are in their way model institutions, and we hope you will visit them, for which arrangements have been made. Supplemented as they are by municipal hospitals for the reception of infectious diseases, it may be fairly claimed that they provide assistance for all the pathological evils to which our flesh is heir; and if they are never equal to the demands made upon them, we must remember that Birmingham is a metropolis which draws patients from a population exceeding by far that of the so-called Greater Birmingham, which after all only includes our own suburbs. Hospitals are burdened with work which is largely of an unnecessary kind; each maintains an overcrowded out-patient department, easy if not absolutely free of access, where relief is given to all who ask for it however trivial their ailments, although some sort of check is attempted to exclude unsuitable cases by the appointment of inquiry officers and similar means. Hospitals boards and medical staffs recognise the evil of our out-patient system and desire to find a remedy, but with all the goodwill in the world this is not so easy as it may seem. The out-patient system has grown up in comparatively recent times and in response to an irresistible public demand. It was certainly not created or encouraged by the honorary staffs, which in Birmingham 40 years ago left the work mainly to the resident officers. As this was not satisfactory, assistant physicians and assistant surgeons were appointed to take charge of the out-patients, and the great expansion of the department dates from that time. That this is not peculiar to Birmingham is shown by the case of the Liverpool Royal Infirmary, which had only a small out-patient hall when it was rebuilt about 20 years ago, but within the last 12 months has found it necessary to open a large additional building for this purpose. At the Edinburgh Royal Infirmary in the "seventies" the only out-patients were those who attended for consultation and who received no medicine, but merely letters to their doctors or prescriptions and advice. Accidents and minor surgical cases were seen, but there was nothing that corresponded to an out-patient department, such as I understand has grown up during recent years.

Dr. Lauriston Shaw holds that hospitals should provide for the poorer classes of the community just that additional assistance which a member of the wealthier classes under the care of a general practitioner is in the habit of obtaining from a consulting physician or a consulting surgeon whenever special treatment or advice becomes necessary. He regrets that hospitals have laid themselves out to provide simple medical and surgical treatment for all comers. I agree with him in deploring it, but I recognise that the out-patient departments have developed in response to a demand which the hospitals, as dependents on public goodwill for their incomes, were not in a position to refuse. Moreover, in the absence of any well-organised system of medical attendance on the poor by dispensaries, or by such methods as may be developed under the scheme of National Insurance, the hospitals cannot repudiate this burden without exposing themselves to a charge of inhumanity. Yet a change that would permit the hospitals to follow the plan described by Dr. Shaw would be welcome, as it would promote their efficiency by setting them free to devote all their resources to the more serious cases.

Mr. J. Courtney Buchanan, in his paper on the Function of the Voluntary Hospitals in relation to the proposed Public Assistance Authority, has advocated the limitation of the work of the voluntary hospitals by excluding not only those cases, such as fits and insanity, which are usually regarded as unsuitable, but also the very poor and the well-to-do. He considers that all patients should pay something towards the cost of their treatment and maintenance in the hospital in proportion to their means; if unable to do this they come into the pauper class and should be treated by the Public Assistance Authority. He would reserve hospitals for acute, costly, or special cases. In order to meet the objection that this would diminish the clinical value of the voluntary hospitals he considers that the Poor-law hospitals should be open under proper regulation to medical students. The out-patient departments of general hospitals should be reserved for consultation cases, the ordinary out-patient class being treated in provident dispensaries or dispensaries provided by the public assistance. At these consultative out-patient departments the number of cases to be seen by each consultant should be limited. He accepts the provident dispensary plan outlined in the report of the Majority of the Poor-law Commission, by which the dispensaries would be staffed by all those medical practitioners residing in the district who are willing to undertake the work, giving the patients the right of selection. He does not think much importance need be attached to the objection of the Minority, that free choice would mean that doctors would seek to gain popularity by being liberal with extras, as this, he says, would be checked by a system of supervision and inspection, with power to remove from the panel the name of a doctor whose conduct is not satisfactory. Another of his suggestions is that no out-patient should be seen a second time without bringing a card signed by a general practitioner; but although this might be useful to rid the hospital of trivial or unsuitable cases, where the case required to be seen a second time, no hospital officer would run the risk of failure to obtain the necessary signature, but would tell the patient to come a second time, whether the signature was obtained or not. A further suggestion is that the hospitals and dispensaries should be supported by a rate levied on the class likely to use them; the obvious objection to this is that this class pays no rates, so that the money raised would come out of the pockets of the owners of small house property or lead to an augmentation of rents which are already too high.

Mr. Charles Booth also thinks voluntary hospitals should limit the work they wish to undertake, instead of, as at

present, taking all that comes, much of it being of a kind that they do not want, and thus finding a hindrance in doing the work they are specially adapted to perform. If their work were so limited on the Poor-law would fall the duty of providing for these cases rejected by charity. He points out that the proposal to put the treatment of all sickness under the health authority presupposes that it must be not only free but compulsory, but if so "it postulates an exactitude of medical diagnosis and a finality of treatment which have not yet been attained, as well as a degree of discipline and of sacrifice of liberty as yet unthought of," nor does he believe that in practice it would be possible to recover payment in proportion to means, as suggested in the Minority Report of the Poor-law Commission. He concludes that there would be a residue of paupers to be dealt with by the Poor-law—that is to say, there would always be chronic destitute sick who would not be kept permanently in any voluntary institution, and would have ultimately to go to a Poor-law hospital, and he thinks that, as the Poor-law would have to undertake the care of these people who would not come properly under the health authority, there is no reason for refusing to allow the Poor-law authority to deal with acute cases of illness in destitute persons.

I am quite in agreement with the view that voluntary hospitals should define their work and give up the attempt to deal with all cases of sickness that enter their doors. During recent years they have declined to deal with infectious cases, and provision has been made for these by the sanitary authority; it remains for the hospital authorities to refuse to treat urgent but trivial cases, and to reserve their institutions for serious cases of a medical or surgical kind, for special diseases, and, above all, for cases referred for diagnosis or treatment by medical practitioners.

MEDICINE AND THE STATE.

It is part of the programme of the International Social Democratic Party that the State should undertake the entire control of health services, and therewith the practice of medicine, so that in the "State of the Future" the fate of the doctors is sealed. Without wishing to exaggerate this fact, it must not be forgotten that there are some practical men having no sympathy with socialistic dreams, who yet desire to see the medical profession made a service of the State, and among them are even members of the medical profession. Their usual argument is that there is a conflict between the interests of the medical profession and the public health which can only be removed by subsidising it and making its business to be to prevent rather than to cure disease. But while a State medical service is admissible and even desirable for administrative and sanitary purposes, a compulsory absorption by the State of all medical practitioners would not be in the interests of the public, of the profession, or of medical science. If medical practitioners are to be in the service of the State they must be given the power to compel submission to treatment, a condition which would lead to the most extraordinary abuses, while the calling of a medical practitioner would be of all the most miserable. In South Switzerland such an experiment came rapidly to grief; in Bellinzona 55 practitioners accepted fixed salaries to attend both rich and poor, the town and its suburbs being divided into districts, the inhabitants of which paid a small tax for medical treatment; of the 55 doctors at the end of 18 months 53 had come to the conclusion that they could not continue the arrangement, as the demands of the public by night and by day could not be satisfied. Moreover, it must be remembered that doctors are only human, and that human nature has its inherent weaknesses. State doctors would be deficient in diligence and ability, and the "Government Stroke" would be seen in their work so soon as the stimulus of free competition was removed.

At the present time we are threatened with dangers created by proposed social legislation whose bearings it is impossible to foresee, but which are sufficiently serious to justify the distrust with which it is regarded by all classes in the profession. Medical attendance on the poor has been provided by: (1) the Poor-law; (2) charitable hospitals and dispensaries; (3) provident dispensaries; and (4) medical clubs. The first has been the subject of severe criticism, but its worst features are due to the fact that it is generally ill-paid contract work, the better plan being, wherever possible, to give it to whole-time officers who are paid an adequate salary. What has been already said about hospitals applies to dispensaries, as both should be used only for consultations in grave or obscure cases, or for those needing special treatment. Provident dispensaries exist in many towns, but are often regarded with suspicion on account of the unwillingness of their managers to impose a wage limit. Clubs are of many kinds, of which the simplest are those established by individual practitioners, who undertake to give all necessary medical attendance in return for a small annual payment. These are common in country districts and are distinctly beneficial, as the doctor, who would otherwise receive nothing, gets a small payment, while the patient retains his self-respect. As the doctor controls the admission of members, he runs no risk of the club being abused by persons whose circumstances do not justify the concession. Clubs which exist in connexion with works and collieries are generally controlled by the management and not by the men, and their relations with the medical profession are usually satisfactory. It is where medical attendance is provided by insurance societies, medical aid societies, or friendly societies, which seek to make a profit out of this part of their work or to use it as a means of attracting subscribers for their other benefits, that the profession has had most cause to quarrel, so that the Battle of the Clubs has become a familiar headline in the medical press. In 1892 the General Medical Council appointed a committee to inquire into the working of this system, and in 1893 a report was issued, together with a considerable amount of evidence, to prove there was good ground for the dissatisfaction of the profession. The conclusions of the report showed that the evils of which complaint had been made, and which were proved to exist, were the excessive number of patients, causing "great exhaustion and disheartenment to the medical officer," and to the patients' impossibility of obtaining adequate treatment; the abuse of these clubs by persons whose means and social position gave them no claim to be treated on reduced terms; and, lastly, the dependent position of the medical officers, which was inconsistent with the conscientious performance of their duties.

When medical practitioners were allowed to employ unqualified assistants contract work could be performed at least profitably if not efficiently; but in 1897 the General Medical Council, with the hearty approval of the medical profession, insisted that all patients must be seen by qualified practitioners, and the club doctor has since that time been compelled to do the work himself or to employ an expensive qualified assistant. This undoubted reform meant a great improvement in the quality of the medical attendance given to the working classes, and ought to have been accompanied by an increase in the rate of payment, but the legitimate demands of the medical profession were set aside, and as no efficient organisation existed, the result has been a long-drawn-out quarrel and widespread discontent on the part of the medical profession with the club system. The rate of payment is so low that to earn a sufficient income more work is undertaken than can be properly accomplished. The overworked doctor sees his patients hurriedly and falls into a routine method of treatment; he loses interest in his work; the bright ideals with which he started in practice fade away, and when he has time to reflect he feels ashamed of himself and angry at the bondage from which he would gladly escape. That this is a true picture of many a club doctor no one who knows the medical profession can doubt, nor should any one be surprised that the prospect of an enormous increase of this system under the control of the friendly societies fills us with dismay. Such work is not only degrading to the doctor but is bad for the patient, and if custom made some of us blind to its evils, the prospect of having under the National Insurance Law to attend a third of the population on these terms has roused a spirit of resistance which will not be satisfied by rejecting the new proposals, but aims at getting rid of the burden which has galled us for so many years. In this effort we ask for the sympathy and support of the public. The services of a medical practitioner are above all others difficult to appraise, but no one can doubt that they cannot be adequately rendered if he is unable to spare the necessary time to examine his cases. What can be the good of spending millions on the provision of sanatoriums for phthisis

if the medical attendance is to be of such a character that early cases will rarely be recognised? The interests of the public are at one with those of the medical profession in the need for putting an end to contract work. The only argument in its favour is its cheapness, but if it is true that the health of the people is the greatest national asset, we cannot tamper with the efficiency of the medical treatment to be provided. To secure this it is essential that the duty of providing medical benefits should not be entrusted to friendly societies or insurance companies, and that the doctor should be paid for his work and not asked to undertake a contract of which no one knows the risk. The former of these conditions has been admitted to be desirable by the Chancellor of the Exchequer himself, and although it is resisted by the friendly societies, it is to be hoped that Parliament will recognise the need for granting it. But we are told that the second is impossible, because as no one can calculate the risk, and as the funds to be provided under the Act are limited, it is necessary to impose the burden, not upon the general taxpayer, but upon the medical profession! When the proposal is stated in plain language it seems hardly possible that Parliament can be asked to sanction anything so manifestly inequitable. We are told that if the doctor would benefit from the patient's fraud there would be no check on malingering, to which the answer is that in this matter you must trust the medical profession, and the way to make doctors faithful guardians of the public interest is to treat them fairly. Any medical man convicted of conniving at malingering can be made liable to be removed from the panel of practitioners employable under the Act, and you may be sure that there will be a sharp look-out kept by the profession to check such practices. The third objection is somewhat similar, as it is feared the doctor would unduly prolong his attendance, and the answer is the same, but Parliament and the public should know that the National Deposit Friendly Society has for years conducted its business on the principle of paying the doctor for work done, and has not had to complain of the result.

THE NATIONAL INSURANCE BILL.

The National Insurance Bill is admittedly an adaptation of the German law of 1885, and a Parliamentary paper has been circulated (Cd. 5679) containing the opinions of various authorities in Germany in support of the proposed legislation. With equal reason we may look to Germany for warnings and danger signals, and I would point out that the effect of placing the administration of medical benefits in Germany in the hands of committees controlled by working men has been to cause a bitter quarrel between the two parties, and has led to the formation in Germany of a medical organisation with a membership of 21,210, known as the Leipzig Union (*Leipziger Verband*). Its object is to meet organisation by organisation, to create a fund for fighting purposes, and to form a league for conducting an agitation in the event of any action on the part of the societies contrary to the interests of the medical profession. It is, in fact, a trades union founded on the same lines and having similar objects to those of the workmen, and ready to use the same means—namely, a strike, to gain its end. Our German colleagues claim that although this has been said to be unworthy of a liberal profession, it is the necessary outcome of the situation created by Parliament, which has sought to benefit the wage-earners at the expense of the medical profession. So far the Leipzig Union has been victorious in all the contests in which it has been engaged, the best part of the medical profession having rallied absolutely under the banner of professional union. Those who have remained outside are only army doctors, university teachers of theoretical subjects, doctors without practice, and a few cautious medical bureaucrats; and no one knows better than the leaders of the workmen's societies and the directors of the insurance companies that they must rely only upon the most incapable medical aid should they quarrel with the medical profession.

What has been done in Germany can be done here. If Parliament forces a fight upon us we are not unorganised. The British Medical Association, which was founded with quite other objects, has been compelled by the militant tactics of the Friendly Societies and clubs to create a department for the defence of medical interests, and this is conducted with great ability by the medical secretary, Mr. J. Smith Whitaker. During the past year, and owing to the threatened danger, over 3000 new members have joined our ranks, and approximately we number to-day 24,400 members. Without the medical profession the Insurance Act must fail, and I think these numbers justify me in saying that it cannot succeed without the British Medical Association. As all parties in the House of Commons have accepted the principle of the National Insurance Bill, and even the medical profession has accorded a welcome to a measure which proposes to make better provision for the care and maintenance of the sick poor, criticism of it is difficult, yet the experience of Germany and that of those who are well acquainted with the conditions and opinions of our own poor, and of the working of our national institutions which have for so many years striven to help them, should make us hesitate to adopt without careful consideration in all its details a scheme which proposes to revolutionise the relations of the wage-earning classes to the State, to their employers, to the medical profession, and to those charitable institutions to which they must continue to look for help in many serious illnesses.

It is a mistake to suppose that there is any legitimate comparison between the condition of Germany in 1885 and that of this country in 1911. The voluntary principle has been sufficient to provide us with a system of hospitals and dispensaries which is on the whole superior to that of Germany, except in the one department of sanatoriums for tuberculosis, and even here our shortcomings have been exaggerated. Mr. W. H. Dawson claims that Germany has provided 7294 beds for the treatment of tuberculosis, while in England, according to the estimate of the secretary of the National Association for the Prevention of Consumption, we have about 2500 beds; but our population is only half that of Germany, and a comparison of the death-rate from consumption in the two countries warrants the belief that the prevalence of tuberculosis here is only two-thirds of that in Germany. If allowance be made for these facts, 2500 beds constitute nearly as adequate a provision as that existing in Germany. Under these circumstances it is extravagant to provide such a large sum of money for building and maintaining sanatoriums, and unwise to neglect to set aside any funds for the treatment of the numerous special cases that must arise, and of which I fear it is proposed to cast the responsibility upon the voluntary hospitals, whose sources of income have already been sapped by the heavy estate duties, and are further threatened by the taxation under this Bill, which will fall upon the employers and workpeople who at present contribute a share of the incomes of the hospitals in this district which appears to range from 30 to 90 per cent.

How long the friendly societies, which afford a splendid example of national thrift, will survive side by side with the compulsory principle remains to be seen, but it is at least to be hoped we shall avoid the danger of allowing them to become the controlling power in the scheme. In Germany the workpeople have managed to gain this position, and the principal amendments to the German law which have been passed by the Reichstag during the summer have been directed to diminishing the influence of the workpeople on the various committees and preventing the bureaus from being used for political purposes. It is believed that Socialist officials and doctors have been appointed regardless of their qualifications for office, that the distribution of printing and advertisements has been confined to Socialist newspapers, that money has been improperly spent for the purpose of Socialist literature, while paid officials have been permitted to act as Socialist agitators. This is the result of a measure which was advocated by Bismarck as the best means of checking the growth of Socialism! Not only has it failed to do this, but it is also said to have become a corrupting influence which is sapping the honesty and independence of the German people. No one has ventured to impugn the competence and impartiality of Dr. Ferdinand Friedenburg, a lawyer and ex-President of the Imperial Insurance Bureau at Breslau, who, in an article published last April, has made this charge against the Insurance Law. He complains of its extravagant management, of the endless litigation to which it has led, of undue pressure being brought to bear on magistrates and medical practitioners to induce them to give decisions favourable to the workpeople, of excessive compensation, of laxity in interpreting the law, and of the enormous increase in the number of claims which from 100,159 in 1886 rose to 662,231 in 1908. In his opinion it

has led to general demoralisation among the classes concerned; claimants magnify slight injuries, neglect prescribed treatment, keep wounds open by artificial means, or remove or spoil apparatus, and then represent that it has done harm. He points out that the position of the doctors is peculiarly difficult, as they stand between the insured and the insurance board, and every claim must depend upon medical support. The consequence is that a doctor known to be lenient is sure of a large practice, while one who tries to do his duty is boycotted and driven out of practice, and he gives instances of cases within his own knowledge in support of these charges. But we need not look to Germany alone to find ground for mistrusting the effect of this legislation. Miss Loane, whose work amongst the poor gives her the right to express an opinion, is convinced that compulsory insurance will not be regarded by them as a benefit. She says that they fail to understand the principle of insurance, and often account themselves wronged if no illness occur to enable them to make a claim on their club, while the sight of a neighbour benefiting by insurance increases their unwillingness to join or to continue to subscribe, because they see that the sick man is drawing their money, and if the club were the State she thinks the practical results would be no better. Even voluntary insurance, if the result of over-persuasion, gives rise to most unbounded claims, and commonly results in bitter discontent. She tells of a young woman who was induced to pay 2*s.* a year for three years, for which she enjoyed ten weeks at a seaside convalescent home, besides various small privileges. Her mother was deeply dissatisfied with this return for her money. Again and again she said: "T'ain't as if she 'asn't paid for it; three years on end she has been paying in regular. I don't call that no charity!" If these are the results for which we are destroying the voluntary principle and establishing compulsory thrift in its place, we may well doubt whether future generations will be so grateful to our present legislators as they would doubtless wish.

I regret that I have been obliged to refer to political matters in this address, but this is not a party question, and the medical profession is not divided about it. Silence on my part would have been misunderstood, and if I have succeeded in defining our position and in making clear what we desire, and why we do so, I shall have attained the object I had in view.

Address in Medicine

ON

MISTAKES.

Delivered at the Seventy-ninth Annual Meeting of the British Medical Association

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—Allow me, in the first place, to express my thanks—my very sincere thanks—to the Council of the Association for the honour it has conferred upon me in asking me to give this address. The feeling of pleasure and satisfaction which I experienced on receiving the request of the Council was, I need hardly say, qualified by a feeling of apprehension when I realised how difficult it would be to follow satisfactorily in the footsteps of the long roll of distinguished men who have preceded me in this honourable position, and how difficult it is to fix upon a suitable subject for one's remarks. While thinking over likely subjects—some scientific, some of general interest—I asked Dr. William Collier, when we were examining together at the Army Medical College in January last, what he would suggest. Dr. Collier thought that as the great majority of the audience would be general practitioners, a practical subject would be much more acceptable than an elaborate discussion on a scientific or technical subject; he thought one of the most interesting and instructive subjects, in the hands of a man of wide clinical experience, would be Mistakes. Well, that being so, it seemed to me that mistakes was a subject with which I was well qualified to deal, for I have had a large and varied clinical experience and—I have made many mistakes.

It is hardly necessary to say that it is not a question of who makes and who does not make mistakes; it is only a question of who makes the most mistakes and the biggest mistakes. The most experienced of us, who make a point of checking our clinical observations and diagnoses by post-mortem examinations whenever it is possible to do so, will I am sure, admit that we make many mistakes. Nor can this be wondered at when one remembers the extent of modern medicine and the impossibility of any one man mastering it as a whole and making himself practically familiar with each of its individual parts in detail; the extreme complexity of many of the problems with which the physician has to deal; the elaborate and highly technical nature of some of the chemical, instrumental, and other methods of clinical examination and research which we employ; the insufficient data on which we have sometimes to found our opinions; the great difficulty we often have in eliciting and observing the facts; the circumstance that in some cases we have to rely upon the statements and observations of the patient or his friends for some of the data on which our opinions have to be based, and that those statements and observations are often inaccurate and sometimes positively misleading; and the natural imperfections which are inherent in every human mind.

But there are mistakes of various kinds. There are the bad mistakes which show incapacity to make the most ordinary observations, gross ignorance, or inexcusable carelessness; and there are the slight mistakes—they perhaps should hardly be called mistakes—such as erroneous conclusions with regard to the significance of certain facts or groups of facts. There are mistakes of omission and mistakes of commission, mistakes due to incomplete, inaccurate, or erroneous observation, mistakes due to hasty or illogical conclusions. There are mistakes which as regards their results are unimportant; and mistakes which, either to the practitioner who makes them, to the patient whose case is wrongly diagnosed, or to the public at large, are of great importance, since they may entail very disastrous consequences.

Everyone will allow that one learns from one's mistakes, and that when one does make a mistake, one should always try to analyse it and find out the cause of that mistake.

IMPERFECT KNOWLEDGE.

Mistakes due to imperfect knowledge, to want of clinical experience, to erroneous observation, to inability to observe correctly, are most common in the early years of one's practice. Let me mention one or two mistakes of this kind, for the details of concrete cases, which have actually occurred in one's own practice, make far more impression on the mind of one's audience than mere statements of fact as regards differential diagnosis.

Hæmoptysis due to mitral stenosis mistaken for phthisis.—Soon after I entered practice a young man came to me complaining of cough and spitting of blood. He was a thin, weedy individual of poor physique; several of the members of his family, I knew, had died from phthisis; bronchitic râles and moist sounds were present over the apices of the lungs. Without examining the heart I diagnosed phthisis. Some little time afterwards he consulted the late Dr. Murchison, who found that he had mitral stenosis and that he was not suffering from phthisis. Since then I have never failed to examine the heart in all cases of hæmoptysis.

Hæmorrhagic small-pox mistaken for typhus fever.—About the same time I was called to see a well-to-do old gentleman living in eminently satisfactory surroundings. His illness was of two days' duration. It had commenced with headache, backache, and vomiting. He was feverish; the lower part of his abdomen and adjacent parts of the inner side of the thighs were covered with a profuse, confluent, plum-coloured, purpuric rash; his conjunctivæ were suffused with blood; he was vomiting blood and passing blood by the bowel and kidney. He rapidly became comatose, and died before the consultation which had been arranged with the late Dr. Charlton of Newcastle came off. I certified his death as due to typhus. The diagnosis was much criticised. There was no typhus, and for years there had been no typhus, in the place—North Shields. Subsequent inquiry and consideration showed that

the case was one of malignant small-pox. The old gentleman—a shipowner—was in the habit of visiting his retired ship captains. In the house of one of them, who lived in Newcastle, and whom he had visited about a fortnight before the commencement of his illness, there was a case of small-pox. There was no small-pox in North Shields at the time. Soon afterwards we had a severe epidemic, during which I saw more than one case in which the remarkable initial purpuric rash over the bathing-drawer area and adjacent part of the thighs, which was such a striking feature in the old gentleman's case, was present.

Pain in the back due to the pressure of an aortic aneurysm.—A full-blooded, robust-looking man came to me complaining of a fixed pain between the shoulders. I could not detect anything abnormal; and, relying too much on my powers of physical examination (as the young practitioner who has just qualified is apt to do) I ignored the symptom, the patient's suffering, and told him that there was nothing of consequence the matter with him. Shortly afterwards he died suddenly. Post-mortem examination showed an aneurysm of the descending thoracic aorta, which had ruptured into the pleural cavity. Since then I have never disregarded a fixed pain in the back in an aneurysmal-like subject, and I have always tried to give due weight to the patient's symptoms and complaints.

But while, as this case proves, mistakes may result from ignoring or making too light of the symptoms and complaints of patients, the remarkable absence of symptoms in some cases of advanced organic disease shows that the *only way to avoid mistakes of omission is to make a complete physical examination in every case which comes before us.* The following case illustrates this point.

Enormous aneurysm of the thoracic aorta: no symptoms.—A man, aged 58, who had worked for two years at the Forth Bridge during its construction, first as a fitter, afterwards in looking after the planing machine, neither of which is heavy or severe work, received a blow on the right eye on March 9th, 1885. On admission to the Edinburgh Royal Infirmary the lens was found in the anterior chamber. It was removed by the late Dr. Argyll Robertson the following day. On the evening of March 14th he had a severe attack of dyspnœa. Physical examination showed extensive dulness and heaving pulsation over the upper part of the front of the chest. He died suddenly the following day in consequence of the rupture of an aneurysm into the left pleura. Now, up to the date of the accident this man had never been off work for a single day, had never consulted the doctor gratuitously provided for the employees at the Forth Bridge, and had never made any complaint to his fellow workmen. The case is remarkable, for, in addition to this enormous fusiform aneurysm—I think it is the largest intrathoracic aneurysm I have ever seen—the trachea was directly pressed upon and flattened by a small secondary sac.

HURRY AND HASTY CONCLUSIONS.

In the case of experienced practitioners, *hurry, and the incomplete examination of patients due to hurry, and hasty conclusions* are probably by far the most common causes of errors in diagnosis. Physiognomic diagnoses, I need not say, are apt to be erroneous. Some of you have, no doubt, heard the story of the professor who prided himself on his powers of physiognomic diagnosis, and the patient with gouty, *but artificial*, teeth.

INACCURATE INFORMATION.

Mistakes are not infrequently due to the fact that *the information which we get from third parties is insufficient, inaccurate, or misleading.*

Suspected Addison's disease.—A pitman came to me complaining of loss of strength and weight, which he said had followed an attack of influenza. I could detect no physical signs of disease to account for the extreme asthenia and marked emaciation. His hands and face were deeply pigmented, but for some weeks after the influenza he had been sitting out in the sun. The skin of his back was, I thought, a little dark. Thinking that the case was probably one of Addison's disease, I was anxious to get further information on the point, and told my house physician to bring in the patient's wife. On asking her whether she thought the patient's skin was darker than it had been before the attack of influenza she answered, "I could not say." I then told her to look at the patient's back and tell me whether she thought it was darker. She said, "I could not say; I never saw his back before." I then said, "That is a remarkable statement. Do you mean to tell me that you never saw your husband's bare back before?" She then said, with some show of indignation, "He is not my man at all!" It appeared that the house physician had brought in the wrong woman. Now if the information available had stopped here a mistake of omission might easily have occurred; but fortunately the real wife was available; she thought that the skin was darker. The patient died a few days later, and the diagnosis of Addison's disease was confirmed.

Functional spasm.—In January, 1910, I published in my *Clinical Studies* an interesting case of spasmodic muscular contractions in which the symptoms disappeared rapidly and completely under isolation and psycho-therapeutics. The doctor who sent the patient to me had diagnosed the case as Thomsen's disease; he wrote me saying that the patient had been in the Cardiff Infirmary, where the same view had been taken of the case, and where the patient had not improved. In commenting on the case I quoted these statements, not with the object of reflecting in any way on the diagnosis, but for the purpose of showing how closely in some of its features the case resembled Thomsen's disease. Some 15 months after the case was published I received a letter from the physician under whose care the patient had been saying that he *had not* diagnosed the case as Thomsen's disease, and that the patient *had* improved in the Cardiff Infirmary, and asking me to contradict my statements. I am glad to take this opportunity of putting the matter right, and correcting the, but not my, mistake.

The importance of verifying one's facts before giving an opinion was forcibly brought home to me by the following case. I once asked an old lady, for whom I had prescribed a few days previously, how she was feeling. She replied, "Very much better, thank you, I am almost quite well again." I then said, "I was sure *that* medicine would do you good." The patient smiled and said dryly, "But, doctor, I did not take it." I need hardly say I felt "very small." I learnt by that mistake.

UNDESCRIBED DISEASES.

Before a disease is described as a distinct clinical and pathological entity, typical and characteristic cases, which a few years later are easily diagnosed, are mistaken for other conditions; after the disease has been recognised and described one wonders how one could possibly have made such mistakes.

Myxœdema is a striking illustration in point. The appearance of typical cases of myxœdema is so characteristic that one can with certainty recognise them at a glance. But until the late Sir William Gull published his description of the clinical features of the disease in 1874, cases of myxœdema were generally diagnosed as cases of Bright's disease or obesity. That some observers were well aware that the condition was a peculiar one I know from my own experience; for when I entered practice in the year 1869 my father showed me a splendid example of the disease, directed my attention to many of the characteristic clinical features, and told me that he believed the condition was a new disease—a disease which had never been described.

Myasthenia gravis is another excellent illustration. I remember when in general practice being much puzzled by the case of a young woman supposed to be suffering from hysteria; she died suddenly with bulbar symptoms. Post-mortem examination revealed nothing to account for the death. I now know that it was a case of myasthenia gravis.

ERRONEOUS DEDUCTIONS.

Mistakes due to *erroneous deductions and illogical conclusions* are very common. Nor is this to be wondered at when it is remembered that there is probably no faculty of the human mind which differs more in different individuals than the faculty of judgment—the power of seeing things in their correct proportion, the ability to weigh correctly all the facts of a case and to draw the correct and logical conclusion from them. Even those men in whom the judicial faculties are most highly cultivated often fail to draw the same conclusions from the same facts. How frequently we see the judges differing on points of law, and the opinions and decisions of the lower courts reversed in the Court of Appeal and in the House of Lords! Now, if this occurs in law, how much more likely is it to occur in medicine; for, in comparison with medicine,

law may be almost regarded as a fixed science. Further, in medicine the facts on which our conclusions and opinions have to be based are, in many cases, very difficult to observe, and, in some cases, chiefly or entirely consist of the subjective sensations described by patients.

Mistakes in diagnosis often occur because *undue importance is given to some symptom or physical sign* which is present. Take, for example, *double optic neuritis*. In many cases in which the diagnosis lies between an intracranial tumour and some of the other conditions with which it is apt to be confounded, the presence of double optic neuritis decides the point in favour of tumour, and the absence of double optic neuritis is a cause of doubt. On the other hand, the presence of double optic neuritis may suggest a diagnosis of tumour when no tumour is present. The differential diagnosis of tumour of the frontal lobe and general paralysis of the insane is sometimes attended with great difficulty.

Now, double optic neuritis, which is so common in cases of intracranial tumour, is very rare in cases of general paralysis of the insane; consequently, if double optic neuritis happens to be present in a case of general paralysis of the insane, in which the diagnosis lies between general paralysis of the insane and frontal tumour, the diagnosis is very likely to be erroneous. The same statement applies, though with much less force, to localised tenderness on skull percussion.

Again, take *hunger pain, the presence or absence of free hydrochloric acid in the gastric contents, and hæmatemesis.* A few months ago a middle-aged man consulted me because of abdominal symptoms. Typical hunger pain was present and there was an abundance of free hydrochloric acid in the gastric contents. I diagnosed duodenal ulcer. A distinguished surgeon to whom I referred the patient thought it was colitis and sent him to Harrogate, where he was treated without benefit. Three months later a hardness developed in the epigastric region. An exploratory incision showed inoperable carcinoma of the stomach and liver.

During the past 18 months I have had in my wards, first, a case diagnosed as a simple ulcer of the stomach in which there was an excess of free hydrochloric acid in the stomach contents; it was operated upon and found to be cancer. And, secondly, a case which was thought to be cancer of the stomach, in which there was no free hydrochloric acid in the gastric contents; operation in that case showed simple ulceration with considerable inflammatory thickening, which could be felt as a definite hardness in the pit of the epigastrium around the pylorus.

The gastric crises of tabes are occasionally mistaken for stomach ulceration, more especially if, as is sometimes the case, there is hæmatemesis. Since Dr. Hale White directed attention to this point we all, I suppose, recognised that gastric pain, vomiting, and hæmatemesis—in rare cases, even, fatal hæmatemesis—may occur in young women without any obvious ulceration of the stomach. I am disposed to think that in some cases of this kind a superficial abrasion or ulceration was present, and that it healed before the stomach was inspected by the surgeon or pathologist. The occurrence of hæmatemesis in cases of appendicitis may be very misleading. Some years ago I saw a case of acute peritonitis, in which there had been recent hæmatemesis, and diagnosed it as an ulcer of the duodenum which had perforated. Mr. Stiles operated and found that the peritonitis was due to appendicitis. Speaking of appendicitis, I may say that about two years ago I had under my care in hospital a case of pre-ataxic tabes, with very severe intestinal crises, in which an operation for appendicitis had been performed. I was not able to get information as to the condition of the appendix, but I strongly suspect that the symptoms for which the operation was undertaken were due to the tabes, and that the appendix was healthy.

I sometimes think that there is a tendency to attach too much importance to some of the instrumental and other elaborate methods of diagnosis which have recently been introduced—as, for instance, the graphic methods concerned with the heart and circulation—and to underestimate an all-round clinical experience and knowledge. It has recently been suggested that erythema nodosum is a tuberculous condition, one of the grounds for this conclusion being the very marked von Pirquet reaction which occurs in that disease. I admit the fact, but do not agree with the conclusion, for in a condition like erythema nodosum, in which the skin and subcutaneous tissues are more prone to inflame than in health, a positive von Pirquet seems to me to be of little or no importance as a sign of tubercle.

I do not for a moment intend to imply that I undervalue the importance of these instrumental and other methods of clinical investigation. Quite the contrary; the information which they give us is often all-important for diagnosis and in some cases of great value for prognosis and treatment, but they have their place. For the purposes of successful prognosis and treatment nothing will ever replace an all-round knowledge based upon a wide and extensive clinical experience. As an illustration of the value of these instrumental methods, I may mention that I find the sphygmomanometer of great use in demonstrating high blood pressure in cases in which dropsy and other symptoms of cardiac failure are due to, or are associated with, increased peripheral resistance—arteriosclerosis and contracted granular kidney. In these cases, which are often diagnosed as cases of primary mitral regurgitation—a mistake which in my experience is very frequently made in practice—it is sometimes extremely difficult or impossible to detect the high blood pressure by means of the finger.

Mistakes are sometimes due to *too little importance being attached to some fact or facts.* One is apt, for example, to ignore or underestimate the importance of an opinion expressed or hinted at by others, when that opinion does not coincide with one's own view. A case occurred in my practice, now more than twenty years ago, which brought this source of mistakes very forcibly to my mind. In that case, if I had not been able to correct my mistake, very disastrous results would have followed.

ILLUSTRATIVE CASES.

An old gentleman came into my consulting-room with a robust, healthy-looking man, aged 38. He stated that this gentleman was to marry his daughter the following day, but that they had just received a telegram from one of our distant colonies saying the gentleman's relatives objected to the marriage unless I thought it might take place. The prospective bridegroom stated that when he came to this country some eight weeks previously he was run down, that he had quite recovered, and that he now felt perfectly well. The prospective father-in-law stated that neither he nor his family had noticed anything amiss, either physically or mentally, with the supposed patient. With the exception of a little tremor of the tongue, a little thickness of speech when the patient first came into my consulting-room, and some unsteadiness in "fixing," while he was being examined with the ophthalmoscope, I found no evidence of disease, either physical or mental, and stated that I did not feel justified in prohibiting the marriage. On thinking over the case, I became more and more convinced that the bridegroom's relatives would not have telegraphed in the way they had done unless they had good reason for supposing that there was something seriously wrong, and I came to the conclusion that he was probably suffering from general paralysis of the insane, and that it was clearly my duty to stop the marriage. I went early the next day to the prospective father-in-law's house, had another interview with the bridegroom, satisfied myself that the case was one of general paralysis of the insane, and advised that the wedding should be postponed. This was agreed to. Further symptoms soon developed, and before long the patient was sent to an asylum. There were some dramatic features connected with the case, but even at this length of time I do not feel myself at liberty to mention them.

A number of years ago a photograph of a patient in an extreme state of muscular atrophy came under my notice. I ventured to doubt the diagnosis—pseudo-hypertrophic paralysis—and said that it looked much more like a case of poliomyelitis anterior acuta. Some years later I followed up to post-mortem examination a case of pseudo-hypertrophic paralysis which, in its later stages, presented identical appearances with the case I had criticised. A distinguished foreign neuropathologist, on looking through some of my photographs, made the same criticism on my case as I had made on the other case; he was only convinced that it was a case of pseudo-hypertrophic paralysis, and not a case of poliomyelitis anterior acuta, when I

told him that two brothers of the patient had had the disease, and when I showed him sections of muscle which presented all the typical characteristics of pseudo-hypertrophic paralysis.

SUPPOSED MISTAKES OF OTHERS.

Early in my career I learnt *how cautious one should be in publicly criticising the supposed mistakes of others.* In the year 1877 I published a case in which pigmentation of the skin was present during life, and in which (in addition to other lesions) complete caseous destruction of one suprarenal capsule, the other being healthy, was found after death, and suggested that the skin pigmentation was due to the suprarenal lesion. A distinguished assistant physician and lecturer on physiology criticised this conclusion, and stated that Addison's disease was never due to destruction of one suprarenal. Well, I was a young man, more sensitive than I am now, and I felt the public criticism a good deal. But I was able to turn the tables upon my critic, for, on consulting Dr. Greenhow's work, I found that two cases of Addison's disease had been met with in which one suprarenal only was diseased, and that one of these cases had actually been seen and diagnosed as Addison's disease by the very gentleman who had criticised me.

BIASSED JUDGMENT.

Errors in diagnosis are often due to the fact that *one's judgment is warped or biassed* from some cause or another. Most of us probably know how difficult it is to diagnose and treat illness in oneself or in members of one's own family. One's judgment is upset by anxiety and fear; all sorts of terrible possibilities occur to the mind and prevent one taking a cool and level-headed view of the case. We all know how frequently medical students imagine that they are the subjects of heart disease; they come into one's consulting-room depressed and believing they are the subjects of grave organic disease; they leave a few minutes later cheerful and feeling quite well. Probably some of my audience may, because of some temporary fibrillary twitchings, have imagined that they were the subjects of progressive muscular atrophy, or, because of some gouty pains, that they were suffering from tabes.

On the other hand, one occasionally sees the exact reverse of this picture—a medical man the subject of advanced organic disease ignoring it or making light of it, and of the symptoms which it produces, in the most extraordinary way.

Cases of euphoria.—A distinguished member of the profession, in the last stages of cardiac valvular disease with dropsy, at more than one of my visits pointed out with great satisfaction the increased measurement of his calves, thinking, or professing to think, that it was indicative of increased muscular nutrition. A highly intelligent medical man, aged 56, arrived in Edinburgh, invalided home from India, in a dying condition—profoundly cachectic-looking, emaciated to the last degree, so weak that he was unable to walk across the room, with an unhealthy sloughing ulceration of the cornea. He believed that there was nothing of importance the matter, and that the great weakness and extreme emaciation were entirely due to the small doses of morphine which he had been taking. A hard tumour, fully the size of a child's head, evidently malignant, occupied the upper and central parts of the abdominal cavity. The patient and his wife were amazed when this tumour, which could not only be felt with the greatest ease, but which formed a visible projection, was pointed out to them. The patient died a few days after his arrival in Edinburgh.

We all know how *one's judgment is apt to become biassed in favour of some particular theory or idea*, and how, under such circumstances, one sees everything in the light of that idea. Some of the differences of opinion which arise in railway and other compensation cases are due to the fact that the doctors on one side are apt to attach too much, and the doctors on the other side too little, credence to the patient's statements and complaints.

The difficulty of deciding whether a patient is suffering from organic disease or merely from functional disturbance of the nervous system is often very great, even in ordinary private practice, and in cases in which there is no question of compensation—in cases in which there is no suspicion of malingering or of wilful exaggeration. On the one hand, we meet with cases—cases, for instance, of disseminated sclerosis and early general paralysis of the insane—in which grave organic disease of the nervous system is mistaken for hysteria or functional derangement; and, on the other hand, cases in which functional symptoms are thought to be indicative of grave organic disease; in a third group of cases symptoms due to organic disease and functional derangement are both present. Now if those of us who have given special attention to the study of diseases of the nervous system have sometimes difficulty in deciding in which of these groups a case should be placed, it is not to be wondered at that others whose knowledge and experience of nervous disease are, in comparison, very limited, should often have great difficulty in coming to a conclusion, deciding the question, and that differences of opinion, which to the lay mind may seem extraordinary, are apt to occur in courts of law.

All of us who are engaged in hospital practice, and especially those of us who see many nervous cases, will, I am sure, agree that since the passage of the Workmen's Compensation Act, cases in which nervous symptoms are developed after injuries, or supposed injuries, have become much more common; and that in these cases, whether the symptoms are indicative of organic lesion or of functional disturbance, the duration of the illness has become much prolonged. My experience shows that in these cases the patients do not get well, or get well with difficulty, so long as the question of compensation is pending. I personally have little doubt that when the National Insurance Bill is passed the same result will follow in some, perhaps many, of the non-traumatic cases—in cases of ordinary illness—and that the amount of attendance required in the case of patients compulsorily insured will be very much greater than has been calculated. Some people seem to think that it is easy to detect malingering. Those of us who are experienced know that there is nothing more difficult. In the great majority of cases it is not a question of saying whether a patient has disease or has no disease, for, in my experience, actual malingering, when there has been no injury and when there is no disease, is, comparatively speaking, very rare. The difficulty chiefly occurs in cases in which the patient is actually ill or has recently been ill, in saying whether the illness or disease from which he is suffering or has recently suffered will account satisfactorily for all of the symptoms; in saying whether the symptoms which are still present would still have been present provided there was no question of compensation. Conscious or unconscious exaggeration of symptoms, and conscious or unconscious refusal to get well, are, in compensation cases, exceedingly common. It is often extremely difficult, even for the most experienced and expert physician, to give a positive opinion in cases of this kind. It is a practical question, I think, whether such conditions as neurasthenia and hysteria should not be excluded from the medical benefits under the National Insurance Act, though this would, of course, entail hardship on some genuine sufferers.

INADEQUATE OBSERVATIONS.

Erroneous therapeutic conclusions, based on too limited a number of observations, are common; and the worst of it is that these premature conclusions sometimes get into the text-books, and are copied from text-book to text-book, until finally it is definitely stated, and generally accepted, that such and such a drug is of value in such and such a disease. Remarkable coincidences, too, occur which tend to foster the production of errors of this kind. It is a curious fact that the first cases which one treats with a new drug are sometimes the most successful. The first case of pernicious anæmia which I treated with arsenic lived longer (13½ years) than any of the many other cases which I have since treated. That was no doubt a pure coincidence. In the first three cases of psoriasis which I treated with thyroid extract the results were extraordinarily successful. That was perhaps not entirely a coincidence. I have had many other successful cases since, and also many unsuccessful ones. My first cases were all treated with the raw gland, not with tablets, and were all females. I am disposed to think that the raw gland is more efficacious than some tablets, and that psoriasis in the female is more amenable to thyroid treatment than psoriasis in the male. The thyroid gland seems to be more active in the female, and exophthalmic goitre and myxœdema are, as we all know, much more common in the female than in the male.

Nomenclature.—Let me say a word or two regarding nomenclature. Every one will, I suppose, agree that it is a mistake to name a disease after its discoverer. The name should, if possible, give some information as to the nature of the disease or as to its leading clinical characteristics. Is it too much to hope that in the course of time such terms as "Bright's disease," "Graves's disease," "Addison's disease," which are very firmly rooted, will be discontinued? The term "Graves's disease" is specially unfortunate, for in Germany the priority of Graves to the discovery is disputed, and the condition is termed "Basedow's disease." Even at the present day the unfortunate system, as I think it is, of naming diseases after their discoverers is still sometimes followed. A distinguished authority has recently suggested that the term "pernicious anæmia" should be discontinued and the term "Addisonian anæmia" or "Addisonian idiopathic anæmia" given to the disease. Now Dr. Hunter's most important observations and researches show that the disease is probably due to destruction of red blood cells, chiefly in the portal circulation, probably the result of a toxin absorbed from the gastro-intestinal tract. If the term "pernicious anæmia" is to be discarded (but I think this would be a mistake, for I maintain it is a good term which correctly represents the ultimate course of the disease under our present methods of treatment, and correctly differentiates this from other forms of idiopathic anæmia), I would, until the exact cause of the disease is definitely determined, suggest the terms "gastro-intestinal hepatic anæmia" or "gastro-intestinal toxic anæmia" as more suitable than "Addisonian anæmia."

Injurious Effects of Diagnostic Errors.

I have said nothing as to the *injurious effects which may result from diagnostic mistakes and erroneous conclusions.* Most of us probably know to our cost how harmful a mistake in diagnosis—it may be even a quite excusable mistake—may be. On the other hand, many of us have no doubt gained credit and reputation from a correct diagnosis; but while this is so in occasional instances, the public are often quite unable to appreciate at its true value a successful diagnosis in a difficult medical case.

I needly hardly say that the correctness of the diagnosis is often of very great importance to the patient. Take, for example, a case of functional nervous derangement. The prognosis and the success of the treatment entirely depend upon the correctness of the diagnosis. If the case is merely functional, we can, in many cases at all events, cure it, or temporarily cure it, for relapses not infrequently occur; if the case is one of organic disease we are unfortunately in many cases unable to cure it. And here I would point out that it is a mistake to suppose that mere isolation in a nursing home or hospital and a course of so-called Weir-Mitchell treatment will of itself cure the functional cases. In many cases the success of the treatment depends entirely upon the personal influence of the doctor and of the nurse. A doctor who has been treating a case of this kind without success in the patient's house will not be likely to cure her by removing her to a nursing home and putting her through a course of Weir-Mitchell treatment. A doctor who is not sure of his diagnosis, a doctor who cannot impress the patient with confidence and authority, rarely deals successfully with these cases. The composition of the medicine which is prescribed is, in some of these cases, of little or no consequence; distilled water given hypodermically is often very efficacious; the main object of the medicine is to keep up the mental effect produced by the favourable and confident opinion of the physician, and to impress the patient with the belief that something active is being done to cure her. Speaking of distilled water, I may mention an amusing case which occurred in my hospital practice a few years ago. A young woman came home from South Africa because of very severe muscular spasms, which on examination were found to be due to functional disturbance. She was treated by the milk-isolation method, the faradic current, and hypodermic injections of distilled water. In showing the case to my clinic, after her recovery, I emphasised the importance in such cases of the powerful remedy H_2O given hypodermically, and was surprised to see that the patient was very much amused. It appeared that she was a school teacher who was in the habit of giving instruction in elementary chemistry. Fortunately she was cured before she knew the composition of the remedy.

Unfortunate results of a far-reaching kind to the public at large are sometimes due to erroneous conclusions and opinions. Take, for example, the subject of tuberculosis. Koch's conclusions regarding the therapeutic value of tuberculin, Koch's opinion that bovine tuberculosis cannot be communicated to man by milk through the gastro-intestinal tract, were, I think, to say the least of it, unfortunate. The same statement applies, I think, to the late Sir Richard Thorne Thorne's antagonistic views on the compulsory notification of phthisis.

Occasionally, on the other hand, our mistakes lead to beneficial results. In the first case of myxœdema which I treated with thyroid feeding I gave far too large a dose of the raw gland, with the result that acute thyroidism nearly caused the death of the patient. During convalescence the skin peeled off in large flakes; the copious desquamation which resulted from the overdose of the remedy suggested the advisability of employing thyroid extract in the treatment of psoriasis and other forms of skin disease.

I have tried in these, I fear somewhat fragmentary and commonplace, remarks to bring before you some of the chief causes of our diagnostic errors and mistakes, and indirectly to point out that the only way to avoid diagnostic mistakes is, first, to gather carefully and correctly the data—the facts on which the diagnosis has to be based—by exhaustive and accurate clinical observation and examination; secondly, after these data have been obtained to weigh them impartially and judicially, taking all the facts into consideration, avoiding, so far as possible, preconceived opinions, giving due weight to the symptoms and sensations of the patient as well as to the physical signs; and thirdly, to draw a logical and correct conclusion from the premisses. If what I have said will stimulate some of you to observe your cases with greater thoroughness and interest, and will help you to avoid some of the mistakes which I myself have made, I shall be well content.

Address in Surgery

Delivered at the Seventy-ninth Annual Meeting of the British Medical Association

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Mr. President, Ladies, and Gentlemen,—My first desire is to thank—and to earnestly thank—my medical friends for their kindness in suggesting to the Council of the Association that I should be invited to deliver the address in Surgery in my native city. The acceptance of this suggestion by the Council I recognise rather as a mark of its confidence in the arrangements committee than an expression of opinion on my fitness to bear the honours and the burden of so exalted a position. For that mark of confidence I thank the Council, and for the high distinction I have received at their hands I am profoundly grateful.

It is not unfitting at this moment to refer to the recent death of one of the greatest of the older school of Birmingham surgeons. Only a few days ago the last of my surgical teachers passed peacefully away at a ripe old age, and after a long and well-earned retirement from the strenuous labours of a hard professional life. Furneaux Jordan was one of Nature's gifted sons—intellectual, original, honourable, courteous, enthusiastic, and artistic. He was a born teacher and a clever surgeon, and to an early association with him and his work I owe much of whatever surgical success I may have been fortunate enough to attain.

1856. Langston Parker.

In 1856 (the Branch being scarcely two years old) the first annual meeting of the Association in Birmingham was held, and the first Address in Surgery delivered by a Birmingham surgeon—Mr. Langston Parker—the subject of his address being the Treatment of Cancer by Caustics. He advocated the caustic method of treatment in nearly all

forms of cancer on or near the surfaces of the body, either cutaneous or mucous.

The experience of a moderately busy surgical career (says Mr. Parker), during which time the treatment of an unusual number of cancerous diseases has fallen to my lot, painfully impressed me, as it must have done other surgeons similarly placed, with the inutility of operations with the knife performed for the removal of the disease.

Many of the cases described in detail, upon which his opinions were based, are as remarkable as they are interesting, and furnish material over which a thoughtful and unprejudiced person may pause to reflect. The caustic treatment of cancer by these older methods is to-day regarded as almost criminal; its practice is chiefly in the hands of quacks and charlatans. I say "chiefly" for two reasons: there are still a few surgeons—and I confess to being one of them—who occasionally practise this older method in certain superficial cancers where cutting operations are declined, and with very satisfactory results. There is a much larger body of medical practitioners who deem it legitimate to attempt the cure of cancer without operation—superficial as well as deep—by means of more modern inventions, and doubtless with some success; but I have seen their successes and I have seen their failures, and any wonderment I may have experienced from the former has been overwhelmingly dissipated by the tragedies of the latter. A few years' experience in the surgical wards of the workhouse infirmary of a large city teaches you something of the failures of our art in many directions, for there are to be seen the derelicts of surgery, drifting unrecorded and unproclaimed into the silent ocean of eternity.

The name of Langston Parker will always be remembered as one of the earliest of the English scientific writers on syphilis, and the originator of the treatment of this disease by mercurial fumigation.

1872. OLIVER PEMBERTON.

The second annual visit here was in 1872, when my revered old master, Oliver Pemberton, gave the Surgical Address. He was a surgeon of a somewhat similar type to his predecessor—full of the better characteristics of human nature. He was a manly man, genial, kindly, courteous, conscientious, well-informed, of sound judgment and wide practical experience. He was a fine specimen of an old school of surgeons which has almost ceased to exist—the school which gave us in this country Sharp and Cheselden, the Hunters and Coopers, Syme and Fergusson, Brodie and Paget, and a few great masters still with us.

Mr. Pemberton spoke of the great cities of these kingdoms as so many centres of surgical study, having features marked and distinctive, created no less by local than by personal circumstances, and submitted to his audience the fruits of personal observation connected with some of the chief maladies that demanded the skill of the surgeon here in Birmingham at that time—surgical aneurysms, lateral lithotomy, and urethral stricture being the matters of all others which had chiefly engaged his attention during his 30 years' labour as a practising hospital surgeon. Although this address was delivered no longer ago than the days of my own apprenticeship, these chief maladies which then demanded the skill of the surgeon have only a passing interest for him at the present time. Surgical aneurysms are among the rarest of our surgical disorders, and interest us now chiefly by reason of the ingenious but misguided and unnecessary efforts which are made to devise operations for their cure, more complicated, more dangerous, and less trustworthy than the old procedures of Anel, Hunter, and Syme. Lateral lithotomy has fallen into disuse, satisfactory as an operation though it be. Early in my practice I had a run of nearly 60 consecutive cases without a death; and as for urethral strictures, except when they are impermeable or are complicated by urinary extravasation, multiple fistulæ, or the like, their hospital treatment is now left usually in the hands of a house surgeon.

1890. LAWSON TAIT.

At the last annual meeting in this city in 1890 Lawson Tait was on all hands recognised as the most fitting surgeon to deliver the Surgical Address, and spoke from this platform to a large and expectant audience. His discourse, like himself, was broad, vigorous, daring, dogmatic, and delivered with a style and an ease peculiarly his own.

Much of that address of 21 years ago might appropriately be delivered again to-day. The need for stirring change in the modern teaching of anatomy and physiology to students who are to become practitioners of medicine, the advantages of an apprenticeship system, the need for technical instruction in the handicraftmanship of our profession, the changes in surgical methods and the extension of surgical possibilities, the need for more uniform and more exact records of results, and the influence of fashion in surgery and medicine are themes upon which there is still much to be said.

It was here in Birmingham that Tait's great position was made, and within almost a stone's throw of this hall that most of his surgical work was done. He was a remarkable man—perhaps the strongest personality I have known. In some ways he was a giant, and the power of the man held you like a vice. As a surgeon he was a genius; justice has not yet been done to him, and possibly never will be, for the part he took in that wonderful development of abdominal surgery which occurred in the last quarter of the nineteenth century.

After completing his education in Edinburgh, and holding one or more house surgeoncies in provincial towns, Tait bought a general practice in a Birmingham suburb, and there began his life's work. From this modest position, with no hospital appointment at that time, and no great local influence, he set out on a surgical career, and raised himself in a few years—and in spite of intense opposition at home and at a distance—to a position in the surgical world which was unique. Like other great men, he made mistakes, and possessed himself of faiths which had to be abandoned, but the facts remain that he was the first surgeon who attempted to save the life of a human being dying from the internal hæmorrhage of ectopic pregnancy, and he was the first to open the abdomen successfully for the deliberate removal of stones from the gall-bladder. The operative treatment of diseased Fallopian tubes, and of ovaries, for abscess, were extensions of pelvic surgery entirely his own; he was the first to draw distinctions between ovarian and parovarian tumours; he was one of the early pioneers of kidney surgery, and amongst the first to perform laparotomy for acute and chronic peritonitis, and for peritoneal hydatids; he was the first advocate of abdominal section and drainage for suppurating extraperitoneal hæmatoceles. His ingenious method of performing perineorrhaphy, and finally his persistent advocacy of the claims of exploratory operations, establish a record and demand a recognition such as few men have been privileged to merit.

Tait's first operation for gall-stones was successfully performed on a woman, a patient of Dr. Collis of Bridgnorth, in August, 1879, and it is interesting to note that it was carried out by him with "complete antiseptic precautions."

The story of his early experiences in ectopic gestation is as interesting as it is historical, and may best be told in Tait's own words:—

In the summer of 1881 (he says) I was asked by Mr. Hallwright to see with him in consultation a patient who had arrived by train from London in a condition of serious illness, that illness having been diagnosed by Mr. Hallwright as probably a hæmorrhage into the peritoneal cavity from a ruptured tubal pregnancy. The patient was blanched and collapsed. The uterus was fixed by a doughy mass in the pelvis; there was a considerable amount of effusion in the peritoneum, but no distinct tumour could be felt above. I agreed with Mr. Hallwright as to the nature of the lesion. This gentleman made the bold suggestion that I should open the abdomen and remove the tube. The suggestion staggered me, and I am ashamed to have to say I did not receive it favourably. I saw the patient again in consultation with Mr. Hallwright and Dr. James Johnson, and again I declined to act upon Mr. Hallwright's request, and further hæmorrhage killed the patient. A post-mortem examination revealed the perfect accuracy of the diagnosis. I carefully injected the specimen, which was removed, and found that if I had tied the broad ligament and removed the ruptured tube I should have completely arrested the hæmorrhage, and I now believe that had I done this the patient's life would have been saved.

The man who put on permanent record such a story of a professional brother and himself was no ordinary person. It was not until Jan. 17th, 1883, more than two years after the incident above related, that his first operation was undertaken. The woman—a patient of Dr. Spackman of Wolverhampton—died immediately after the operation was finished. The reason of her dying Tait at once had the strength to recognise and the courage to confess. He says: "It was due to my own 'bungling.'" The partially extruded tubally attached placenta had obtained new attachments to neighbouring coils and intestines, the most cautious separation of which occasioned fast and copious bleeding at every

point. The lessons he learnt from this first case were priceless. He saw that placental attachments must be left severely alone, that nothing more was required than the removal of the bleeding tube and the clearing away of the escaped blood, and that rapidity of execution was an essential factor in securing operative success. His first successful operation was performed on March 3rd, 1883, on a patient of Dr. Page of Solihull, and during the next five years he operated 41 times with one death.

We can forget Tait's errors in the greatness of his achievements. His operation for the removal of the appendages for the treatment of bleeding uterine myoma has not fulfilled the faith he had in, nor justified the claims he made for, his discovery. Next to ectopic pregnancy it was the subject which most interested him, and the operation he originated for its treatment was the piece of his life's work of which he was most proud. Writing of this operation in 1889 he said:—

> The permanent and complete efficacy of this method of treatment has been established by evidence beyond all cavil; in fact, it stands unrivalled in the history of modern surgery; we have an absolute cure in our hands. I am satisfied the risk to life may be reduced to a vanishing point.
> Hysterectomy (he goes on) is a coarse and much more dangerous method of accomplishing the same ideal (arrest of menstruation), and it is an operation I detest.

Tait was wrong; for few surgeons, I imagine, follow this practice now, although some among us occasionally had—I certainly did—the satisfactory results claimed by him for the procedure. Hysterectomy is the treatment generally adopted to-day for all uterine myomata, whether bleeding or not. I question whether the last word has yet been said on the necessity for the treatment of this class of non-malignant uterine tumours by the major sacrifice of a very useful organ.

In the eyes of his contemporaries Tait's greatest error—indeed, it was looked upon as his besetting sin, which nothing could condone—was the attitude he took up with regard to early Listerian practice and teaching. Whilst accepting to the full the Pasteurian theories of fermentation and putrefaction, he denied that they applied alike to *living* as to dead tissues. He held the view—in common with other distinguished men of his day, and with a still greater number at the present time—that *living* tissues are themselves capable of dealing with the germ life of the ordinary atmosphere, and on the strength of this faith he was then removing ovarian tumours, and without the aid of the Listerian methods of his time, with a mortality of between 3 and 4 per cent. His wounds were dressed with dry absorbent cotton, very much as used everywhere to-day, as Gamgee had employed for years previously, and as I have done since I was Gamgee's house surgeon in 1877.

I should like to say a few words here on what is now euphuistically spoken of as "surgical technique," formerly as wound treatment, particularly with regard to its ritual and its expense. The great principles upon which operative success depends are to-day exactly the same as when Lister first preached the gospel of antisepsis. Absolute cleanliness is the essence of the measures by which he carried those principles into practice. Many as have been the modifications of our operative methods since the early "seventies" of last century, it is upon the completeness with which this central idea has been secured that the success of each method depends. It needs but little ceremonial to make and keep us clean either in body or in spirit. Simplicity, sincerity, and steadfastness will suffice in both. The modern tendency to make of a surgical operation a kind of ritualistic function is greatly to be deplored. Harm often results therefrom I am sure. We can be careful without being fastidious, and efficient without becoming hysterical, and elaboration of ceremonial will not condone a want of manipulative dexterity or absence of readiness in emergency.

Soap and scalding water are our safest and simplest antiseptics, and if we add spirit to the list, the scruples of the most sensitive of surgeons should be satisfied. Linen straight from the laundry costs but little, and is all-sufficient. Gauze can be purchased for less than a penny a yard, silk for 3*d.* a skein, clean cotton-wool for less than a shilling a pound, and bandages for a few coppers each. All these are inexpensive, but all are efficient, and all are simple. The increasing cost of surgical work is chiefly due to the caprices of fashion and the demands of ritual, and partly also to the fancies of architects and the seductive enterprise of surgical instrument-makers. Good surgical work can be done in a clean and well-lighted, airy bedroom if the surgeon will only take the necessary trouble. Many of the improvements of a modern hospital are as much for the convenience of the working staff as for the welfare of the patients.

EXPLORATORY OPERATION.

Exploratory operation as a means of accurate and early diagnosis had been advocated long prior to the days of Tait, but he it was who especially extended the application of this great surgical principle to diseases within the abdominal and pelvic cavities.

In 1876 "the great impediment to the adoption of gastrotomy (abdominal section) is the uncertainty of diagnosis," wrote Parry of Philadelphia, and Tait commenting on this statement in 1889, said:

> Mark the importance of this sentence, for this sentence it is, reiterated by almost every writer on abdominal surgery up to 1878, and continued as a tendency by a great many still, which has stood in the way of our success. I have long since thrown it to the winds, and when I find my patient *in danger of death* from conditions within the abdomen which do not seem to be clearly of a malignant nature, but a correct diagnosis of which is impossible, I open the abdomen, and at once make the diagnosis certain, and a successful treatment possible. I do the same thing also when the conditions are such that the patient's life is miserable by reason of suffering which cannot be relieved, or, at least, has not been by all other measures.

The result has been an enormous advance in abdominal surgery, obtained only after a severe struggle with the authority of the elders, who asserted that the abdomen was a region into which the writs of ordinary surgical laws should not run. He further adds, and with characteristic brusqueness:—

> Absolute accuracy of diagnosis in the abdomen is *very far* from being possible: only the ignorant assert that it is, and only fools wait for it.

The wider acceptance of this great principle of exploration has done more to further the advance of surgical knowledge than anything since the introduction of antiseptic surgery. The general body of the profession takes somewhat exaggerated views of its risks and its disappointments, confiding more in new discoveries of a non-operative kind—imaginary or real, orthodox or unorthodox, scientific or empiric—frequently confusing exploration with experiment, and not altogether without reason. The two measures are essentially different; one is a matter of diagnosis, the other of treatment; one is often a sacred duty, the other is sometimes a surgical sin; and whilst I plead for a more generous consideration of the advantages of the former, I urge a strengthened watchfulness of resistance to the latter. To uncover a kidney to determine the presence or absence of a stone therein is an exploration; to stitch the dropping organ to the ribs because a head aches is an experiment. Experimental operations to-day are greatly on the increase, and are not to be justified merely for the reason that if something is known to be the matter, something must be done; or that they can be carried out with little danger to life; or that the malady for the relief of which the experiment is made is positively fatal unless something can be found for its relief. Gentlemen, there are many things in the world we cannot change, and to attempt to alter them is an act of folly. Water will continue to run downhill, however desirable in human interests it might be at times that it should flow in the opposite direction. We cannot attain the unattainable in surgery more than in other things. We must accept the inevitable, however sadly, or however great the cost.

I do not say that experiment shall not enter into the question of operations at all; it would be illogical were I to go so far, for the reason that much of the work of the daily practice of every medical man is essentially of the nature of experiment, and it is often only through experiment that later efforts come to be made in the right direction.

In a mere exploratory incision for the purpose of ascertaining whether an abdominal tumour is malignant or not no special difficulty is experienced or risk incurred, an incision large enough to admit a finger being all that is necessary. This sort of exploratory operation is practically nothing more than a tapping, but is of the greatest possible value in many circumstances. The whole abdominal cavity cannot, of course, be explored through one such incision, and in practice it is rarely necessary that it should be; the surgeon knows beforehand, from objective symptoms, the quarter in which

any malady is situate, and there his exploratory opening will be made. It is surprising what can be learnt by a trained and educated finger passed through the abdominal wall at certain sites.

If a complete abdominal exploration has to be made through a single incision the opening must be made sufficiently large to admit the whole hand, and is, of course, more serious, but even then the death-roll is a negligible quantity, providing the exploration is carefully and rapidly made and nothing beyond this is done. This larger incision is often necessary, to determine whether a particular tumour can or cannot be removed. In this exploratory handling of malignant tumours it is of vast importance that the capsule of the tumour be not injured, owing to the great vascularity of the tissue contained within, and the difficulty experienced in checking such bleeding. Did time allow I could relate many instances where the neglect of this elementary rule has led to disaster of the most distressing character in what ought to have been simple and safe procedures.

KIDNEY DISEASES AMENABLE TO SURGICAL TREATMENT.

Great as has been the advance in our means and methods of investigating the nature of surgical kidney diseases during the last few years, certainty of diagnosis is still far from general, and exploration as the final method of determining the exact nature of a renal malady is still sometimes necessary, and may always be so in such affections as hypernephroma, adenoma, papilloma of the renal pelvis, or congenital cystic disease.

In my student days kidney disorders were dealt with solely by the physicians, whose time and interests were chiefly concerned with Bright's disease in one or other of its forms. I remember quite well how my professor of medicine, at the end of a series of lectures on Bright's disease, disposed of all the other kidney troubles within a couple of hours. Since those easier days "surgical diseases of the kidney" have whole volumes to themselves, and their curability or relief is more in our hands than was formerly thought to be possible.

The great bulk of these diseases are to be diagnosed by simple methods, by urinary investigation, by physical examination, by accurate history, and finally by clinical common sense. It is only in exceptional cases that the cystoscope, the radiograph, and the ureteral catheter are wanted, and sometimes they may be wanted badly. An otherwise healthy man subject to acute, paroxysmal, unilateral lumbar pain, shooting forward to the groin and testicle, aggravated by exertion, with concurrent or consecutive hæmaturia and oxaluria, ought to have a renal calculus; and whether your cystoscope, or ureteral catheter, or radiograph tell you so or not, should his attacks continue to recur an exploratory operation of the painful kidney ought to be made.

There is a feeling in the minds of most people that instruments of precision, such as the Roentgen ray apparatus, the camera, the 'graphs and 'scopes of various kinds cannot possibly err, that their evidence is absolutely unimpeachable. This may be true of the instruments themselves, but whenever and wherever human judgment or observation has to come in, there also comes in liability to error. Let me illustrate my meaning by a few personal experiences of radiography in the diagnosis of urinary stone.

A few weeks ago I operated on a patient from whose right kidney a stone had been removed some 18 months previously by another surgeon, a urine-leaking sinus resulting. An expert radiographer had recently declared the presence of another stone to which the persisting sinus was naturally attributed. I cut into this kidney for the purpose of removing this stone, which I failed to find. I then removed the kidney with its pelvis and the upper part of the ureter entire. There was no stone anywhere.

More than two years ago I saw a strong, healthy man with classical symptoms of renal calculus. To confirm the diagnosis the radiographer was appealed to. He found no stone in the kidney, but reported the presence of two small calculi in the ureter. Operation was deferred in the hope that these small stones might be passed naturally. After waiting a year I determined to explore both the kidney and the ureter and had a radiograph taken the day before the operation to be sure the ureteral stones had not in the meantime shifted their position. The radiographer then reported that there were two stones in the kidney, each of the size of a horse bean and alike in shape, and that the supposed ureteral calculi were probably phleboliths. I cut on to the kidney from the loin and readily removed one stone, but the second was nowhere to be found. I felt confidence in the thoroughness of my kidney exploration, gave the opinion that the two shadows shown on the plate were shadows of the same object, and closed the wound. The man recovered easily after the operation and has had absolutely no symptoms since.

A distinguished surgeon related to me an exactly similar experience which befell him a year or two ago—where he was led by the dogmatism of the radiographer to reopen a closed wound for a second stone which was not there, and nearly lost his patient in consequence.

A colleague had recently a consecutive series of five cases of ureteral calculus where radiographic evidence was negative; operation proved the presence of stone in every instance.

It is well known that pure uric acid stones may be invisible to radiography, and overlooked renal and ureteral calculi might be assumed to be of this nature, but recent researches of great value carried out in the Liverpool Medical School show that every one of a consecutive series of 24 stones removed by operation and submitted to careful chemical analysis were chiefly composed of oxalates and phosphates of lime. Lime-containing calculi give radiographic shadows, and most, if not all, of the Liverpool cases had been accurately diagnosed and localised before operation.

I have no desire to minimise the value of radiography in the diagnosis of urinary calculus disease; indeed, I recognise it as of the greatest value and feel more at ease in a contemplated nephrolithotomy when I am supported by the confirmatory assurance of the shadow in a radiograph. Its affirmative value is of the high st, but too much importance must not be attached to its negative opinion.

Ureteral catheterisation has its limitations and its fallacies. It is of the greatest use in the detection of albumin, tube casts, and micro-organisms in the urine, from one kidney alone. Obstruction in the ureter cannot be recognised with any degree of certainty by catheterisation; many cases are already recorded where operation has shown that such catheter findings have not existed. Stones in the ureter (as in the urethra) have often been passed over by the catheter without recognition.

A very fair idea of the size and quality of a kidney and of its pelvis can be obtained by a finger inserted through a small exploratory opening in the linea semilunaris; but if a more thorough examination is needed a lumbar incision should be made. A vertical incision from the tip of the last rib downwards gives the best access, but if the ureter is to be followed into the pelvis the oblique downward and forward incision is better. For exploration a kidney should be thoroughly freed from its surrounding tissue and brought on to the loin whenever possible. Stones, tumours, cysts, abscesses, tubercle can be recognised without splitting the kidney by manipulation between a finger in the hilum and a thumb outside.

At the beginning of my professional life stone in the bladder was quite common in this district. Fifteen years later bladder stones were fewer, but kidney stones had more than taken their place; to-day bladder stones are fewer still, kidney stones are not so plentiful, and ureter stones are increasingly in evidence. It is not easy altogether to say why.

APPENDICITIS.

It needs courage nowadays to say anything at a meeting of medical men on the subject of appendicitis, particularly so in the middle of a hot July day. So much has been said and written, and presumably so much has been learned, that nothing now remains to talk about. And yet, strange though it may seem, there are schools of opinion divided on almost every point of the subject on which it is possible for human minds to disagree. The more I see of the disease the more satisfied I am that it is primarily a mechanical affection; that obstruction is an essential factor in its genesis, the consequence of such obstruction being determined and controlled by germ activities on the one hand, and tissue proclivities on the other; that so long as no obstruction exists in the channel of the organ or in its opening into the cæcum the omnipotent germs of the intestinal canal are powerless for evil.

The appendix is part and parcel of the large intestine, fulfilling the same function, receiving the same contents,

altering them in the same manner, subject to the same disturbances and disorders, differing only in the mechanical consequences of its peculiar anatomical construction. The earlier pain of appendicitis is due to tension within the cavity of the organ; the later to the inflammatory involvement of peritoneum. I have seen acute appendicitis in the first year of life; I have seen a first attack come on at 84. The diagnosis of both acute and chronic appendicitis, although often a simple matter, is not always possible without the aid of exploratory incision. It would be better for the public and ourselves if this fact were more constantly kept in mind. It might tend to clear away many difficulties and much misapprehension which arise from time to time between our patients and ourselves where operative measures have to be discussed and operative results explained. Appendicitis is still occasionally wrongly diagnosed, but whereas formerly the disease was overlooked, to-day it is recognised where it does not exist, and when we remember its frequency of occurrence and its gravity, it is not surprising that it is "appendicitis" which usually comes first to mind in an acute abdominal outbreak, occurring unexpectedly during ordinary health.

As a rule appendicitis declares its own presence if we will but listen carefully to the story it has to tell us, but we must listen with an open mind, for it is our preconceived ideas which lead us into error in most of our wrong judgments in all matters. The most reliable and most consistent of its early signs is local tenderness, always to be elicited if carefully examined for in the groin, the loin, the right side of the abdomen, or the rectum. This tenderness signal symptom must be sought for early; it becomes masked and modified by extra-appendical inflammatory extensions. The presence of a localised, well-defined swelling means suppuration either within or outside the organ, and the sooner such swellings are explored the safer for the patient, provided too much is not done at the time. Such localised swellings may disappear slowly by pus absorption and tissue resolution, or more quickly by pus finding its way into an adjacent coil of bowel, usually the cæcum. I need scarcely say that pus appears in the stools only when an abscess has opened directly into the rectum or sigmoid flexure. Localised swelling is absent altogether only in the fulminating general peritonitic type, which is usually fatal whatever may be done for it. If every case of appendicitis was recognised and operated on within 12 hours of inception it would almost cease to be a mortal disorder, and if during the next 12 hours even the general mortality would be lower than it is. After 24 hours consideration has to be given to several matters before one can determine in any given case what is the safest step to be immediately taken, but on one point I am quite satisfied—that any interruption in the forward progress of an improving case calls for immediate operation. Whether it is safer to open the belly before opening the bowels in acute appendicitis or *vice versâ* I cannot discuss to-day. I have tried both procedures, and give my verdict unhesitatingly in favour of the latter. On the wisdom of the interval operation we are doubtless all agreed.

According to the Registrar-General's returns 2,276 persons died from appendicitis during the year 1909 in England and Wales, in the proportion of four males to three females. In the two larger Birmingham hospitals last year 432 operations for appendicitis were performed, and with a mortality of 8 per cent. in the acute cases only. Assuming the disease to be equally prevalent through the whole community—and there is no reason why it should not be—there must be nearly 40,000 cases annually in the United Kingdom, and yet at the time of the last annual meeting of the Association here appendicitis was an unrecorded malady in our hospital statistics, and did not appear in the Registrar-General's returns.

SURGERY OF THE STOMACH.

Abdominal operations have taught us many strange things since the Association was last here concerning the workings of our internal machinery, but none more striking nor more valuable, in my opinion, than the lessons to be learnt from the phenomena attending a successful gastro-enterostomy for pyloric stenosis. Here, prior to operation, we have faulty digestive processes of every conceivable kind flagrantly evident—changes in the acid content, in the peptic factor, in the motor mechanism; with flesh loss, weakening of body and of mind. Every attempt to change this state of things by drugs and diet has failed during a long period of trial. A free opening is now made between the stomach cavity and the gut beyond the site of obstruction—nothing more—no drugs are given, no artificial ferments supplied, no changes in the foodstuffs poured in from above, no electricity, no hypothetical science of any kind, and what do we see? In most cases, at once a remarkable change; every sign of faulty digestion begins to disappear, and in a short time the whole complicated and elaborate process is carried on in a normal manner. It looks, therefore, as if a chief factor in faulty digestion may be undue retention of food in the cavity of the stomach, and that unsuitability of material put into the gastric beaker or abnormal quantities and qualities of the digestive juices added thereto by the secreting glands may be altogether of secondary importance.

I know of no more striking example of surgical advance than is seen in the modern operative treatment of gastric disease, and when we remember how small is the ordinary death-rate of stomach affections this development becomes the more remarkable and can only be explained by an increasing confidence of the profession and the public in surgical operative procedure. Of all the organs of the body the stomach is most subject to disturbance of one kind or another. Dyspepsia figures largely wherever medicine may be practised. Until quite recent times faulty digestions have been dealt with chiefly as purely functional affections. Organic lesions were looked upon as exceptional—the acute ulcer of young women, the atony of middle life, the cancer of the aged, with an occasional pyloric stricture, covered the whole ground of organic stomach disease. To-day the fact is established beyond question that all, or nearly all, chronic indigestion is due to organic gastric or duodenal disease. Although stomach surgery was being performed more than 20 years ago, it is only within the last few years it has made its real advances and established itself on a firm and permanent footing. I sometimes think it is going along too fast, for it is now quite an ordinary thing for a hospital out-patient to reply in answer to your inquiry of "Well, what is the matter with you?"—"I have got indigestion, and want to be operated on"; just as formerly he would have said, "I have got the wind and want something for it."

Accurate diagnosis of stomach disease is not always possible, despite the splendid work already done by the physician, the physiologist, the pathologist, the bio-chemist, and the radiographer. Appeal must often be made to exploratory operation, for it is only by sight and direct touch that precision of diagnosis in stomach diseases can be secured, and it is not until certainty in this direction has been established that the necessary treatment can be determined. Exploration should be the first step in every stomach operation, and one would think it unnecessary to add that unless something definite is found nothing definite should be done; the operator's hand must be restrained unless it is manifestly clear that the structural condition before him demands mechanical rearrangement or removal. There should be no mistakes in the way of speculative operations, even although the opportunity for experiment is before you; the temptation to do something must be resisted.

A considerable experience in stomach surgery, begun more than 20 years ago and continued on up-to-date lines to the present time, leads me to the following conclusions:—That precision in the diagnosis of many stomach diseases can be secured only by exploratory incision, and that earlier resort to this procedure in many cases is very desirable. That where pyloric obstruction is present, as evidenced by periodic vomiting, treatment by posterior gastrostomy is eminently and uniformly satisfactory. Pain in such cases may be altogether absent. That where vomiting is absent or only occasional, and pain is the symptom for which a patient seeks relief, gastro-enterostomy has its failures. That acute ulcers of the stomach, except when perforating, do not demand surgical treatment; chronic ulcers, on the other hand, do; but what that treatment is to be I am uncertain. Some should be excised, some are cured by gastro-enterostomy, some should be infolded, and possibly some should be left alone by the surgeon. That operations for gastric carcinoma are at the present time unsatisfactory, probably owing to their non-early recognition. That dilated stomachs, in the absence of associated lesions such as pyloric narrowing or ulceration, may be left unoperated on. That gastric hæmorrhages are not to be dealt with satisfactorily by surgical operation. They do better in the hands

of the physician. Duodenal hæmorrhages, too, are not readily amenable to surgical treatment. Gastro-enterostomy does not meet their urgent indications, although it may contribute to the healing of the ulcers in which the bleeding originates. That chronic duodenal ulcer is a pathological fact; it is no mere surgical apparition as is sometimes suggested. Its frequency in adult males is remarkable; its diagnosis prior to exploration is highly probable, but by no means sure; its recognition at the time of operation is certain, and its relief by operation is most satisfactory, I cannot say invariably successful. That cancer of the stomach here in Birmingham does not appear so often as a sequel of chronic ulceration as it is said to do in many other places. The majority of patients with cancer of the stomach give no account whatever of long-standing or of past indigestions. It appears usually as a primary indigestion in the middle-aged or elderly, and in all such cases I agree with a recent writer in the *British Medical Journal* that by the failure of medical treatment quickly to relieve such indigestion a suspicion of cancer should be aroused and an exploratory operation at once performed.

INTRACRANIAL AND INTRATHORACIC SURGERY.

Exploration has been of the greatest value in the treatment of intracranial conditions, and has brought into the range of curability many otherwise fatal affections. The purely experimental work of the scientific physiologists has taught us much in connexion with intracranial disorder, but exploratory operation has amended and amplified the knowledge thus acquired, and has made it of practical value in the treatment of disease. Intrathoracic maladies do not lend themselves readily to operative exploration, owing, of course, to the serious disturbance of the respiratory dynamics attending open incisions into the thoracic cavity, but even here its use is considerable.

My own interest in exploratory operation would lead me to dwell longer on this theme, but I must refrain, and devote the time that remains to the consideration of other matters.

INGUINAL COLOSTOMY.

Remarkable are the lessons to be learnt from a consideration of the modern operation of inguinal colostomy in two stages. Stage number one, as you are aware, consists in bringing out of the abdomen through a small incision in its walls a complete coil of the sigmoid flexure, some 6 or 8 inches of bowel, and of fixing the coil outside by means of a glass rod pushed through its mesentery, or in some other manner. A covering dressing of gauze or cotton is fixed over the extruded gut and the patient returned to bed. A mechanical obstruction of the bowels has thus been artificially produced of the most complete kind—I say obstruction as distinct from strangulation. Not the slightest pain follows the procedure; the patient lies perfectly comfortable for many days without a symptom of abdominal disturbance of any kind; nothing is passed per anum; he takes a simple liquid diet and sleeps soundly; he has neither pain nor vomiting; his tongue does not fur and his head does not ache; his pulse-rate is normal and his temperature does not move; his belly is neither distended, tender, nor rigid, and yet during the whole time the obstruction of the bowel continues. To me the object-lesson is of extraordinary interest, and I am constrained to ask myself whether some of the views commonly held and acted upon in connexion with "stoppage of the bowels" may not possibly need revision. I am often called in consultation to see cases of supposed primary "intestinal obstruction," where the symptoms of sudden severe pain, vomiting, and constipation are attributed solely to the fact that the bowels have not been moved for 24 hours or so. Simple arrest in the onward movement of bowel contents clearly does not give rise to these symptoms; some other factor must always be present to produce them, and upon this factor does the obstruction depend. The more I see of acute abdominal disease, the less often do I meet with intestinal obstruction as a primary affection; it is secondary or symptomatic in the large majority of cases. Early in my surgical career I was frequently seeing cases of acute intestinal obstruction, and opened the abdomen for their relief as a routine procedure, invariably finding, as I believed, loops and kinks and twists and indeterminate bands, when something else more real was not in evidence. I published a paper in the *British Medical Journal* at that time, with an account of some 20 operations. Although of late years I have seen much more acute abdominal illness than I did then, I am not meeting one-fourth as many cases of intestinal obstruction calling for immediate treatment by surgical operation. Whether it is that the malady has become less frequent or that the bowels have acquired the knack of unravelling themselves in this age of higher education, or that I am now failing to recognise the malady, or that greater experience has modified my earlier predilections, I leave you to think.

The second stage of this same operation (inguinal colostomy) furnishes further food for reflection on some of the problems of intestinal function and disorder. Four or five days after the first stage has been carried out the coil of gut is exposed—it is lymph-covered and tightly adherent to everything about it; to a certain degree it is inflamed, but it is absolutely insensitive to pain. It may be cut across with scissors, it may be pinched or crushed, it may be slowly burned completely away with the actual cautery without the conscious patient showing the least discomfort at what is being done. The insensitive bowel wall is not dead; it bleeds freely when cut—indeed, its vascularity is excessive, and its sensibility, therefore, if it had any, should be exalted. This absolute insensibility, pervading as it were all the bowel tissues—mucous, submucous, muscular, peritoneal, nervous, vascular, and lymphatic—is hard to reconcile with the common clinical experiences of belly-aches met with daily by every medical practitioner.

INGUINAL CÆCOSTOMY.

It is well known that lengths of the digestive tract, varying from inches to several feet, may be removed without permanently affecting the general health. Whatever may be our final conclusions as to the advantages or the necessity in chronic constipation and in tuberculous joint diseases for doing away altogether with the function of all but the terminal few inches of the large intestine, the fact will remain that such a physiological deprivation is compatible with long and healthful life. More than twenty years ago there came into my hands a woman with a rare form of colon disease, probably inflammatory in its nature, certainly not malignant. She had suffered from bowel symptoms, pain, looseness, irregularity, and slimy stools for the previous 11 years, dating her trouble back to a confinement at that time. She was a confirmed invalid when I first saw her. The rectum was almost occluded; the stools dribbled from her in liquid form, and her distress was very great. On opening the abdomen with the intention of doing an inguinal colotomy I found the whole length of the large intestine from cæcum to anus was indurated, puckered, and contracted to the thickness of a finger, looped like a fleshy rope across the abdominal cavity. Its lumen was narrowed throughout its whole length; it had become practically nothing more than a long fistulous track, with one end at the ileo-cæcal valve, and the other in the perineum. The small intestine was normal in appearance but distended. There was nothing to be done obviously but to make an artificial and permanent opening in the cæcum as near the valve as possible. Cæcostomy is, as a rule, one of the most disappointing and distressing of all operations for the relief of intestinal obstruction. The constant escape of liquid contents from the small intestine directly through on to the skin gives rise to a widespread area of cutaneous irritation and rawness, for the relief of which local treatment is of little avail. The outlook, therefore, for this poor woman was gloomy. She began, however, to improve in health at once after the operation. Little by little she learnt to manage her disablement with greater and greater comfort to herself, and at the end of a year her general health was completely restored. She has lived an active life ever since, managing her domestic affairs, bringing up a large family, and taking an active part in her husband's business. For more than 20 years she has continued in good health, although not a particle of her foodstuff has passed into her large intestine.

RADICAL CURE OF HERNIA.

Operation for the radical cure of hernia is a practical achievement of recent years. The only radical feature in the operations of our forefathers is that they are all radically bad. In 1890 no such operation appeared in the General or Queen's Hospital statistics; last year 476 are recorded. A few hernias were "radically cured" in my student days by the

puzzling operations of Wood and Wurtzel, but the hernias invariably recurred in those patients who were fortunate enough to survive the operations.

There is no one operation practised for each of the several kinds of hernia. Every surgeon has his own methods, and thinks them better than anybody else's, and it is quite possible they may be, but certain definite principles are now established, and so long as they are acted upon, it matters little by what means, results will be almost uniformly good. Recurrence liability varies under many circumstances—age, variety of hernia, fatness, &c.—but, including favourable and unfavourable cases alike, it should be less than 5 per cent. In children and young adults there should be none. The mortality-rate, too, varies in groups of cases, but should aggregate less than ½ per cent. Hernias of all sizes, at all ages, and in all situations, can be satisfactorily and comparatively safely dealt with. The most important step of the operation has to do with the sac of the hernia. The neck of the sac should not be ligatured, but the peritoneum beyond the neck, and when this has been done and cut across below the ligature it matters little whether the sac is removed or not. The closure of rings and canals is said to be a matter of secondary importance; in my opinion it should always be done, except in the inguinal hernias of very young children, and well done too. It is interesting to note that modern operations show the sacs of most hernias to be congenital and not acquired, an anatomical fact observed and insisted on by the anatomist Roser more than 70 years ago, and denied by almost everybody else up to quite recent times. The golden rule in surgery applies particularly to radical cure operations: Know what you want to do; see what you are doing; and do it simply.

PROSTATECTOMY.

Amongst the surgical advances of this present century the treatment of enlarged prostate by enucleation stands conspicuously prominent, and without discussing for a moment the question as to whom belongs the credit of first removing this organ by operation, the credit for having established the faith of the profession in the feasibility of the procedure is undoubtedly Freyer's, the great merit of whose work is in no way affected by small details as to the exact nature of the parts removed, or in the precise method by which their removal is effected. The term "prostatic hypertrophy" is a misnomer, the enlargement being due to the adventitious presence within the substance of the prostate of distinct neoplastic structures, adenomatous in their nature, developed doubtless from the normal gland tissue, but as distinct from simple hypertrophy as the common adenoma of the female breast is from general mammary overgrowth. The reason for the development of these adenomatous masses we do not know; none of the many explanations offered quite fit the facts, but that they are of very common occurrence is certain. As visiting surgeon to the Birmingham Workhouse Infirmary I have access to an enormous mass of pathological material, which ought to be put to better purpose, and ought to be accessible to the students of our medical school. Some years ago I removed post mortem, and carefully examined, the prostates from a consecutive series of 30 men between the ages of 21 and 94, dying from various maladies. Three of the 30 were under 40 years of age, and all their prostates were normal; but of the remaining 27, 5 only were normal, 22 showing well-marked adenomatous growths. The detailed figures are interesting: Of 6 in the forties, 5 were enlarged; of 3 in the fifties, 2; of 8 in the sixties, 6; of 8 in the seventies, 7; 1 in the eighties and 1 in the nineties were both enlarged. Of normal prostates there were 1 in 6 in the forties; 1 in 3 in the fifties; 2 in 8 in the sixties; 1 in 8 in the seventies, and none above that age—that is to say, over 40 years of age less than 1 prostate in 5 was normal, and over 50 years less than 1 in 4.

A discovery such as this was not comforting to a man who was then far advanced in the forties, but all anxiety was quickly allayed by the results of investigation in another direction. At that time there were 1071 men over 50 years of age in the workhouse and its infirmary, at least 750 of whom we may take it had some amount of prostatic enlargement; four only were under treatment for prostatic troubles—a little more than ½ per cent. I quite realise that what is true of a body of men living simple, healthful lives under institutional discipline may not be true of men at liberty to live and to act as they choose, but it is clearly not necessary to advise every man whose prostate is enlarging to submit at once to a radical operation for its removal, not even when early symptoms have begun. I have seen several prostatics living healthy, active lives the whole of whose urine has been drawn by self-catheterisation for 20 years or more without trouble or inconvenience. Prostatic retention occurs sometimes where overgrowth is not present, the obstruction being caused by a true stenosis of the prostatic vesical inlet. The symptoms of this form of prostatic difficulty are like those of ordinary enlargement, but digital examination per rectum discloses a small prostate where a large one might have been expected.

I am performing regularly both suprapubic and perineal prostatectomy, and find that each has its merits, and that neither can claim to be the better for all cases. The suprapubic enucleation of a large soft adenomatous prostate from a man of moderate size is an ideal manipulative procedure—I know nothing more satisfactory in the whole field of operative work; but the enucleation of a slightly enlarged, tough, fixed organ from within the bladder of a bulky drayman is quite another business, and may be more easily and more satisfactorily accomplished by the perineal route. Each operation has its difficulties and its dangers, and in these matters there is little to choose between them. The suprapubic operative mortality is rather the higher in my hands, probably because the more serious cases have been dealt with by this method. The after-results of both operations are about the same. It is impossible to express in figures the functional results of surgical procedures, and one is constrained, therefore, to state them in general terms. Usually the results of prostatectomy are excellent; in the majority functional restoration is complete, and the patient is eminently satisfied; in a fair number, however, marked improvement is all that can be claimed, whilst in a few disappointment follows. Impotence probably always results, but the sexual function is not always abolished. Prostatectomy for carcinoma and tubercle has been disappointing in my hands.

THE GROWTH OF MEDICAL LITERATURE.

One of the trials of a conscientious doctor's life is the flood of journals and new books which constantly overwhelms him. Every one feels the desire to read regularly at least one of the two leading weekly medical journals of his own country—and there ought to be no difficulty in his doing so; but when we find that our own *Journal*, with its Supplement and Epitome, contained last year more than 4750 pages (exclusive of advertisements, of course), more than 13 reading pages for every day in the year, one sees how difficult it is; and when the second weekly is to be read, when the quarterlies, when the new books, when the research, and when the reflection, I do not know. No wonder there are doctors who make no attempt to keep abreast of the times by reading current literature, but are content to treat their patients by methods learnt from their early teachers, and proved to be the best by their own experience, relying on help from a professional brother in exceptional circumstances.

During the last century the memoirs and original works in medicine and the allied sciences numbered at least half a million, and it is not therefore surprising that the great Velpeau said towards the end of his busy days that "the greater part of his life had been taken up in unlearning what was untrue." The man who proclaims a new discovery in a method of treatment or a means of more certain diagnosis incurs a great moral obligation, and the journal which distributes the information to the profession and to the public a greater. It would be better for all of us, doctors and patients alike, if every new discovery could be investigated and approved by an official and competent body of men especially appointed for the purpose before it was let loose in a world clamorous to do something or to have something done whenever anything is the matter, and, moreover, having greatest faith in the latest fashion. Another function such a body could usefully discharge would be that of selecting, or of compiling if necessary, a text-book of practical use for students and practitioners for each of the different subjects that medicine and surgery embrace. These standardised text-books should be selected for, or revised in, a term of years, and should not be encyclopædic in their nature, and the examining bodies should adopt them as their standard of knowledge in all qualifying examinations.

HOSPITAL TREATMENT AND THE INSURANCE BILL.

The continuous increase in the number of operations performed by surgeons is a matter of common knowledge, but unless one's special attention has been directed to the question one cannot have any idea how great this is, or how from year to year it grows larger and larger. In 1872—the year in which my medical studies began—316 operations were performed in the two general hospitals in Birmingham. Eighteen years later, in 1890—the date of the last annual visit of the Association here—this number had almost trebled, the exact figures being 925; while last year this trebled figure had nearly quintupled again, the number then being 4472. The public operative work at these two hospitals has, therefore, multiplied more than fourteenfold, and that within the period of my own working days. It is interesting to note that the number of beds in the two hospitals has only slightly increased. Each surgeon is doing more operative work to-day than were the united staffs of both these hospitals little more than 30 years ago.

The above figures represent only a portion of the hospital operative work of the city, for in addition to the two general hospitals there are the Women's Hospital, the Children's, the Eye, the Ear and Throat, the Orthopædic, the Skin and Urinary, and the Homœopathic Hospital, and the Workhouse Infirmary, in each of which day by day operations are being performed. Adding their figures to those already quoted gives a total of 10,811 surgical operations performed during one year in the charities of a city containing less than 600,000 inhabitants. After making allowance for patients who come into these institutions from outside the city area, and applying these figures to the 45,000,000 inhabitants of this country, we shall find that not less than 600,000 operations were philanthropically performed last year in the United Kingdom. I desire to call the attention of the author of *The Doctor's Dilemma*, and of all others who appear to be unaware of it, to the fact that this enormous mass of work has been almost gratuitously done, and the bulk of it by men whose reputations are already made. 600,000 does not look much on paper in this age of millions, and may not strike the lay mind as it will the doctor's, but the figure represents a vast expenditure of energy and effort, of strain and anxiety, of time and of self-sacrifice on the part of the men by whose labour and skill this mass of work has been carried out, and the only public recognition of which are votes of thanks for past services, sandwiched in between those to the lady visitors and the chairmen for presiding, passed drearily but unanimously at the tail-ends of thinly attended and spiritless annual meetings of subscribers. Judging by present appearances, this remarkable increase of operations will still go on, and the demands made on the services of hospital surgeons will become greater than ever. How it will end is not difficult to see; the time must arrive when the bulk, if not all, of this operative work ceases to be dealt with by voluntary effort, and men will have to be paid to do the surgical work of the 35 millions of people in this country who at the present time pay practically nothing for the surgical attention they need, and must either provide for themselves or have provided for them.

This is not an occasion for discussing the Insurance Bill, but it may not be out of place for me to refer to an omission from that measure of the greatest importance to the 15 millions of the public who are to be affected by it. I refer to the absence from its clauses of any provision for the active surgical treatment which will be necessarily required by this great body of people. This absence of provision for the treatment of their surgical troubles may be of greater practical consequence, I think, than would have been the absence of provisions for their purely medical ailments; for when a person of this class needs the aid of a surgeon as a rule he needs it badly, and there are only limited sources from which such needs can be satisfied. The necessity for the institutional treatment of many surgical conditions in the working classes will always exist, and provision should be made by the working people themselves or by the State to meet this inevitable demand; for to leave such a matter to the capricious promptings and casual extravagances of voluntary and irresponsible effort is not sound statesmanship as I understand the term.

THE COST OF HOSPITALS.

A matter demanding serious attention is that of the increasing cost of modern hospitals. Their capital outlay on construction and equipment is becoming appalling, and their maintenance charges are correspondingly high. A general feeling exists, I am aware, that as our knowledge advances and our means of dealing with diseases grow greater, so must the cost go up. To some extent this may be true, but it does not cover the whole position. Much of this greater expenditure is due to the tendency seen on every side for public bodies to reckless extravagance. This craving for the lavish spending of other people's money has become a disease, and institutions will at some future time have to be erected for the treatment of persons so afflicted. There is absolutely no need for the spending of large sums of money on the construction of public hospitals; there is no necessity for the sick people in their wards to cost as much as they do. I claim to speak with some authority, if only for the reason that I have worked in charitably maintained hospitals, and in a rate-supported hospital, during the greater part of my life. The object for which all such institutions exist is identically the same—namely, the conversion of sick into sound humanity. The raw material taken into these institutions is alike, the treatment the same, the results identical, but the difference in cost is phenomenal. A charitable hospital now costs from £500 to £800 per bed for construction and equipment, and from 30*s.* to £2 a week per patient for maintenance. The Birmingham Poor-law Infirmary cost less than £90 per bed, and the patients in it 14*s.* 6*d.* per week to maintain. How are these striking differences to be explained? Certainly not by any difference in the quality or the quantity of the work turned out, which are the criteria by which the work of every hospital should be judged, nor by the greater internal comfort of one class of institution over the other. The fact of one being a teaching institution and the other not accounts for something doubtless, but the difference—easy to find—depends on other things than that, but this is not the place to discuss them. I merely wish to call attention to their existence, and to express my own opinion that the sooner all public hospitals become municipally or State supported the better for everybody in any way concerned with them—patients, doctors, and the public alike. Medical teaching and medical research might be better done in institutions altogether controlled by more responsible authority.

We cannot all be leaders in our art, but each can strive to be as the great masters of surgery were in the past. Sir William Bowman, your surgical orator in 1866, who received his general and medical education here, has eloquently said of his predecessors: They were anatomists, they were physiologists, they were pathologists, not by second-hand learning from the tongues and pens of other men, though this they did not despise, but by truth-loving interrogation of Nature herself in all her haunts of health and disease; admitting no veils of limitation to be drawn by fashion or caprice or selfish interest between provinces and things essentially akin, but taking in the whole scope of their art as one great and ample field of noble study and of beneficent activity—one by the unity of Man's body, to which it yields a voluntary and loving service; one by the identity of the methods of research by which the secrets of that body are to be disclosed; one by the common aim and intention of all treatment, internal or external, remedial or preventive; one, lastly, by the simplicity of the moral attitude which should stamp us all as members of one body in our relations towards one another, to individual patients, and to the community among which we labour.

PRESENTATION TO A MEDICAL PRACTITIONER.—Dr. Leslie H. Jones, who has for 28 years practised in Cheetham Hill and in Manchester, has recently determined to retire in consequence of advancing age. At a small representative meeting on July 7th, presided over by the Rev. R. Catterall, rector of Middleton, and held at Tunstead, Crumpsall, at the house of Mr. W. H. S. Craven, an inscribed silver cup, together with a cheque for £775, was presented to Dr. Jones by Mr. Frederick Taylor of Broughton Park. Dr. Jones expressed his thanks to his friends in a very feeling manner. It is extremely pleasant to be able to record such occurrences.

NOTES ON THE EXTRACTION OF CATARACT.[1]

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THE routine operation for the extraction of cataract has not yet been generally agreed upon, and adherents of one or other of the well-recognised methods still claim the superiority of their own choice above all others. The discussion of the subject is rendered difficult to some extent by the paucity of statistics as to ultimate results in long series of cases, and in this connexion it will probably be a disappointment to many that a record of 200 or 300 consecutive cases is not forthcoming even from the vast number operated on by Lieutenant-Colonel H. Smith, who states that he has extracted over 20,000. It is, however, well known that the difficulty of obtaining statistics in India is extremely great, owing to the impossibility of tracing old patients.

The operation for the extraction of the cataractous lens in its capsule as performed by Lieutenant-Colonel Smith has aroused such widespread interest, and the publication of his book will probably lead so many ophthalmic surgeons to try his operation, and so many patients to inquire about it, that it may not be out of place to review the various methods of operation now commonly practised, to attempt to appraise their individual merits or demerits, and finally, to hazard an opinion as to whether the older operations for the extraction of cataract have been found wanting.

It is the opinion of the writer that no single operation is equally suitable for all cases, but that various features, all of which may have an important bearing on the choice of operation, have to be considered. The possible complications and sequelæ of the various operations have to be kept in mind, together with the reasons for which the operation was undertaken; and last, but by no means least, the character of the cataract itself. It has long been recognised that success does not follow equally all operations for the extraction of cataract, however uniformly and skilfully they have been performed; and as the ultimate result of an extraction will depend upon the presence or absence of various important sequelæ, it will be probably more profitable to consider these first, and the various methods of operation later.

Complications following the Extraction of Cataract.

1. *Adhesions of the lens capsule to the extraction scar.*—Mr. Treacher Collins has shown that the irido-cyclitis, sympathetic ophthalmia, and glaucoma which may follow an operation for extraction are often due to the entanglement of the lens capsule in the wound or adhesion to the posterior surface of the cornea. The entangled capsule acts as a foreign body and produces the same inflammation that would follow the implantation of an eyelash or a fibre of cotton-wool. It may also cause inflammation by dragging on the ciliary processes, or glaucoma by dragging the iris forward and narrowing the anterior chamber.

2. *Capsular opacities.*—It is generally agreed that from 30 to 50 per cent. of all cataract operations require a subsequent needling for capsular opacity. Mr. Higgens, in his series of 130 consecutive cataract extractions, notes that he needled 57 out of the 130, some of them more than once, and this may be taken as a fair example of ordinary practice. As a rule the presence of opaque lens matter between the two layers of the lens capsule does not seem to cause any irritation, but a needling operation should be unnecessary in the ideal operation, and if it can be avoided so much the better. It is, of course, well known that the presence of any considerable amount of soft material left behind in the anterior chamber after extraction of the lens occasionally causes iritis, and a very dense fibrous opacity may result. Cases of glaucoma after needling are usually due to previous adhesions of the lens capsule in the wound. The operation of needling has also the disadvantage of breaking down the separation between the aqueous and vitreous. The latter becomes more fluid, and any subsequent operation on the eye is rendered much more hazardous.

3. *Loss of vitreous.*—Loss of vitreous during an operation for extraction, provided that the amount lost is not excessive and that septic infection is avoided, does not seem prejudicial to the ultimate visual results. It is also generally agreed that the effects, if any, are less pronounced when the vitreous is diseased or abnormally fluid than when it is sound.

In the appendix by Captain Lister to Lieutenant-Colonel Smith's book an account is given of a research into 90 cases where loss of vitreous occurred during the operation for extraction of the lens in its capsule. The average length of time which had elapsed since the operation was over three years. No detachment of the retina had occurred in any case, and a large majority of the cases had 6/6 vision or better. A very similar result was obtained last year as the result of a research into some cases under my care at Guy's Hospital in which vitreous had been lost. No untoward results were observed even though several years had elapsed since the operation had been performed. The vitreous, however, is a more stable and satisfactory medium than the aqueous, and if equal visual acuity can be obtained without loss of vitreous it is much more satisfactory. In this connexion it is of interest to note that vitreous was not lost in a single case of Mr. Higgens's sequence of 130.

4. *Prolapse of the iris.*—This occasionally occurs after extraction without iridectomy, most often in those cases in which the nucleus of the lens was small and there was considerable soft material, some of which was left behind the upper part of the iris. The swelling of soft matter due to absorption of the aqueous appears to be a considerable factor in the causation of prolapse. Mr. Higgens found it necessary to remove a prolapse in five cases out of 83 operations without iridectomy, and iridectomy at a later date was required in two more. He states, however, that he leaves small prolapses alone, and it is also the writer's experience that these, provided they do not cause too much eccentricity of the pupil, are best left untouched, and that they do not cause any subsequent inflammation. A large conjunctival flap made at the time of the corneal section is very useful in preventing subsequent prolapse of the iris, as the rapid healing of the conjunctiva prevents any gaping of the cornea and escape of aqueous.

Variations in the Structure of the Cataract.

As has been said above, all mature cataracts are not similar in structure, and it is a great advantage to be able to tell from the appearance of a cataract before operating if it is likely to have a large or a small nucleus, and if consequently there will be little or much cortical soft material. It is well known that amber-coloured cataracts, which in extreme cases are called "black" cataracts, are not really cataracts in the ordinary sense of the word, but are due to a general sclerosis of the lens with no differentiation between cortex and nucleus. They seldom become completely opaque, and never appear white in the pupil, but rather dark grey or brown, and on ophthalmoscopic examination show little definite opacity. As a result the vision never diminishes to bare perception and projection of light, though it may become too deficient for reading and writing. Experience shows that these lenses always shell out extremely easily from the capsule, even when apparently quite immature, and leave little or no soft material behind. The same characteristics may be noticed in those nuclear cataracts which appear whitish, opaque, and almost foamy in the centre, resembling in some degree ice containing small air-bubbles.

Mr. Higgens notes that cataracts with milky or pearly nuclei and striæ scattered plentifully in the cortex, much of which may remain transparent, come away easily, and though immature do not need iridectomy. On the other hand, cataracts which are entirely opaque and very white, though not necessarily hypermature, often consist of a very small nucleus and a large amount of soft material, and Mr. Higgens also notes that in all cases where there is a yellowish nucleus and a cloudy cortex without any definite striæ, that kind of opacity which always appears to be facing one whichever way the eye is looked into, which is ill-defined, and

[1] The writer has referred in this article to the following publications, which should be read by all who are interested in the subject:—The Treatment of Cataract, by Lieutenant-Colonel Henry Smith, I.M.S., Calcutta: Thacker, Spink and Co., 1910. Lieutenant Colonel Smith's Operations in Bombay, by P. P. Kilkelly, M.B., Major, I.M.S., Indian Medical Gazette, May, 1910. Notes on 130 Consecutive Extractions of Cataract without a Failure, by Charles Higgens, F.R.C.S., THE LANCET, April 13th, 1907. Capsular Complications after Cataract Extraction, by E. Treacher Collins, F.R.C.S., Royal London Ophthalmic Hospital Reports, vol. xvi., part iii.

surrounded by a more or less distinct red reflex, the cortex is always sticky and difficult to get away.

With the above considerations in mind it is easier to review the various operations for the extraction of cataract.

Operations for the Extraction of Cataract.

1. *Simple extraction without iridectomy.*—If this operation is successful it is far and away the best both from the point of view of appearance and of visual efficiency. The central mobile circular pupil matches that of the other eye, and after the lapse of a week or two it takes an expert to discover which eye has been operated on. It is of special advantage for those who have prominent eyes, and in whom the upper lid does not cover the upper part of the iris, and as a result an iridectomy would be very apparent. It is the operation to be performed where the extraction is undertaken for the sake of appearances, whether from a social point of view or from the economic necessity of a wage-earner to avoid the disability incurred by the presence of a unilateral cataract, or of an obvious iridectomy. It is also my experience that patients having had both eyes operated on, one with iridectomy and the other without, find that eye most useful which has the complete circular pupil even though the visual acuity of the two as tested by Snellen's types may be equal.

The absence of glare in bright lights and the better definition obtained by the smaller pupillary aperture make the eye more efficient for all purposes and under all conditions. It is extremely rare to get any involvement of the capsule in the wound after the operation, as the iris draws all tags of capsule back to the centre and away from the corneal section, and for the same reason loss of vitreous is less likely to occur than when iridectomy has been performed. A further advantage of the simple extraction is that it requires the minimum interference with the eye, and can be done with the fewest instruments.

Having learnt the technique of the operation from Mr. Higgens, the writer follows his methods as described in his paper. No speculum is required, and the necessary fixation can be obtained by passing a stitch through the conjunctiva below the cornea and getting an assistant to hold it down on the cheek. If the knife is properly sharp it may be passed through the anterior chamber from side to side without moving the eye; no forceps are required for fixation and the eye can be steadied on the edge of the knife while the section is being made. The lens is expressed by the two thumbs, one operating upon the lower part of the globe through the lid and the other making counter-pressure on the upper part of the globe. The iris usually returns at once, but if necessary can be replaced with a repositor. Should it show any tendency to prolapse an iridectomy can be done subsequently to the extraction instead of before. Thus the only instruments really required in many cases are a Graefe's knife and a capsule hook, and the latter *can* be dispensed with if the capsule is opened with the point of the knife as it passes through the anterior chamber, a manœuvre I first saw performed by Mr. Stanford Morton at the Royal London Ophthalmic Hospital.

The only disadvantages of this operation are, the comparative difficulty of removing soft material which may get up under the upper margin of the iris, the danger of prolapse and the subsequent formation of a web. But these sequelæ may be avoided by selecting for the operation only those cases of cataract mentioned above, which have very little soft material and a large nucleus.

2. *Extraction with iridectomy.*—The iridectomy may be performed either as a preliminary operation or at the same time as the extraction. The former course has the advantage of giving the operator some idea of the behaviour of his patient before he attempts the more serious task of removing the lens, but it has the disadvantage that the iridectomy wound cannot be subsequently anæsthetised with cocaine, and the corneal section at the second operation may be painful. It is more usual therefore to perform the iridectomy at the same time as the extraction.

The advantages of iridectomy are that the soft material is more easily evacuated than in the simple extraction without iridectomy, and that there is no danger of a subsequent prolapse of the iris.

The disadvantages are that prolapse of vitreous is more likely to occur during the operation, and that the lens capsule, unless carefully replaced, may become incarcerated in the wound. In order to obviate this complication Mr. Treacher Collins devised his method of removing the anterior lens capsule with forceps instead of tearing it with the sharp hook. He says:—

> As a result of his experience the writer thinks it best after a small iridectomy has been performed to introduce the capsule forceps closed, to a position opposite the centre of the lens, then to allow the blades to separate to an appropriate extent, and while separate, to depress them slightly backwards so that their teeth penetrate the capsule. At the forceps being again closed the capsule can often be seen to ruck up on the surface of the lens and a slight, lateral, side to side movement should then be made before withdrawing them from the eye. This lateral, side to side movement serves to detach the anterior capsule and to prevent the withdrawal of the lens in its capsule, which may occur if a pull outwards is at once made.

The advantage of this procedure is not only that no anterior capsule is left to become entangled in the wound, but also that the aqueous obtains free access to any soft material that may be left behind, and a web is much less frequent than in cases where the capsule has been merely lacerated.

Mr. Treacher Collins notes that of 200 cases operated on by him in this manner subsequent records of 145 were obtained, and that 51, or 25 per cent., obtained 6/6, or 6/6 partly, without needling. This percentage of normal vision with one operation is certainly much higher than that recorded by any other method of extraction, excluding Smith's operation. It must be remembered, however, that needling may be ultimately required, even though the anterior lens capsule has been removed, not by reason of the existence of an opaque web, but because the posterior capsule may, though transparent, become wrinkled and prevent the formation of a well-defined image. After an iridectomy the pupillary aperture is large, and though the upward iridectomy is hidden by the upper lid, there is no doubt that patients suffer considerably from glare in bright lights.

3. *Extraction of the lens in the capsule.*—The operation for the extraction of the cataractous lens in its capsule has in recent years received such powerful advocacy from Lieutenant-Colonel Smith of Jullundur, and he has made such important modifications in its technique that it now goes by his name, though of course it has been frequently performed previously, both intentionally and unintentionally. Space will not permit here of giving a detailed description of the operation, but everyone who is interested in ophthalmic surgery should read his book, which is amply illustrated, and in which the *pros* and *cons* of the various operations for cataract are dealt with at great length.

Briefly it may be stated that in Smith's operation, after an iridectomy, the lens is expressed bodily in its capsule. The rupture of the suspensory ligament is accomplished by pressure with a blunt hook on the lower part of the cornea, the lens in its capsule dislocating first in the wound. Escape of vitreous from the gaping of the wound is obviated as far as possible by making the patient look up instead of down during the expression of the lens, the upper eyelid being lifted from the globe by a hook.

The advantages claimed for this operation are that it is quite as safe as the ordinary method of extraction, and that all subsequent operations for after-cataract and all capsular complications are avoided by the bodily removal of the lens capsule, and that escape of vitreous, which, it is generally agreed, is not infrequent, has no detrimental effect upon the subsequent vision.

The operation is recommended by Lieutenant-Colonel Smith both for mature and immature cataract, but in his advocacy for its adoption for immature cataract he dismisses all methods of artificially ripening the unripe lens with very brief consideration. In discussing trituration, or iridectomy with massage through the cornea, he says: "In my observation it has no influence on the immature cataract if the massage be done with a justifiable degree of pressure, that is pressure which will not dislocate the lens." With this statement the writer must entirely disagree. He is constantly triturating lenses in hospital practice and can assert that it is a matter of common experience that trituration of the lens through the cornea usually produces complete opacity of the lens in from three to four weeks. The writer has never dislocated the lens, and vitreous has never been lost at the subsequent extraction.

Trituration has also the advantage that the soft cortical material which is found at the extraction is never sticky and can be easily and completely expressed with the nucleus by gentle pressure on the cornea. Subsequent capsular opacities are infrequent. The only objection which has been

raised against trituration is that in unscrupulous hands it may lead to malpractice, as at the preliminary operation it is very easy to give a patient a cataract even if one was not present beforehand.

Immature cataracts can also be extracted with safety after removal of the anterior lens capsule with forceps by the method adopted by Mr. Treacher Collins. The aqueous has free access to the lens material left behind, and it is soon absorbed.

It wants to be thoroughly understood, therefore, by all those who are suffering from immature cataract that it is not necessary in these days to wait until a slowly growing cataract matures, whether an extraction of the capsule or an ordinary extraction is proposed. The sole criterion is the amount of vision and its importance to the patient. Directly vision has failed in both eyes so that the patient cannot read or write with comfort an extraction can be undertaken with safety.

In dealing with mature cataract also Lieutenant-Colonel Smith is an ardent advocate of his method as the best operation for senile cataract under all conditions, and he certainly has had a vast experience, and ought to speak with authority. Some Indian ophthalmic surgeons, however, who have had some opportunity of seeing more of his work than oculists at home, are not in agreement with him, notably Major Kilkelly of Bombay. At Major Kilkelly's invitation, Lieutenant-Colonel Smith performed 23 cataract operations at the Sir Cowasjee Jehangir Hospital, Bombay, in February, 1909. The results of these operations are detailed in the *Indian Medical Gazette* for May, 1910, and show that of the 23 cases incarceration of the iris occurred in 5, capsule tags in the wound in 4, vitreous opacity in 9, and iritis in 7. The visual results cannot compare with those obtained by Mr. Higgens or Mr. Treacher Collins, and Major Kilkelly himself says that he has performed some 600 extractions of the capsule, but that he has given up the operation as a routine procedure, being convinced that the best interests of the patient would not be considered if it were done, except in very exceptional cases. Major Kilkelly remarks with reference to Lieutenant-Colonel Smith's series that for the extraction of the lens in the capsule it seemed in some of the cases at least that the pressure necessary was excessive. Many lenses shelled out with the utmost ease; in others it was only the undoubted determination of the operator which brought about the desired result and caused a rupture of the capsule or escape of vitreous.

In the same number of the *Indian Medical Gazette* there is also an article on Smith's operation which reviews a number of publications dealing with the operation, and the opinions of the various writers appear to be divided, several being still unconvinced of the safety of the operation.

Ultimate Vision.

It may be of interest to survey the ultimate visual results as recorded in the papers which have been mentioned in this article. Out of 115 cases of Mr. Higgens's 130 who were not precluded from good vision by previous iritis, choroiditis, or other diseased conditions, 8 obtained 6/6; 33, 6/9; 39, 6/12; 24, 6/18; 7, 6/24; 3, 6/30; none, 6/60; and $1 < 6/60$.

Mr. Treacher Collins gives no particulars as to the vision of all his cases, but notes that 25 per cent. got 6/6 without needling.

As has been said above, Lieutenant-Colonel Smith gives no statistics as to vision in any series of his own cases, but Captain Lister gives the visual results of 61 cases of loss of vitreous: 6/3 in 4, 6/3·5 in 6, 6/4 in 4, 6/4·5 in 5, 6/5 in 4, 6/6 in 33, 6/8 in 2, 6/9 in 3. Captain Lister makes the note that in India, owing, he thinks, to the better light and clearer atmosphere, patients who come to him for examination usually read a line or two more of Snellen's test types than they do in England. He finds that very many British soldiers read 6/3·5 quite easily.

On the other hand, the visual results of the 23 cases operated on by Lieutenant-Colonel Smith for Major Kilkelly in Bombay show a very different result. One case only got 6/15; 2, 6/20; 7, 6/30; 3, 6/40; 4, 6/60; and 6 less than 6/60. It will be seen, therefore, that even though by Smith's operation some extremely good results may be obtained one may also get some very poor ones.

It appears, therefore, that the extraction of the lens in its capsule is not yet being universally adopted as a routine operation for the extraction of cataract, and that it has been tried and rejected by many skilful operators as being too risky, and in view of the other facts quoted here it cannot be said that the results of extraction of cataract performed in the old way are unsatisfactory. It is the writer's own experience that nearly every ophthalmic surgeon of his acquaintance to whom he has put the question has replied that if he were going to have an extraction performed on himself he would not select extraction in the capsule, but would be content with the ordinary extraction, with or without iridectomy.

It has been the writer's object in this article to show that in his opinion no single operation can be adopted for all cases as a matter of routine. In selected cases a simple extraction without iridectomy is undoubtedly the best. In cases where there is likely to be much soft material removal of the anterior lens capsule with forceps will give extraordinarily good results, and it is evident that in skilled hands the older methods of extraction of cataract are quite as efficient as, and probably safer than, extraction in the capsule. Time alone will show whether the latter operation will be generally adopted or whether its success depends alone on the peculiar dexterity of Lieutenant-Colonel Smith himself.

Queen Anne-street, W.

THE APPENDIX, ITS RELATION TO THE CAUSATION AND SURGICAL TREATMENT OF AFFECTIONS OF THE ADNEXA.[1]

BY H. MACNAUGHTON JONES, M.D., M.CH., M.A.O. Q.U.I., F.R.C.S. IREL. & EDIN.

THE object here is briefly to review, alike from the pathological, clinical, and operative standpoints, the influence which our present knowledge exerts on the diagnosis and operative treatment of appendical complications in affections of the female genitalia. The importance of the subject is illustrated by such cases, amongst others, as the following:—In a child, aged 10, an appendical abscess with the appendix found adherent to the pelvic floor; in a child, aged 11, the inflamed and diseased appendix adherent to the ovary; pyosalpinx with a long appendix adherent to a diverticulum of the bowel at the left side; an adnexal lesion in which the rudimentary appendix, reduced to a thin cord, was constricting the bowel; a case in which the cystic ovary, tube, and appendix, with concretions, were matted together; a retrocæcal abscess with slough of the appendix (only discovered post mortem) following curettage and resection of cystic ovaries, performed for menorrhagia and dysmenorrhœa associated with endometritis, without any history or suspicion of appendicitis; some cases in which subsequent appendectomies had to be performed after cœliotomy for adnexal disease.

There is the interesting question of the course of the inflammation from ovary to appendix, or *vice versâ*. The "appendiculo-ovarian" ligament, first described by Clado, is by some authorities (as, for example, Treub, Dutilh, Olshausen, Krönig, and Döderlein) accepted as the track by which the infection travels. This ligament (springing from the "infundibulo-pelvic ligament"), according to these and other gynæcologists, contains nerves, vessels, and lymphatics. Parametritic disease may extend along it to the cellular tissue between the mesentery of the cæcum and the iliac mesentery of the appendix, or in the opposite direction, the primary condition (according to Krönig) being a chronic adhesive appendicitis. This leads to suppurative processes which extend along the lymph tracts, or there may be a direct rupture from the one structure into the other. Hartmann (Paris), who has discussed this question exhaustively, believes, on the other hand, that this ligament is simply a fold of peritoneum passing behind the meso-ovarian and does not form any vascular or lymphatic link between the ovary and appendix. He (Professor Hartmann), with others, accounts for the spread of the inflammation either by direct contact of the diseased structures one with the other

[1] Abstract of a valedictory address to the Obstetrical and Gynæcological Section of the Royal Society of Medicine.

or by the serous peritoneum. As the result of inquiries for the purpose of this paper made from ten of the university anatomists of the United Kingdom, one arrives at the conclusion that British opinions vary as to the presence and nature of this structure. It does not appear to be always present; it may be a peritoneal fold not containing any lymph vessels; it is distinct from the appendiculo-pelvic ligament. Professor A. M. Paterson (Liverpool University) has made for me a recent drawing from a subject in which the infundibulo-pelvic ligament is clearly seen, and which, he says, contains the ovarian vessels, nerves, and lymphatics, and is constantly present, extending from the pelvic brim to the outer end of the Fallopian tube. It would thus appear that there are different routes by which the inflammation may travel, and that it often may be the result of direct contact. There may also be (as demonstrated by Crossen) adhesions between the appendix and cæcum, and through exceptional mobility of the cæcum, the consequent infiltration, simulating an intro-cæcal growth, may drop down into the tubo-ovarian region. He has had two such cases.

As to the important question of the relative frequency of appendical complications in adnexal disease, statistics vary, partly because some follow the vaginal route in operations, and hence do not examine the appendix, and, secondly, because the pathological conditions present in the appendix (Krönig) escape notice when it is not removed. Krönig says that a right-sided pyosalpinx in a young patient in whom there is neither clinical nor bacteriological evidence of tuberculosis or gonorrhœa, is almost certainly due to infection of the tube from a primary appendicitis. Abscesses in Douglas's pouch are often due to the same cause. From the statistics (quoted) of a very large number of laparotomies performed on women for adnexal disease, we may conclude that on a moderate calculation some 12 per cent. have appendical complications. Some authorities, as, for instance, Krönig, Peterson, and Hermes, put it at 50 per cent. Howard Kelly, in his recent "Medical Gynæcology," says that in the ten years previous to 1904 he removed the appendix in 240 cases, the majority of which were combined gynæcological and appendical affections. He comments on the predisposing influence of torsion of an ovarian cystoma, the greater frequency of appendical involvement in ectopic gestation, and its rarity in myomata. On the line of practice pursued by continental and American, as well as some British gynæcological surgeons, I have had definite answers to these two queries from all to whom I have written: "Do you examine the appendix in every case of cœliotomy?" "Do you always remove it, and if not under what conditions do you do so?" These authorities include Howard Kelly, E. Montgomery, Polk, J. B. Murphy, Boldt, William Mayo in America; Lapthorne Smith in Canada; P. Zweifel, Zurhelle (for Professor Fritsch), Bumm, Schötlander, Wertheim, Döderlein, Schauta, Schultze, Dmitri de Ott, Mangiagalli, Jacobs, Hartmann, and Pozzi on the Continent. At home I have ascertained such representative views as those of Dr. E. H. Tweedy, Dr. H. Jellett, Dr. F. W. Kidd, Dr. J. Campbell, Sir Halliday Croom, Dr. J. M. Munro Kerr, Mr. Christopher Martin, and Dr. Murray (Liverpool). The unanimous opinion of all is that the appendix should be examined in any cœliotomy for adnexal disease. Krönig and Montgomery remove the appendix whether it be diseased or not, Kelly and Boldt in nearly all instances; Lapthorne Smith inclines to the same course, also Schultze, unless there be some special contra-indication. All the others named remove it only when there is evidence of adhesion or some morbid condition, or unusual length.

[Dr. Macnaughton Jones here dealt with diagnosis, discussing the relative value of McBurney's and Lanzs's points, the classical clinical signs of appendicitis as compared with salpingitis, Olshausen's diagnostic distinction, and the pathological evidences which point to the original source of the inflammation, as also the necessity for the bimanual and recto-vaginal method under anæsthesia. He continued:—]

Several authorities, since MacLaren drew special attention to the causal relationships between appendicitis and dysmenorrhœa, have pointed out the correlation which exists between the two, notably Soupault and Jouaust. Here, again, the presence of the more characteristic signs of appendicitis, such as gastro-intestinal symptoms or muco-colitis, and the localised character of the pain together with elevation of temperature in the rectum as compared with that in the axilla, and abdominal rigidity, will materially assist us in coming to a conclusion.

As to the method of operation, the abdominal route in these ambiguous cases appears decidedly preferable to the vaginal, and also the median incision. If, however, the abscess be localised in Douglas's pouch, a posterior colpotomy for many reasons is the best method of attack.

On the entire consideration of the subject I think it is clear that the appendix should be examined in every case of cœliotomy for adnexal disease. This equally applies to the left adnexa as to the right. When the abdomen is opened for a grave appendical trouble the adnexa should be examined. The appendix should be removed in every instance where any abnormality or disease is found or if it be of unusual length, also if from the character of the operation there is a probability of further adhesions forming which may involve the appendix. The severity of the operation, however, will always have to be taken into account, and the influence its prolongation may have in lessening the chances of the patient's recovery.

Harley-street, W.

RUBELLA OR MEASLES?

BY DONALD W. C. HOOD, C.V.O., M.D. CANTAB., F.R.C.P. LOND.,
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THE following case presents some points of interest to those who share with the writer the belief that rubella is probably but a variety of measles.

A young married woman, aged 27 years, who had never suffered from any form of measles, on Monday, Jan. 23rd, felt poorly, with headache and general aching pains, the temperature being 102° F. She remained in much the same state, and the temperature continued to be raised until I saw her on Thursday afternoon, Jan. 26th, the only symptoms of illness then being a temperature of 102°, a general feeling of malaise, and a slight but persistent headache. The following morning I found practically the same condition, which remained without further symptoms until Sunday, Jan. 29th, when on waking in the morning a rash was found on the face and neck. The eyes were suffused, there were a dry irritable cough and a characteristic rash of measles, with a temperature of 102·4°. During the next 24 hours the rash had much increased, and on the morning of Monday, the 30th, the face was swollen and contorted with a confluent eruption, which had by this time invaded the arms, chest, and abdomen. There was also much rash on both hard and soft palate. No Koplik's spots were present. One small painful gland on the mastoid could be felt. The cough was constant but the temperature had fallen to normal and remained so during the entire eruptive period of four days. The rash invaded all parts of the body and was typical of measles. From first to last, with exception of the irritable cough and injection of conjunctivæ, there was no sign of coryza or catarrh.

I believe that anyone with experience of all kinds and sorts of measles would have found it difficult to place this case in the appropriate class. Within the past few months there have been a large number of cases of measles, not only in the London area but throughout England, and I understand that in many instances the type is atypical. I have been informed by four experienced practitioners that they have been attending patients with whom they have found it impossible to differentiate between so-called rubella and measles.

In the Epidemiological Section of the Royal Society of Medicine the subject of rubella was discussed in February, 1908, and one of the speakers referred to a little pamphlet of mine on the etiology of rötheln, in which he stated that I had expressed the view that rubella is an "attenuated form of measles." Never for one moment have I held such an opinion. I consider that rubella and its congeners are varieties of measles, and, far from being always of an attenuated form, may occur with extreme severity. Those who describe rubella as being of a mild character must surely forget the description of a small epidemic alluded to by the late Dr. Cheadle in a paper read before the International

Congress of Medicine held in London in 1881. This epidemic, considered by me at the time to be caused by very severe measles, was regarded by Dr. Cheadle as due to rubella, and he formed this opinion mainly from the fact that in a large number of instances those who suffered from the attack had previously suffered from ordinary measles. Such an argument in favour of specific difference is of little value or weight, as we know that it is quite common for individuals to have two or more attacks of ordinary measles. Although we may assume that an attenuated virus may produce an atypical clinical condition, with very marked variation or even suppression of symptoms, it has to be considered on an entirely different footing to a virus that has undergone variation and given rise to an illness atypical to the parent or ordinary form of the disease. Such a variation may tend to increase of virulence and symptoms may so assume a more intense form. I have seen a nearly white sparrow hopping about in the roadway. This bird can scarcely be called an attenuated sparrow, but it undoubtedly does show some variation from the ordinary type. Some of those who read these lines may love our wild flowers, and they may have been puzzled when first seeing Butcher's broom, that curious shrubby plant with the prickly pseudo-leaves and berries so suggestive of our common holly. One would hardly associate it with the gentle, delicate lily of the valley, and yet it is one of its sisters, and we must classify it as a lily.

Under the genus measles would I class rubella, coming before us, as it undoubtedly does, under many a form and aspect, and until the bacteriologist supplies us with more definite information I shall believe that the balance of clinical evidence is in favour of "German measles" being only a variety of the common type.

Green-street, W.

A SUCCESSFUL CASE OF OVARIOTOMY AND CÆSAREAN SECTION PERFORMED ON THE SAME SUBJECT AT ONE SITTING.

BY H. B. MYLVAGANAM, F.R.C.S. ENG.,
SURGEON TO VICTORIA HOSPITAL, BANGALORE.

IT is not often that an opportunity presents itself of carrying out two major operations on the same subject at the same time, and the successful performance of the operations which I here describe illustrates forcibly the physical endurance of Indian women, who lead a simple life. The notes of the following case will perhaps be of some interest, and the rarity of the position is my plea for publishing them.

On August 9th, 1910, a Hindu female, aged 30 years, was admitted into Victoria Hospital, Bangalore, with an enormously distended abdomen. The history of the case showed that the patient had menstruated at the age of 14 years and had had no menstrual troubles. She had not menstruated for the past eight months. She was married and had borne two children. She had felt sensations in the abdomen resembling fœtal movements. She had never had any abortions. She had noticed that for the past few years the abdomen was becoming larger, for which she had been tapped at the Mysore Civil Hospital four times and fluid had been drawn out.

Upon admission the patient was found to be much emaciated and anæmic. Marks of old tappings were visible over the linea alba between the umbilicus and pubes. The abdomen was enormously distended, so much so that she was unable to lie down comfortably, but sat up in a semi-recumbent position the whole time. The abdominal wall was much thinned out. There was dulness over the front of the swelling, as well as resonance in the flanks. A distinct fluid thrill was felt over the swelling on palpating its upper portion, but a hard lump was felt on the left side between the umbilicus and the left Poupart's ligament Owing to the tension of the abdomen the nature of this hard lump and its relation to the cystic swelling could not be made out. The breasts were flaccid, the areolæ were slightly pigmented, and a thin serum exuded on squeezing the nipples. The cervix was softened, and the os uteri was dilated to the extent of admitting the tip of a finger. There was no history of morning sickness. No œdema of the lower extremities was present. The urine was normal.

The case was diagnosed as one of ovarian cyst complicated with pregnancy, but the duration of the latter was not certain, as the uterus could not be clearly defined abdominally.

On August 13th abdominal section was performed, and a large thin-walled cyst containing smaller cysts was found occupying the upper part of the abdomen, reaching from the ensiform cartilage as far as the umbilicus, and an enlarged uterus was lying below it, with the fundus directed to the left. The appearance of these two swellings was characteristic. The cyst was pearly white and the uterine swelling was of a reddish colour. The cyst, which involved the right ovary, was tapped and removed. Owing to the advanced state of the pregnancy, it was thought advisable to perform Cæsarean section for the following reasons: (1) In case the mother had a premature delivery in consequence of the operation, an abdominal wound would be inconvenient for the expression of the placenta, &c.; (2) in the event of peritonitis or any other accident to the mother incidental to an abdominal section, the safety of the fœtus would be endangered; and (3) because a viable fœtus was likely to be delivered. The uterus was therefore divided in the middle and a viable female fœtus, about 8 months old, was removed. The uterus was sutured up by double layers of suture, the first layer passing through the peritoneal and muscular coats without entering the cavity, and the second row through the peritoneal coats only.

The patient made an uneventful recovery in spite of the double operation, which occupied about 1 hour and 25 minutes, and mother and child were discharged from hospital in one month after the operation.

Bangalore.

A FATAL CASE OF ACUTE MERCURIAL POISONING.

BY A. W. BURTON, M.B., CH.B. EDIN., L M. DUB.,
HOUSE SURGEON, BRISTOL GENERAL HOSPITAL.

THE patient, a single woman aged 26 years, was admitted into the Bristol General Hospital on August 21st, 1910, under the care of Dr. Carey Coombs, who was at that time in charge of Dr. J. Odery Symes's beds.

At about 1 P.M., shortly after a meal, the woman, who had previously attempted suicide, swallowed 44 grains of corrosive sublimate in the form of soluble tablets. She was seen about an hour later and presented a cyanosed appearance, with cold clammy hands and face. Vomiting began almost immediately after she was seen. The vomitus, which at first closely resembled the white of an egg, soon became bluish in colour, the solid constituents of the vomit being stained blue as well as the fluid part. This was due to pigment present in the poison swallowed. About 15 minutes after the onset of vomiting the patient was seized with severe abdominal pain, and profuse violent diarrhœa set in suddenly, the motions being greenish and very slimy. Both vomiting and diarrhœa became persistent in character. The pulse became rapid and weak, and the cyanosis was soon replaced by pallor, the patient passing into a condition of marked collapse. The abdomen was flaccid and moved very little during respiration. There was no rigidity, tenderness, or distension present. The hepatic and splenic dulness remained normal throughout. After the patient had vomited several times the vomitus became blood-stained, but no shreds of mucous membrane were seen in it. The pupils remained equal and normal in size and reacted to light.

During the following night the patient vomited blood-stained material at intervals; still no shreds of mucous membrane were seen. Abdominal pain continued to be severe and paroxysmal in character, causing her to cry out. There was marked odynphagia. The diarrhœa became less profuse, but continued. Vomiting persisted and the patient complained of a choking sensation in the throat, and at times became dyspnœic. There was complete suppression of urine and only one fluid drachm of serous blood-stained fluid was drawn off from the bladder, which showed no signs of distension. Acute vaginal pain was present, and the vulva was found to be swollen and red, slight vaginal discharge being present. Tremors were present in the limbs, but no convulsions

took place. Later the actions of the bowels became very frequent, the motions, which were small in quantity, being very offensive and containing numerous shreds of foul-smelling necrotic mucous membrane. Each motion was blood-stained. The gums became very red and the lips slightly swollen. The tongue was very red, dry, and brown-coated on its dorsum. The pharynx was red and congested, and patches of excoriation appeared on the buccal mucosa. Salivation was not a conspicuous feature. The abdomen became retracted and its movement during respiration much diminished. No urine was passed. The bladder remained undistended and the catheter was passed on several occasions without result. Diarrhœa persisted, but vomiting occurred much less frequently. Tremors were noted in the jaw and hands. The odynphagia and also the abdominal pain gradually disappeared. The abdomen became somewhat distended, moved more freely, and gurgling sensations were produced during palpation. There was slight resistance over the upper part of the abdomen, but little tenderness. No signs of perforation could be detected. The vaginitis became less marked under treatment and no sloughing occurred. The patient gradually became drowsy and ceased to complain, the tongue and lips became more inflamed, and the anuria was most persistent. The temperature was practically subnormal throughout, ranging between 95·5° and 96° F. Drowsiness gradually passed into coma, and she died on August 28th at about midday, seven days after taking the poison.

The symptoms were probably modified to a considerable extent by the adoption of prompt and appropriate treatment, which consisted in early lavage of the stomach, the administration of antidotes and stimulants, and attempts to assist elimination, together with the treatment of the various symptoms as they arose.

Post-mortem examination.—Swelling of lips and buccal mucosa. Tongue swollen. Fauces inflamed and red. A small hæmorrhagic ulcerated area on the anterior surface of the œsophagus 2½ inches from the cricoid cartilage; remainder of œsophagus free from ulceration but congested. Thymus: trace. Thyroid: slightly enlarged. Pleuræ: slender adhesions and excess of fluid on both sides; tracheitis. Lungs: hypostatic congestion in both bases; mild bronchitis. Pericardial sac: normal. Heart: slightly enlarged; heart muscle pale, friable and soft; valves, endocardium, and coronary arteries normal in appearance. Abdomen contained several ounces of blood-stained non-coagulable fluid; no adhesions; no perforation of any hollow viscus. Liver somewhat pale. Gall-bladder filled with bile; mucous membrane quite healthy. Bile-ducts and Vater's ampulla normal. Spleen not enlarged, good colour and normal consistence. Pancreas and ducts normal. Suprarenal capsules normal. Kidneys: both slightly enlarged. Relative thickness of cortex and medulla as 1: 3. Cortex pale and streaked with congested lines in all directions. Glomeruli easily seen on section. Calyces, pelves, and ureters much injected and filled with a semi-solid brownish-coloured material. The microscope revealed the presence of intense regressive changes in the renal parenchyma widespread in distribution. Bladder: mucous membrane much injected; its cavity contained some semi-solid brownish material but no urine. Uterine appendages: normal; a recently ruptured Graafian follicle in the left ovary; no sloughing in the vagina. Alimentary canal: ulceration of œsophagus as mentioned previously. Stomach normal in size and shape; mucous membrane yellowish in colour with absence of rugæ. On the greater curvature about 2 inches from the pyloric orifice a black escharotic ulcer about the same size as a half-crown. Pylorus normal. The intestines showed signs of most intense irritation. Mucous membrane of duodenum much injected; no ulcers present. Jejunum and a large part of the ileum almost normal in appearance; mucous membrane yellowish in colour and hyperæmic. Lower part of ileum, cæcum, and whole large intestine completely involved in a continuous series of escharotic ulcers of the most virulent type and greyish-black in colour.

Briefly, the case is worthy of record because a dose of 44 grains of mercuric chloride, taken in a very concentrated form, failed to prove immediately fatal. The poison was taken shortly after a full meal, and was, therefore, so far diluted that its irritant action on the digestive mucosa was not quite intense enough to prove rapidly fatal. At the same time, however, the end was only delayed until the poison, taken in a readily soluble form, quickly dissolved in the stomach, and freely absorbed into the circulation, had time to produce the evidences of general systemic mercurialism in a very intense degree. Although we were at first encouraged by the patient's temporary recovery from the stage of gastro-enteritis, it soon became clear that her system was so saturated with mercury that we had no justification in hoping for her recovery.

I am much indebted to Dr. Carey Coombs and to Dr. Symes for their help and for permission to publish the notes of the case.

Bristol.

Medical Societies.

EDINBURGH OBSTETRICAL SOCIETY.

A Contribution to the Theory of Enzygotic (Mono-chorionic) Twins.—Mongolism.—Two Rare Pelvic Tumours.

A MEETING of this society was held on July 12th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. D. BERRY HART read a paper entitled, "A Contribution to the Theory of Enzygotic (Mono-chorionic) Twins." By enzygotic twins were understood twins developed from one zygote (fertilised ovum). The most striking instance of these was identical twins, where the similarity was complete, even to the finger-prints (Wilder). It was further noteworthy that all twins derived from one zygote were of the same sex. In considering the causation of such anomalies Dr. Hart advanced the theory that one must go back to the zygote itself, and looking on it as containing the determinants for the organs of the developed infant he suggested that in enzygotic twins there might be a complete or incomplete doubling of the determinants, and then a complete segregation of these into two groups. In identical twins the doubling and segregation were complete; in the other deformities the doubling was incomplete, and segregation thus gave a complete twin and an incomplete one. Thus if an acephalic twin was present along with a normally developed one the determinants for the head were not doubled, and thus the acephalic result on one side.—Dr. J. W. BALLANTYNE discussed Dr. Hart's ingenious theory of origin of double monsters, identical twins, and allantoido-angiopagous twins. It was now about 20 years since he had contributed several articles on these curious monstrosities, and whilst he had admired the ingenuity of Dr. Hart's theory he did not see how it explained such mixed types as the paracephalic twin without a heart. He agreed with Dr. Hart as to the probability that these twins were formed in the germinal period of ante-natal life. Dr. Hart deserved credit for the way in which he was applying Mendel's theory to the science of development.—Dr. JAMES RITCHIE asked if it were purely theory or had Dr. Hart any facts to support the argument that there was a doubling of the determinants.—Dr. W. FORDYCE and Dr. B. P. WATSON also engaged in the discussion.—Dr. HART, in reply, stated that there had been hundreds of exact observations that all organs of the body might be lost. In cases without a heart there was an absence of determinants. They must speculate to a certain extent and then see if the speculation fitted in as an explanation of certain facts.

Dr. H. M. CHURCH read a paper on Mongolism, and stated the case of a Mongol girl, born of a primiparous mother, who had a bicycle accident about ten days after conception. Both parents were young and healthy, and had a subsequent family history of three healthy boys. Mongolian primiparous birth was very rare, and Mongols were often the product of parents with disparity in age or of a mother exhausted by child-bearing. In this case there was no indication of parental alcoholism, syphilis, or tuberculosis.—Dr. HART thought that traumatism was one of the best explanations of the condition.—Dr. BALLANTYNE referred to the effect of traumatism on the embryo. It was known that when eggs were shaken by a railway journey and immediately incubated on arrival there would be a number of abnormal chicks, but if the eggs were allowed to rest some days and then incubated there would be the usual number of healthy chicks. But it was difficult to understand how

traumatism could act on the human embryo, packed away practically safe from a shock.—Dr. H. OLIPHANT NICHOLSON also took part in the discussion on mongolism.

Dr. A. H. F. BARBOUR and Dr. WATSON read a paper, illustrated with lantern slides, on Two Rare Pelvic Tumours—Perithelioma of the Uterus and Perithelioma of the Fallopian Tube. The former occurred in a parous woman, aged 58 years. The symptoms were watery and fœtid leucorrhœa and a return of uterine hæmorrhage ten years after the menopause. The tumour, removed by hysterectomy, was of the size of a five months' pregnancy. On section it was of a yellowish colour and contained many hæmorrhages very like an ordinary sarcoma. Microscopically a great part was found to be necrotic, but throughout the typical structure of a perithelioma could be seen. The tubal case was a woman, aged 51, unmarried and nulliparous. She had a swelling in the lower part of the abdomen and a hæmorrhagic vaginal discharge. Free fluid was found in the abdomen and secondary nodules were present all over the peritoneum. The left tube was the seat of a tumour. The patient died 11 days after the operation. The tumour of the tube presented the same characters as the uterine one described above.—The PRESIDENT said he showed a uterine specimen to the society recently, and though the uterus and upper part of the vagina had been removed it had already returned within three months and was spreading rapidly. These tumours were evidently of extreme malignancy.

Reviews and Notices of Books.

An Introduction to Bacteriological and Enzyme Chemistry. By GILBERT J. FOWLER, D.Sc., F.I.C., Lecturer in Bacteriological Chemistry in the Public Health Department, Victoria University of Manchester; Examiner in Biological Chemistry to the Institute of Chemistry of Great Britain and Ireland. London: Edward Arnold. 1911. Pp. 328. Price 7*s.* 6*d.* net.

WE cordially welcome this book because it deals in easy stages with an ever-widening and interesting subject—the rôle of bacteria and ferments in so many departments of life. The development of biological chemistry has been very extraordinary during recent years, and the importance of its study becomes more apparent as fresh instances are revealed of the value of its applications in matters of great practical moment. "A knowledge of it is now necessary for the scientific conduct of many industrial processes of great magnitude," says Dr. Fowler, "..... apart from its well-known applications in the fermentation industries, a scientific understanding of this branch of chemistry is likely to exercise considerable influence upon the future development of agriculture. ..... Recent advances in sanitation, especially the provision of pure water and the inoffensive disposal of sewage, call for the coöperation of the engineer and the biological chemist." To these reasons, advanced by Dr. Fowler as though to justify the appearance of his book, we may add another which makes the study of biological chemistry of supreme importance—namely, the share which it has taken in advancing our knowledge of the great vital processes of the human machine. The whole superstructure of modern medicine would never have been raised if the foundations had not rested on bio-chemical considerations.

Dr. Fowler opens his subject with a short chapter on chemical action in living matter, which necessarily introduces the reader to a consideration of catalysis, colloids, and osmotic pressure. Next comes a clear survey of bacteriological technique, and then the author evidently found he could not proceed further with his subject until the principles underlying organic chemistry had been discussed, a discussion which culminates in an account of the chemistry of the sugars and starches. Then the reader gets fairly into the subject by following the experimental details illustrating the action of amylase (diastase) upon starch. This naturally leads to a chapter on the alcoholic fermentation of sugar, and later the acid fermentation of alcohols and carbohydrates. Miscellaneous fermentations (fat-splitting enzymes, oxydases, clotting enzymes) come in natural sequence. The chemistry of the albumins, the nitrogen cycle, and the sulphur cycle complete the fascinating story. Finally, practical applications are considered in the remaining chapters dealing with the fermentations of indigo, tea, cocoa, coffee, and the bio-chemical processes concerned in the purification of water and of sewage effluents.

It is hard to keep pace with the many attractive departments of scientific advance which are so active on all sides at the present day, but the man who wants to be sound in his rudiments on a given subject, without being forced to read a long account of researches which have founded principles will be grateful for a text-book which presents the story clearly and shortly and in the simplest terms. This is true of Dr. Fowler's excellent book, and the individual who is anxious to know what the simple cell is and does, what ferments, nzymes, and oxydases are, and how they serve practical, purposes, will find the help he needs in this volume.

Diagnostic Therapeutics: a Guide for Practitioners in Diagnosis by Aid of Drugs and Methods other than Drug-giving. By ALBERT ABRAMS, A.M., M.D. (Heidelberg), Consulting Physician to Mount Zion Hospital and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College. With 198 illustrations. London: Rebman, Limited. 1910. Pp. 1039. Price 21*s.*

THE somewhat cryptic title of this book gives but little clue to the nature of its contents and small justification for its size. In the preface we are informed that it is a work neither on therapeutics nor on diagnosis, but that an attempt has been made to coördinate both subjects with a special object in view. The nature of that special object is, however, left nebulous, and in substance this book seems to us to be a very lengthy and discursive expression of the author's views on the actions and uses of drugs and other therapeutic measures. Diagnosis by the results of treatment is at best a confession of inability to establish the nature of the condition of a patient on a sound rational basis, and the success of a given drug or measure cannot be regarded as confirming a tentative diagnosis. As our knowledge of disease processes and their effects increases, the rôle of diagnostic therapeutics, if we may adopt Dr. Abrams's nomenclature for the moment, should contract more and more, and even now we cannot but feel that its scope is limited. At the same time, in justice to Dr. Abrams, it is only fair to mention that his book contains a great deal of useful information, the outcome obviously of a wide experience of practical medicine.

The first chapter is given up to some general observations upon diagnosis and treatment, and bears little relation to the subject to which the book is ostensibly devoted. The second chapter deals first with the interfering action of drugs in diagnosis, which includes a discussion of the difficulties introduced by injudicious medication in obscuring some symptoms and inducing others, such as drug eruptions. Drugs in the etiology of disease are next considered, and under this heading the toxic effects of various medicinal agents and their special effects in susceptible persons are described in some detail, the various drugs being dealt with in alphabetical order. Drug diseases are then tabulated according to the effects produced by the drugs. Food in the etiology of disease forms the next subject discussed. Questions of diet, of food poisoning, of metabolic diseases, of intestinal and other parasites, and of constitutional diseases caused or modified by diet, are reviewed in this

section. This chapter concludes with a study of methods other than drug-giving in the diagnosis of disease. Various processes, such as blood-letting, catheterisation, lavage, exploratory punctures, and the use of the X rays, are described in full, together with the accidents which may occur from their use.

The subject of the third chapter is, according to its heading, that of drugs in diagnosis, or diagnostic pharmacotherapy. It is here that one might expect some justification for the title of the book, and certainly the indications in regard to diagnosis afforded by the administration of drugs are incidentally discussed, but the 222 pages to which this chapter extends are more concerned with the therapeutic uses and effects of the drugs than with their employment for diagnostic purposes. The fourth chapter, which is even longer, deals with methods other than drug-giving in the diagnosis of disease, and includes detailed descriptions of most of the mechanical methods of treatment and diagnosis as well as of psychotherapy. The fifth chapter is headed Diagnostic-etiologic Therapeutics, and is concerned with questions of the previous diseases of patients, diatheses, and conditions associated with special periods, such as childhood, puberty, pregnancy, lactation, and senility. The sixth chapter is even less related to the subject of diagnostic therapeutics, since it is concerned with the diagnosis of visceral sufficiency. We can imagine a smaller book strictly devoted to the consideration of the so-called therapeutic test in diagnosis being both interesting and useful, but Dr. Abrams, by his discursive, anecdotal, and allusive style, has defeated the object he presumably had in view.

Military Sanitation and Hygiene. By E. BLAKE KNOX, B.A., M.D. Dub., D.P.H. R C P.S. Irel. (Hons.), Captain R A M C. With 21 illustrations. London: Baillière, Tindall, and Cox. 1911. Pp. 346. Price 5*s.* net.

THIS is an excellent manual dealing with the subject of military sanitation and hygiene from the point of view of those whose duty it is to assist in keeping all ranks fit for the supreme test—namely, the test of war. There are succinctly laid down in it all the essential matters dealing with the medical inspection of troops in barracks, the environment of the soldier as regards the points connected with his barracks, with the disposal of excreta and sewage, the sanitation in camp and bivouac, the conservancy for encampments, the water-supply of camps in peace and war, the food of the soldier, questions connected with clothing and equipment, and the points in relation to marching. In addition there is a chapter especially devoted to physical efficiency, the subject being discussed under the heads of personal hygiene, cigarette smoking, and physical training. Here nothing seems to have escaped the notice of the author; we are glad to see he lays stress on the necessity of greater attention to the soldier's teeth, thus obviating many of the barrack-room affections, such as sore-throat and chronic tonsillitis, leading to deafness. Doubtless many digestive affections owe their origin to, or are aggravated by, imperfect mastication due to bad teeth. The last chapter is devoted to the collection of sanitary intelligence. Here we would especially draw attention to remarks on the food of the soldier considered in all its aspects—the soldiers' rations during peace, questions concerning the inspection of fresh meat, the diseases affecting meat, the soldiers' rations during war, the matters relating to preserved food, all of which are comprehensively yet concisely considered.

In these days, when company officers have to teach their men elementary sanitation, such a work as the present, together with the excellent manual of Lieutenant-Colonel R. Firth on Military Sanitation, will supply all the necessary information. Medical officers cannot carry large tomes about with them on service or in camps of exercise; but in the volume under review they will find nothing omitted of importance on the subjects of which the author treats. We heartily congratulate the author.

Les Arythmies. (*The Arrhythmias.*) Par Le Docteur H. VAQUEZ, Professeur Agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital Saint-Antoine. Leçons recueillies par le Docteur CH ESMEIN, Chef de Clinique adjoint à la Faculté de Médecine de Paris. Avec 48 figures dans le texte. Paris: Librairie J. B. Baillière et Fils. 1911. Pp. 437. Price 15 francs.

UNTIL recently conditions of cardiac irregularity received but scant attention, and our knowledge in regard to their origin and significance was extremely slight. The more careful investigation of these cases by graphic methods and the study of the fundamental properties of heart muscle in relation to disturbance of the rhythm of the heart's contractions, have invested the subject with a real practical interest, and have already afforded much useful information. In the book before us Professor Vaquez has supplied an instructive, readable, and interesting account of the present state of our knowledge in regard to this subject. The lectures upon which this book is based have been reported and edited by Dr. Esmein in such a way that the subject-matter retains the didactic and simple form in which it was obviously delivered, which renders it easy to grasp and to follow.

In the earlier lectures a brief history is given of the study of arrhythmia, and a careful discussion of the myogenic and neurogenic theories of the inception of the cardiac rhythm is included. The importance of the primitive cardiac tube and of its remains in the adult organ in the form of the bundle of His, and the nodes of Tawara and Keith and Flack, is clearly brought out. An interesting summary of the fundamental properties of heart muscle and of the relation of these properties to arrhythmia is also given. The various graphic methods employed in the investigation of disturbances of the heart's rhythm are described and illustrated by photographs and reproductions of tracings. An apparatus for recording the movements of the left auricle by means of a tube passed down the œsophagus is described, and the interpretation and value of tracings obtained by it are carefully considered. A clear account is given also of the recording of electrocardiograms by means of the Einthoven string galvanometer. Professor Vaquez is careful in the description of any graphic method to discuss fully its limitations and fallacies.

After these preliminary questions have been dealt with he proceeds to discuss the classification of the various forms of arrhythmia, and adopts as most satisfactory those proposed by Dr. James Mackenzie and by Professor Hering, which are in effect almost identical. The subjective sensations associated with different forms of arrhythmia and their significance are clearly considered in a separate chapter. The individual forms of cardiac irregularity are then dealt with categorically, those first analysed being the physiological modifications associated with the phases of respiration and with the change from the recumbent to the erect position. The characters of extra-systoles, their mode of origin, varieties, and prognostic significance are next studied in great detail. An exhaustive examination of the clinical characters of paroxysmal tachycardia is given, and the results of recent work upon its pathogeny are critically considered. Professor Vaquez regards this condition as an accumulation of extra-systoles, and he refers it to a modification of the excitability of the heart muscle, analogous to that which leads to the occurrence of the ordinary forms of extra-systole. The nervous system is described as having only an indirect effect in its production. Both paroxysmal tachycardia and extra-systoles are said to be

favoured by a pre-existing affection of the cardiac muscle. The characters of the pulsus alternans, of the persistent irregularity described as perpetual arrhythmia, or pulsus irregularis perpetuus, are next fully described, and the various views current as to their production are presented clearly and are critically discussed. An interesting chapter is devoted to the consideration of the prognosis and treatment of the arrhythmias.

A well-arranged bibliography and a useful index add to the value of this work, which we can cordially recommend to our readers as affording an impartial account of the present state of our knowledge in regard to the subject with which it deals, and an interesting presentation of the advances which the graphic method of studying the circulation has afforded. It is gratifying to notice that ample justice is done to the work of English and American investigators, particularly to that of Dr. James Mackenzie, whose pioneer work on this subject is quoted in connexion with every form of arrhythmia.

LIBRARY TABLE.

The Individual and Society; or, Psychology and Sociology. By JAMES MARK BALDWIN, D.Sc., LL.D., Professor in the National University of Mexico. London: Rebman, Limited. 1911. Pp. 210. Price 6*s.* 6*d.* net.—This little book was, we learn from the preface, written under "very exact and exacting limitations of space imposed by the editor of the series"—i.e., the French Bibliothèque Internationale de Sociologie. It is, therefore, necessarily somewhat superficial. Professor Baldwin's text is, to use his own words, as follows: "Society is looked upon as a mode of organisation *sui generis*, its matter is psychological; its rules of organisation are those which characterise the personal development of minds in relation to one another. ..... Sociology itself, dealing with the external and historical aspects of social life, must allow and demand the psychological interpretation of its results." Professor Baldwin reminds us that "the social relation is in all cases *intrinsic to the life, interests, and purposes of the individual;* he feels and apprehends the vitality of social relations in all the situations of his life"—a saying which we take to be the modern translation of Aristotle's remark, φύσει πολιτικὸς ἄνθρωπος. Sociological study, Professor Baldwin says, must be informed and renewed by a psychological interpretation of the facts. From our own particular point of view the most interesting portion of the book is that in which (p. 169 *et seq.*) Professor Baldwin discusses the problem of the sterilisation of the unfit, and he has no doubt that with the progress of medical and surgical science and the corresponding recognition of this social need "eugenic progress will be in this direction." But the problems stated in the book are so wide and far reaching that we cannot think that the work can be considered of much value in itself, except in so far as it may lead the reader to consult Professor Baldwin's larger works upon similar subjects.

A Short History of Bond street, Old and New. From the Reign of King James II. to the Coronation of King George V. By H. B. WHEATLEY, F.S.A.. Also Lists of the Inhabitants in 1811, 1840, and 1911, and Account of the Coronation Decorations, 1911. Published for the Bond-streets Coronation Decoration Committee by the Fine Art Society, 148, New Bond-street. 1911. Pp. 36. Price 2*s.*—Old Bond-street was built in 1686, New Bond-street, as far as Clifford-street, soon after 1700, and the extension to Oxford-street was commenced somewhere about 1721, so that the most aristocratic street of shops in London has had about two centuries of life in which to develop from a residential into a business thoroughfare, always preserving its reputation as a haunt of the fashionable world. The committee which was responsible for its uniform and distinctive decoration on the occasion of King George's coronation has done well in having had compiled by so sound an authority as Mr. Wheatley a succinct history of Bond-street's development from the days when Sir Thomas Bond, formerly a devoted follower of Charles II. in exile, headed the syndicate of adventurers who developed a portion of the estate on which Clarendon, in the last days of his prosperity, had erected the mansion destined to look down for so brief a period from its superior elevation upon St. James's Palace. Bond-street in its early days ran through fields, as Kip's old print of Burlington House, reproduced in Mr. Wheatley's book, plainly shows; and, indeed, he tells us how the great Sydenham, living, after a varied career, in Pall Mall (where he died in 1689), was robbed of a silver cup by a house-breaker, and how the thief was lost to pursuit in the bushes about the Conduit Mead. Bond-street hardly seems to have been a medical street in the nineteenth century. Of earlier days no lists appear to be available, although Mr. Wheatley reminds us that Fielding, in "Amelia," sends Colonel Bath to the house of an eminent surgeon in Bond-street to have his wounds dressed. In the lists republished by the author, George Spence, dentist to the King, is recorded to have been living in 1811 at No. 17, and P. Elizee, surgeon, at No. 36, Old Bond-street; and in 1840 "Smyth, Surgeon," is assigned as the tenant at No. 41, Old Bond-street, "Dr. Culverwell's Bathing Establishment" being at 23, New Bond-street. Among the celebrated names associated with the street's past history and reproduced in its recent decorations two may be mentioned from Mr. Wheatley's record. Laurence Sterne died in 1768 at No. 41, Old Bond-street, in the presence of a nurse and John Macdonald, a footman, sent to inquire after his health, who records, "I went into the room and he was just a-dying. I waited ten minutes, but in five he said 'Now it is come.' He put up his hand as if to stop a blow and died in a minute," a dramatically terse and restrained account of such a scene. The second is Bond-street's most distinguished inhabitant, Nelson, who about 1797 lived, we believe, at No. 147, now occupied by Mr. Charles Davis, the well-known dealer in antiques. Nelson lay there for three months wounded and suffering after the loss of his arm, tended by Lady Nelson and obtaining rest only by the use of laudanum. In the next century, after his death, Lady Hamilton lived at a house then numbered 130, and Mr. Savory, of Messrs. Savory and Moore, is mentioned by Mr. Wheatley as the possessor of a silver cup, her gift to his great-uncle, in return for services rendered by him as an apothecary. The name of the firm occurs at their present address in the list of 1840 already referred to, but that of 1811, being that of a "Town Visiting Directory," does not give it. Their beautiful old shop front, one of the few surviving in this part of London, is the subject of an illustration. The booklet is a readable one and might well be imitated in respect of other thoroughfares in our ever-changing metropolis.

Public Health and National Insurance. By H. MEREDITH RICHARDS, M.D. Lond., Medical Officer of Health and School Medical Officer, Croydon. London: P. S. King and Son. 1911. Pp. 77. Price 6*d.* net.—The greater part of this pamphlet consists of articles that have already appeared in several journals, including THE LANCET. As the medical officer of health of a large borough, a school medical officer, a medical referee to a large corporation, and an ex-police surgeon, the author may claim a wide experience in the conditions that render the National Insurance Bill such a complex problem. Those, he says, engaged in preventive medicine feel that a great opportunity will have been lost if the Bill simply results in stereotyping club practice. As to the various proposed

methods of payment, the author considers that no one method is to be preferred in all circumstances. He suggests that the Insurance Medical Service should be organised on preventive lines, and that both this and the existing public health service should be placed under a committee on which the insured, the medical profession, and the ratepayers should be suitably represented. He sketches out a plan under which a Statutory Health Committee, constituted as above described, should establish clinics staffed by part-time or whole-time salaried medical officers, to treat patients referred to the clinics, act as consultants and referees in respect of unusual claims, and undertake the medical work now devolving on the borough and county councils, such as school inspection. The committee should also arrange with general practitioners for attendance on the insured. The author further discusses the sanatorium benefit and the relation between the Bill and public health. In an appendix four main types of sick and medical benefit clubs are illustrated by concrete examples: the ordinary friendly society, the deposit society, the slate or dividing society, and the works club. The author insists that the system of insurance will not achieve its great possibilities of utility if it fails to correlate the medical service of the insured with the existing public health and educational services, or if it denies equitable payment for public work.

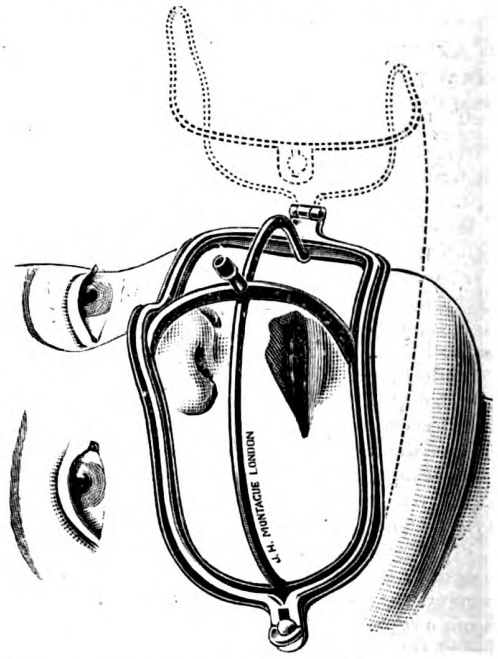
Retrospective Memoranda. By Sir JONATHAN HUTCHINSON, F.R.S. Subject Index and Index of Names, compiled by CHARLES R. HEWITT, Librarian to the Royal Society of Medicine. (New Sydenham Society's Publications.) London: H. K. Lewis. 1911. Pp. 70.—This is a memorial volume containing a short account of the New Sydenham Society, which, originating in 1859 on the death of the original Sydenham Society, was wound up in 1907. The book contains, also, an index catalogue of the society's publications and of the authors and translators of the works published by it, also portraits of Sir Jonathan Hutchinson and the late Mr. Henry Power. In the concluding words of his Memoranda Sir Jonathan Hutchinson says: "I do not believe that either of the two societies—the Sydenham or the New Sydenham, or both—have exhausted their field of productive labour. It may, perhaps, in each instance, have been for the best that its special organisation came to an end when it did, but there is surely no good reason why a third generation should not suitably engage in similar work." But he gives some sage advice to any who may be tempted to follow in this line—viz., not to undertake any large books, lexicons, year books, large-paged atlases, or works involving original composition or associated work, and, above all, nothing that cannot be finished promptly. It is interesting to note that the surplus sum of £171 10*s.* 8*d.* remaining after the discharge of the society's liabilities at its winding up was presented to the library of the Royal Society of Medicine for the purchase of works of special value to be marked as the gift of the New Sydenham Society.

The Dental Directory, 1911. London: John Bale, Sons, and Danielsson, Limited. Pp. 200. Price 2*s.* 6*d.*—This directory contains the names and addresses of registered dental practitioners, arranged both alphabetically and topographically, together with the date of their qualification and hospitals and places of medical education, practising in the United Kingdom, the Channel Islands, the Isle of Man, the colonies, and abroad. Information with regard to the dental hospitals and schools in the United Kingdom, dental societies, and dental publications is also included, with other useful information. As it does not seem to be generally known that the Channel Islands and the Isle of Man have special Dental Acts of their own, this fact is referred to by the publishers in a prefatory note. The book is of the convenient size of 8 in. by 3½ in.

New Inventions.

A NEW FRAME FOR THE ADMINISTRATION OF CHLOROFORM AND ETHER BY THE OPEN METHOD.

THE frame figured differs essentially from those generally in use in that its long axis is at right angles instead of parallel to that of the face. The frame (roughly the shape of a Napoleon hat) consists of a narrow trough adapted to the transverse curves of the chin and cheeks, and having a deep indentation to accommodate the nose. On this base is built up a framework of two metal arcs joining the respective extremities of the long and short axis of the bed frame, that joining the extremities of the short axis being a tube perforated on its under side, and having an extension at its highest point for the attachment of a Junker or oxygen tube (as in other patterns). The lint covering is kept firmly in position by a wire frame closely fitting the bed-frame and hinged to it at one end. The advantages



claimed for this frame are: 1. That it is more convenient to use, having but little tendency to slip off the face, and also having one of its poles close to the hand which controls the angle of the jaw. 2 That it fits the face more accurately than other patterns, and allows of the entry of less vapour-free air in patients with moustache and beard—a point of especial importance in the open administration of ether. 3. That it is convenient for operations on the upper part of the face, as a space of a full inch can be obtained between the upper edge of the frame and the lower border of the orbits. The narrow metal trough, though not peculiar to this apparatus, minimises the risk of chloroform burn without making the frame clumsy.

The frame has been made for me by Mr. J. H. Montague, of 69, New Bond-street, London, W.

South Kensington, S.W. E. V. DUNKLEY, M.D. Lond.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At the annual general meeting of this society held on July 14th the following officers for 1911–12 were elected:—President: Mr. W. McAdam Eccles. Treasurer: Mr. T. Gunton Alderton. Secretaries: Mr. D. F. Maunsell and Mr. N. Bishop Harman. Librarian: Dr. Arthur Saunders. Editor of Journal: Mr. H. W. Chambers. Editorial secretary: Mr. Aslett Baldwin.

THE LANCET.

LONDON: SATURDAY, JULY 29, 1911.

The British Medical Association: the Presidential Address.

THE Presidential Address of Professor ROBERT SAUNDBY, delivered at the opening of the Seventy-ninth Annual Meeting of the British Medical Association, will be found on another page. It contains so much that is of interest and value in connexion with the National Insurance Bill, and with the position occupied by the medical profession in the discussions arising thereon, that it is unfortunate that it probably will not be as widely read as it deserves to be by those laymen whose full appreciation of the points at issue is to be desired. For it is particularly important, not now but always, that the public should be able to understand the medical view. The question of the position which the medical profession should occupy under the new legislation is a matter of vital and intrinsic importance to that profession, and of no less vital and intrinsic importance to the public; and we are glad to observe that the feeling is growing among the public that, so long as the members of the profession seek to insist upon a right to be a party to a bargain, justice must uphold their view. A bargain honourable to the profession and beneficial to the community is what we want, and not to have obligations thrust upon us by the legislature and our status altered in the economy of the nation despite our just and reasoned disapproval. The position of the medical profession at the present critical moment is one calculated to add weight to its claims for due consideration. Its recent progress may be traced by anyone who studies, and is able also to read between the lines of, the opening of Professor SAUNDBY'S address. The advance made in medical education, which he illustrates from presidential addresses delivered in past years at Birmingham, is a great and notable fact which few are likely to ignore or to deny if it be brought to their memories. The widening of the aims of medical science, and the prominence which it has given to the prevention, as distinct from the healing of disease, have a similar bearing upon the controversies connected with the National Insurance Bill. For the progress of medical science and the development of medical education have supplied the motive for the introduction of a measure which would have had no *raison d'être*, so far as its medical clauses are concerned, if the possibilities of medical beneficence had not been such as to command universal recognition. Those possibilities are the result of the work done by the medical profession in the past; and our students are being trained not merely to equal but to excel the achievements of their predecessors. Upon those grounds, if upon no others, the medical profession should have an irresistible claim to the right to be consulted, in order that the work which it is to have assigned to it in the future may be conducted with the fullest possible measure of efficiency.

The two principal points in the discussion of national insurance to which Professor SAUNDBY refers in that part of his address which deals directly with the imminent Bill are naturally the methods of control of the administration of medical benefits and the system of payment of medical men to be adopted. With regard to both matters the medical profession speaks from experience and from observation, and not speculatively, but in the first place it insists upon its right to be heard (using the expression we have employed above) as a party to a bargain, and not as a subservient body upon which an obligation may be imposed without its consent. The individual who undertakes service for the State knows, when he does so, to whose orders he will be subjected, and his confidence in the competence of that authority is one of the inducements for him to serve. He knows, that is to say, the class to which those in authority over him will belong, and the degree of fitness which is likely to characterise them. He may volunteer to perform a particular act subject to leadership of a totally different class, but he cannot with fairness be obliged to do so. The medical man who has entered upon his profession has not submitted himself to authority at all other than that governing the profession of which he has become a member, and the Bill proposes to limit his professional sources of income, or possibly to annihilate them unless he will allow himself to be controlled by bodies which he has had under his observation and whose control he looks on with mistrust. Professor SAUNDBY will be found not to confine himself to criticism of the Friendly Societies, but to supply pertinent and relevant facts with regard to the conditions which have prevailed in Germany, where the administration of medical benefits has been placed in the hands of committees managed by working men. A trades union, having recourse to strikes in order to enforce the rights of its members, has been, briefly, the only means open to the German medical men concerned in order to protect themselves against intolerable conditions of practice. Surely it would be better to have the fullest discussion beforehand, and the consent of the profession at large to the innovations proposed, than to go forward too quickly, and so drive an outraged profession to the methods of the dock labourer, with the difference that in the case of the dock labourer his cessation from the performance of his duties does not involve the risk of human lives.

With regard to the method of payment for the service to be rendered, we are shown the example of what has occurred elsewhere in the instance cited by Professor SAUNDBY from Switzerland, where the result of the allotment of fixed salaries to medical practitioners was found to be that the demands of the public for professional attendance by night and by day could not be satisfied, so that the practitioners had to abandon an arrangement into which they had more or less voluntarily entered. From the other point of view—that of the public, whose interests are at stake as essentially as those of the medical profession—Professor SAUNDBY rightly points out that "the services of a medical practitioner are above all others difficult to appraise, but no one can doubt that they cannot be adequately rendered if he is unable to spare the necessary time to

examine his cases. What can be the good of spending millions on the provision of sanatoriums for phthisis if the medical attendance is to be of such a character that early cases will rarely be recognised? The interests of the public are at one with those of the medical profession in the need for putting an end to contract work." The truth of the matter is that the aim of the National Insurance Bill, and of the Chancellor of the Exchequer in introducing it, is not that of the Friendly Societies, who in providing medical attendance in accordance with their own estimate of the value of medical science have brought into existence most of the evils of contract practice. Mr. LLOYD GEORGE has the ambition to give the people at large not the benefits of medical attendance already secured voluntarily for themselves by the members of Friendly Societies, but a great deal more. The Friendly Societies have been content, as a rule, to provide their members with such a semblance of medical attendance as may be rendered by an underpaid medical officer who, if he is to earn a decent livelihood, must reduce the time expended upon many of his cases to a very undesirable minimum. Mr. LLOYD GEORGE aims at obtaining for the working classes of the country the full benefits of modern medical science and the services of those who have taken best advantage of modern medical training. His difficulty is to do this with the financial means at his disposal, and the solution of the problem can only be found by securing the effective goodwill of the medical profession, who are in accord with his aims, as we have just stated them, but who differ from him as to the means by which these may best be attained, and as to the extent to which the attempt to attain them should be made at their expense. Professor SAUNDBY makes out a good case for delay in passing the National Insurance Bill until the medical profession has been adequately consulted—one of the two main points for which we have striven in THE LANCET. Our other contention could not be put in better words than those which he has employed, where he states that in the public interest contract medical work should be abolished.

The Coöperation of Medicine and the Public in the Campaign against Tuberculosis.

IN discussing Professor SAUNDBY'S wise and moderate address, delivered before the British Medical Association on Tuesday last in his Presidential capacity, we lay stress on the national benefits that must ensue from a better understanding by the public of professional aims and hopes. Such a conference, briefly reported elsewhere, as that which was held last week in London by the National Association for the Prevention of Consumption and other Forms of Tuberculosis forms a very good example of what we mean. Administrative action in regard to matters of public health, if it is to be effective, requires a preliminary education of public opinion as a necessary antecedent. A great deal of useful educational work with this object in view has been carried out in regard to tuberculous diseases by members of the medical profession, public health authorities, philanthropic agencies, and individuals. The most healthy sign of the awakening of the public interest in regard to these matters is the attention which is now being given by statesmen and municipal authorities to them. The practical measures which are being organised to deal with tuberculosis are probably to be regarded as the outcome of the fact that everyone now knows that consumption, the commonest form of tuberculous disease, is communicable through the agency of dried sputum from cases of this disease. That one result of this knowledge is a tendency to shun the unfortunate sufferer from this disease is a regrettable though intelligible fact. If it can be still further brought home to the public generally that the disease is in a very large majority of cases curable if recognised early and appropriately treated, and that it is preventable and not an inevitable result of family predisposition, there can be little doubt that an effective and comprehensive campaign both curative and prophylactic will soon be inaugurated. There are not wanting encouraging indications that some such effective mechanism may shortly be evolved. The recent Order of the Local Government Board in regard to the notification of patients suffering from pulmonary tuberculosis is one step forward. The publication of the final report of the Royal Commission on Tuberculosis (Animal and Human) has drawn attention in no uncertain manner to the dangers of milk from tuberculous cows, even in the absence of tuberculous disease of the udders. There are reasons for hoping that before very long this will result in the enactment of measures to secure a purified milk-supply. Again, the proposals in the National Insurance Bill now before Parliament to devote a large capital sum and an annual contribution to the erection and maintenance of sanatoriums are striking evidence of the recognition of the importance of this disease in regard to the industrial population. The prominence which is now given by the lay press to these questions, the establishment of dispensaries, the educational and nursing work carried out by health visitors and trained nurses are all useful agencies in the campaign, and afford further indications of public interest in it.

It will be seen that the annual conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis came at an opportune moment, and it was certain that it would secure for its deliberations and recommendations considerable public notice. Not a few of the speakers emphasised the importance of the diffusion of knowledge in regard to tuberculosis. Mr. JOHN BURNS, in a forcible and practical opening address, stated that the "man in the street" was now determined to coöperate with the medical officer of health, the town and county council, and the private practitioner in the important work of the campaign against tuberculosis. He gave statistics in regard to the death-rate from tuberculosis, which showed how marked was the decline of the disease during the last 50 years. He pointed out the significance of the fact that the diminished incidence of consumption was concurrent with increasing sobriety, better housing, growing education, and the social and moral elevation of the people. Professor SIMS WOODHEAD, in advocating the

inclusion of hygiene in the curriculum of secondary schools, as well as in elementary schools, maintained that the education of the public by means of exhibitions and lectures and other methods was one of the most important developments of modern hygiene and medicine. Dr. F. C. SHRUBSALL stated that the Education Committee of the London County Council had decided to provide a course of lectures for teachers on the manner in which they could assist the anti-tuberculosis campaign. Sir WILLIAM OSLER believed that the public were now alive to the necessity for dealing with this insidious disease in its early stages. He reviewed the various methods of treatment, and maintained that since not more than 10 per cent. of the cases could be treated in sanatoriums, our energies should be directed very largely to the elaboration of the successful home treatment of the disease. Among other important subjects discussed at the Conference were the value of sanatorium treatment, the educative value of sanatoriums, after-care, schools for tuberculous children, and the segregation of advanced cases. All of these matters are of such real importance in regard to the treatment and prevention of the disease that it is to be hoped that the reports in the lay press will be widely read. They were in many journals so full and good as to relieve us of the responsibility of more than indicating the views of the various speakers.

The proceedings of the Conference show how many and varied are the agencies which are being employed in the campaign against tuberculosis. What is now needed is the coördination and extension of these agencies together with the necessary financial assistance to enable them to be effectively employed. In matters concerning the public health, where costly financial questions are concerned and where certain official interference with the personal liberties and conditions of the patient is involved, such as notification and possible segregation, Parliamentary action can hardly move in advance of public opinion. Indeed, it is liable in some instances to be deferred until public pressure enforces it. It is obvious, therefore, that the coöperation of the public with the medical profession in this campaign is the essential factor necessary for its success. Both Mr. JOHN BURNS and Mr. WALDORF ASTOR pointed out the economy that would be effected in regard to the expenses of the Poor-law, and in disablement benefits, if the disease could be stamped out or even satisfactorily dealt with. There can be no doubt that the immediate outlay involved would soon be compensated by the better health of the community, and we hope that the pressure of public opinion will accelerate the achievement which the medical profession have so constantly in view.

The Medical Officer of the London County Council.

THE announcement that Sir SHIRLEY F. MURPHY will vacate his post as chief medical officer of health to the London County Council at the end of the present year, which was made at the meeting of the Council on Tuesday last, will be received with universal regret. Men occupied in every variety of medical inquiry have long become accustomed to rely upon the central medical department of the metropolis for information as to the prevalence and prevention of disease and for guidance on every variety of administrative question relating to public health in London. Many will find it difficult to realise that it is hardly more than 20 years since the department was created, and that before that time there was no authority charged with the care of the public health of London as a whole. Sir SHIRLEY MURPHY, the first medical officer of health of the London County Council, was appointed when that body came into existence in 1889, and his well-known series of annual reports began in 1892. The period which has since elapsed has been eventful in the sanitary history of London. Large political changes have been made in the units of administration, and a mass of special legislation has been enacted at the instance of the Council in which sanitary reforms have had to be adapted to the complicated system under which the metropolis is governed. New matters in abundance have been brought within the province of public health administration, while older problems have needed reviewing and developing as epidemiological knowledge has increased and methods of prevention have improved. In all such questions it has been of first importance that the London County Council should have expert advice of the highest order and obtain from its medical officer of health a balanced judgment and continuity of policy. It is only necessary to consider how a great elective administrative body may be divided by conflicting interests, urged by enthusiasts or "anti-" organisations or restrained by reactionaries, to realise the magnitude of the service which Sir SHIRLEY MURPHY has rendered in these respects. We do not attempt here to particularise the sanitary reforms of recent years—for example, the housing of the poor, the organisation of the control over infectious diseases, or the better supervision of milk and food supplies—which have so largely been due to Sir SHIRLEY MURPHY'S initiative or guidance. A catalogue of these would fill many columns; it is sufficient to say that to-day the sum of all his activities is a healthier London; no greater commendation could be given.

The report presented by the General Purposes Committee and adopted by the Council on Tuesday contained a striking testimony to the worth of Sir SHIRLEY MURPHY'S services. The committee's report was also memorable in another respect. It recommended a new policy, which has now been accepted by the Council, for placing the whole educational medical service, as well as the general work of the public health department, under the control of the medical officer of health of the county, who will thus in future be directly and primarily responsible for administration of both branches, and for the advice given to the Council in matters relating to the medical examination and after-treatment of school children, as well as in other subjects. Readers of THE LANCET will not need to be reminded of the prolonged controversy which is terminated, we hope finally, by this important decision. Hitherto, the association of the county medical officer of health with the direction of the medical work of the Education Committee of the Council has at best been merely nominal; it may be said that in practice there have been two medical services—one under the county medical officer of health, the other under the medical officer (education). The failure which has notoriously occurred in the

organisation of the inspection of London school children and the arrangements in connexion with "after-treatment" must in large measure be ascribed to the repeated neglect of the Council in the past to utilise the great administrative experience which could have been made available had the medical service been consolidated under the county officer. When the failure had to be acknowledged, and a new organisation became imperative to meet the demands of the Board of Education, the Education Committee of the London County Council proposed a still more retrograde policy, which would have resulted in the care of the health of the school children of London being divorced from that of the rest of the population and handed over to the lay head officer of the Education Department, to whom the medical officer (education) would have been responsible. In emphasising the obvious objections to this policy in our issue of Feb. 25th we ventured to prophesy that it could not be maintained, and that the alternative of amalgamation of the medical services under one medical head must soon be accepted. The decision to which the Council has now come will, we believe, be welcomed by all who have the best interests of the public health service at heart, and who have viewed with dismay recent tendencies to regard the school child as an article strictly preserved for subjection to "educational" authority, even in such matters as the prevention and treatment of disease. It is greatly to be regretted that the large reorganisation which will now be necessary is not to be undertaken by Sir SHIRLEY MURPHY himself. But obviously the task is one which will require sustained and continuous work for many years, and the rules for compulsory retirement on the attainment of the age limit are strictly guarded and enforced. The Council, however, "so that his successor shall have the advantage of his long experience, particularly in the details of medical administration," have wisely made special arrangements to retain Sir SHIRLEY MURPHY'S services in a consultative capacity.

Annotations.

"Ne quid nimis."

SUPERANNUATION FOR MEDICAL OFFICERS OF HEALTH.

A BILL to provide for the superannuation of medical officers of health in England and Wales was introduced into the House of Commons on July 20th by Dr. A. P. Hillier, supported by Sir Clement Hill, Mr. John Robertson, Mr. Henry Forster, Colonel Hickman, and Mr. Barnes of the Labour party. All medical officers of health, whether devoting their whole time to the duties of their offices or not, are included in the provisions of the Bill, which is on a contributory basis. The scale of contributions is equal to 2, 2½, or 3 per cent. of each year's salary, according to whether the contributor has been five years, 15 years, or more than 15 years in office respectively. The superannuation allowances are the same as those provided by the Poor-law Officers' Superannuation Act, 1896, namely, one-sixtieth of the average salary of the final five years for each year of service, with this important addition, however, that after ten years' service an additional five years are added for the purpose of computing the allowance. Provision is made in the Bill for the return of the contributions under certain contingencies, and within three months of the commencement of the Act those medical officers of health whom it concerns may contract out. The superannuation allowances are to begin after the completion of an aggregate service of 35 years, or upon the attainment of 60 years, or after disablement sufficient to prevent the officer discharging his duties with efficiency. When an officer retires after serving more than one authority his superannuation allowance will be paid in suitable proportions by each of those authorities, thus avoiding the position created by the Poor-law Superannuation Act in which the whole of the allowance is paid by the authority whom the officer last served. Some of the metropolitan borough councils and a few authorities in the provinces have already made provision for the superannuation of their officials, and if the Local Government Board certifies that such provision is adequate these authorities will be exempt from the provisions of the Bill.

"THE PRIESTHOOD OF SCIENCE."

THE notion that schools of thought have at various times in the world's history deliberately falsified fact upon an established plan is one that fascinates a certain class of mind. In an extreme form this notion appears in the writings of the late Edwin Johnson, that almost insane doubter, who in his remarkable "Growth of English Culture" maintains the thesis that English history was the conscious invention of Benedictine monkish writers, who issued their fabrications at the time of the revival of letters, and that consequently half the time-honoured chroniclers, such as Gildas, Nennius, Bede, and Giraldus Cambrensis, are mystic persons, monastic deadheads, so to say, and the other half, such as Camden and Baker, are the dupes of the monks or myth-mongers. It is clear that if English history be a mere invention, then the history of English science and medicine is badly shaken, too. And not to confine ourselves to England, is it not possible that the School of Salernum is of the nature of myth? The idea that in the worlds of science and medicine people write to order and in obedience to a scheme laid down at some obscure and undesignated headquarters has for years obtained among a certain order of mind. We hear perpetually of the "Priesthood of Science," as though science were merely an affair of dogma and not of ordered fact, open to almost hourly revision. We hear, too, from those who in their heart of hearts do not like science, that it is "exploded"—that is the word—whenever such a revision has perforce to take place. We have heard an accomplished High Church Christian-Socialist clergyman maintaining before a completely ignorant and applauding audience that the queer Lenten mystery-play, *Everyman*—a dramatic performance at which it is customary for the audience to behave as though they were at a prayer meeting—has once for all unmasked science. It is amusing to think of Newton, Darwin, Lister, Tait, and Kelvin as bowled down by a crabbed miracle-play, chiefly concerned with the crudities of good and evil in the life of an individual in the Middle Ages. Darwinism was, of course, in the opinion of these credulous and would-be critical persons, "exploded" when Weismann came to the fore, and when Mendel was re-discovered by Professor Bateson and others. The young university man, untouched by scientific training and ways of thought, will maintain that Professor Bateson's writings prove that there is no sort of rule or law in descent. "You plant two peas," cries our eloquent young friend, completely dominating an applauding dinner-party audience, "and one of your peas

comes up six feet high and one is only above ground. And that's what Bateson says. And what becomes of your Darwin?" To verbal fireworks such as these the popular fallacy of "the Priesthood of Science" owes its inspiration. It is not, indeed, probable that at any time, even in ages of cynical obscurantism and ignorance, were men induced to form themselves deliberately into schools of deceit. It is almost to the credit of human nature that a lie is not consciously propagated. Man is too uninventive, and testimony is too scattered and independent, to admit of the consistent propagation of lies. This matter has been acutely discussed by Professor Haddon in his admirable little "History of Anthropology" recently published. But if planned mendacity of a whole school is an impossibility, we admit that in certain given surroundings, by means of traditional influences or through the compiler's indolent habit of copying down whatever he finds written by a previous scribe, many fallacies have enjoyed a vast vogue. Thus, in the age when phlebotomy was paramount in medical practice, medical writers undoubtedly propagated the fallacy of excessive bleeding by dint of copying its praises out of previous text-books. The public were impressed by the fact that all medical writers were in favour of a course of which the wisdom was later shown to be doubtful. Here, when the wisdom of blood-letting was impugned there arose, quite naturally, the idea of a medical conspiracy (a "Priesthood of Science," as men now name it), and such ideas, again, were the ancestors of the modern *cliché*, which represents science as a fallible and obscurantist conspiracy, at any moment liable to explosion.

THE PREVALENCE OF INTESTINAL WORM-INFECTIONS AND THEIR EFFECTS ON HEALTH.

THE frequency with which the natives of the tropics suffer from intestinal parasites, and the debilitating influences which such infections have upon the health of those engaged in industrial labour, make the subject one of much importance both from the medical and the economic point of view. Any investigation which helps to throw light on the causation or prevention of intestinal parasitism must be welcomed not only by the members of our profession who practise in tropical countries, but also by the employers of native labour in those regions. Among other places where such investigations have been carefully carried out we may mention the Philippine Islands, where the American experts attached to the Bureau of Science have done much good work in this direction. The latest of these contributions is published in a recent number of the *Philippine Journal of Science*, to which Dr. David G. Willets furnishes a paper entitled "A Statistical Study of Intestinal Parasites in the Tobacco Hasciendas of the Cagayan Valley," which he had read early in the present year at a meeting of the Manila Medical Society. It appears that this inquiry was undertaken by Dr. Willets with a view to determine the frequency and medical significance of intestinal parasitism in certain parts of the Island of Luzon, with particular reference to the incidence and significance of hookworm infections. The area selected for the investigation was one in which the native population was engaged almost entirely in the cultivation of the tobacco-plant. The fæces of 4278 workers were examined, and no fewer than 3656, or 85·46 per cent., of them were found to be infected by parasitic worms. It may be mentioned that the conditions under which the stools of the natives were examined were not favourable for finding the presence of amœbæ or flagellates, hence no systematic search was made for these two classes of organism, but it is believed that both of them are comparatively infrequent in the locality in question. Of the 4278 persons examined, 2038, or 47·64 per cent., had a single infection, usually either ascaris or ankylostoma; 1444, or 33·75 per cent., had a double infection, roundworms and hookworms being generally present together; 168, or 3·93 per cent., had a triple infection, mostly consisting of the two kinds of worm already mentioned, along with trichuris; while 6 persons, or 0·14 per cent., suffered from a quadruple infection. Ascaris was found in 2653 instances, or 62·04 per cent. of those examined; ankylostoma in 2326, or 54·37 per cent.; trichuris in 342, or 7·99 per cent.; while oxyuris was discovered in 64 instances, or 1·50 per cent.; and tænia in 59 cases, or 1·38 per cent. The other infections more rarely met with were hymenolepis, 5 cases; strongyloides, 4; and trematodes 1 instance. Ascaris was more frequent in females than males, but, on the other hand, ankylostoma was found more often in males than females; this may be accounted for by the fact that more males work in the fields, where presumably they contract the infection. As to the effects produced by these parasites on the health of the population, it is said that the people as a class are anæmic in appearance and apathetic in demeanour, conditions not infrequently met with in pronounced ankylostomiasis, as, for example, among the "poor whites" in certain of the Southern States of North America. Dr. Willets, however, is careful to point out that among the Filipinos on the Island of Luzon other local factors probably act in lowering their vitality. Among these, apart from the climate, may be mentioned too early marriages, and among the women too rapid child-bearing, poor quality of the food, excessive smoking of tobacco begun at a very early age, habitual indulgence in alcoholic drinks, also begun at an early age, and the prevalence of tuberculosis. It is unfortunate that the circumstances of the inquiry did not permit of a clinical study of each case and the collection of evidence as to definite injury, if any, to health inflicted by intestinal worms. Dr. Willets ventures the opinion that ankylostomiasis when uncomplicated by the presence of any other species of worm may be of less significance than cases in which two or more parasitic infections occur together in the same person. Much improvement in health is known to follow upon treatment which clears out all parasitic worms from the alimentary canal. We are informed on good authority that where worms are present in the intestine abrasions of the lining membrane are apt to occur, and that bacteria from the contents of the gut are liable to penetrate from these abrasions into the deeper tissues, giving rise to dangerous inflammations and septicæmias, or to perforation. At present the opinion seems to be that the chief influence of intestinal parasites is in lowering the vitality of the host and rendering him more susceptible to other diseases. Dr. Willets quotes the remarkable results which have been obtained in the Bilibid prison, Manila, subsequent to the inauguration of measures for securing systematic examination of the prisoners' fæces to detect the presence of parasites, followed by medical treatment when necessary. Before the supervision of the prison was taken over by the Bureau of Health (of which Dr. V. Heisser is now the distinguished director) the mortality of that institution had attained the appallingly high rate of 238 per 1000. After certain sanitary improvements had been carried out by the Bureau of Health the death-rate fell to 75 per 1000, below which it seemed impossible to reduce it. After the measures mentioned above for detecting intestinal parasites and for treament had been carried out, the mortality sank to the comparatively low rate of 13·5 per 1000. This decreased mortality was not at first general all over the prison, but was observed to follow, section by section, the application of the systematic treatment for intestinal parasites among the inmates. It cannot therefore be disputed that this dealing with worm

infections was largely instrumental in effecting a reduction in the death-rate of Bilibid prison. As regards the prevention of parasitic worm infections among the workers in the tobacco plantations of the island of Luzon, this, as elsewhere, seems largely to depend upon the provision of proper and sufficient privy accommodation for the people, so that indiscriminate defæcation, and consequent contamination of the surface of the soil by infected human excrement, may be avoided.

THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

THE recent and sadly sudden death of Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., Sanitary Commissioner with the Government of India, has been made the occasion of an appeal by the *Times of India* for the abolition of this high appointment on the grounds that it is an appointment which should never have been created. Our contemporary says:—

> It is a post which owed its existence to the wave of centralisation which afflicted the Government of India and fastened upon us unnecessary offices like the Inspector-General of Excise, for which there was not the slightest justification. It is an appointment which should never have been created. If it had been created it should have been filled by a practical sanitary officer, not by one with no special qualifications for the office. In effect it has been impossible to trace any advantage from the establishment of the post, and it set up no little friction between the Government of India and Provincial Governments, and later between the responsible adviser of the Government of India on medical matters and a junior officer. Now that it has been rendered vacant it should be allowed to die a natural death, as the Inspector-Generalship of Excise should too. If, however, it is found that in view of the increased activity in sanitary matters which is being displayed the work has grown too heavy for the Director-General of the Indian Medical Service to discharge unaided, the difficulty could be met by giving him a secretary solely for sanitary work.

We do not agree with the assertions above quoted, and we believe that such a step as the abolition of the Sanitary Commissioner with the Government of India would be a retrograde one. At no period in the history of Indian sanitation is such an appointment of more importance than at the present, and instead of reducing its status it might be well if the Government of India would appoint a surgeon-general of its Indian Medical Service to act as deputy to the Director-General, as has been carried out at the War Office for the British service. This would assure not only freedom from friction but an increased status to the incumbent of the post.

ALCOHOL AND INSANITY.

THE July number of the *British Journal of Inebriety* contains, in addition to a short introductory address by the President, Dr. Theo. B. Hyslop, on the Work of the Society for the Study of Inebriety, a valuable and interesting paper by Dr. F. W. Mott on Alcohol and Insanity. Dr. Mott has already dealt with this question in several communications, notably in a paper in the *Archives of Neurology* (Vol. III.), in a *rapport* to the International Congress of Psychiatry at Amsterdam on the Psychoses of Chronic Alcoholism, and in a paper on the Nervous System in Chronic Alcoholism read before the Pathological Section of the British Medical Association last year. In this further contribution to the literature of the subject he reiterates the views expressed in his earlier papers, and furnishes additional statistical evidence in their support. In opposition to what used to be, and in some quarters is perhaps still, the current opinion, Dr. Mott maintains that alcoholic excess is not a very important cause of insanity, and he holds that the exaggerated estimate formerly entertained of its influence in this respect is due to the failure to discriminate between what is really the result of alcoholism and what is innate and due to inheritance, the confusion arising from the fact that intemperance is so frequently an early, possibly the earliest, sign of mental breakdown. Arguments in favour of this view may be found in many different orders of facts, but the most conclusive are unquestionably those which Dr. Mott has drawn from the data of pathology. He has been able to compare the records of 2000 post-mortem examinations at Charing Cross Hospital with the records of a similar number at Claybury Asylum, with the result that, whereas in the hospital series there were 110 cases of cirrhosis of the liver, 60 per cent. with ascites, in the asylum series there were only 23 cases of cirrhosis, and among these only one case with ascites. These figures are hardly reconcilable with the view that alcohol is the important factor that asylum statistics appear to show. And, further, Dr. Mott points out that with regard to this matter the clinical facts agree with the pathological evidence, for the instances of mental affection of distinctively alcoholic character and resulting from the continued direct or indirect action of alcohol upon a relatively healthy brain are comparatively few, while the cases of insanity with a history of alcoholic excess, but occurring in persons of innately defective organisation, are numerous, and, moreover, in their clinical features are hardly, if at all, distinguishable from insanities occurring in abstainers. On the vexed question of the effects of parental alcoholism on the offspring Dr. Mott takes the eminently sane view that, while it is contrary to reason to suppose that the germ cells can remain unaffected in conditions involving prolonged toxic influences, yet it is necessary to have data of a more precise kind than any so far produced before we can attempt to give a definite estimate of the extent of these effects. None the less, it is Dr. Mott's considered opinion that parental alcoholism does undoubtedly lower virility, and that, at all events, when continued through successive generations, it must result in physical and mental degeneracy. The whole article may be commended as a most admirable and temperate statement of a question which is usually considered in a spirit to which these adjectives would certainly not be applicable.

THE ANNUAL DINNER OF THE MEDICO-LEGAL SOCIETY.

THE Insurance Bill naturally formed the subject of most of the speeches and conversation at the annual dinner of the Medico-Legal Society at the Holborn Restaurant. The dinner was held on July 20th, under the presidency of Sir John Tweedy. Among those present were Earl Russell, Mr. Rigby Swift, M.P., Sir Henry Morris, Sir William Collins, Sir Frederic Hewitt, Mr. Charters J. Symonds, Dr. W. H. Willcox, Dr. F. J. Waldo, Mr. C. Herbert Smith, and Mr. Walter Schröder. Mr. Rigby Swift, in proposing the toast of "The Medico-Legal Society," said that the society was an evidence of the interdependence of two great professions. He recalled his early memories of the old-fashioned family doctor, who was not merely a doctor, but the true friend and confidential family adviser generally. As to the legal relations of medical men, he had almost invariably found the medical profession earnestly endeavouring to assist in the administration of justice. Of late, medical men had more than ever been engaged in the courts, especially under the Workmen's Compensation Act, and now they seemed likely to have still more official work under the Insurance Bill. There was no doubt that the doctors would earnestly coöperate in such a movement for the public good if only they were offered fair terms: so such terms must be inserted in the Bill as would allow them to retain their independence and afford them adequate remuneration. Sir John Tweedy, in replying, spoke of the growth of the society both in numbers and in importance. He earnestly wished the legal members a continuance of their prosperity, because, if the Insurance Bill passed in its present form, a large part of the medical profession would find their occupation gone, and they would have to look to their prosperous

legal brethren to pay the fees of the pious but impecunious doctor. Sir William Collins, in proposing "The Guests," said that both the critics and the supporters of the Bill felt that legislation was proceeding too quickly, for it was not a subject that lent itself to hustling. The society might prove of great use to the officers of the Crown by helping the discussion of the matter in mixed meetings of lawyers, medical men, and laymen. The discussion of the Bill made it clear that almost every detail involved a principle, and the fact that these principles had not been thoroughly threshed out by those affected rendered the ultimate form of the measure uncertain. Its too precipitate passage could result only in considerable resentment. Mr. C. Herbert Smith proposed the health of Sir John Tweedy, who, in replying, mentioned that the Royal College of Surgeons of England had acceded to the request of the society to put aside a part of its museum for a medico-legal museum, and he appealed to the members to present specimens, so that in time they might have a medico-legal museum that should rival the famous museum at Edinburgh.

THE RARITY OF TABES AND GENERAL PARALYSIS IN THE NEGRO.

THE rarity of the so-called parasyphilitic affections among members of the coloured races has often been commented on. Among the numerous peoples of Africa, black and brown alike, syphilis is very rife, but tabes, according to the evidence of many observers, is most infrequent. In the coloured races of the United States it is much less common in the negro than in the mulatto, and still less in the latter than in the white. In view of the almost universal prevalence of syphilis among negro races this peculiarity is the more striking. Neurologists and syphilographers are wont to assert that untreated syphilis is prone to terminate in systemic degenerations of the central nervous system, yet the temperament of the negro is such as to render most attempts at treatment of syphilis futile, if it is not neglected altogether. In spite of these facts, and notwithstanding that he is also addicted to alcohol, the negro is curiously immune, and we must suppose that he is protected by something native to his organism. Dr. E. M. Hummel of New Orleans, who has had abundant opportunity of observing the effects of syphilis in a coloured population, reports in a recent number of the *Journal of the American Medical Association* a case of tabes in a full-blooded negress, aged 27. The menses began at the age of 12 and were apparently normal. One and a half years later the patient, then a girl of 13½, bore a healthy child, who is living and well. A dead child was born 3½ years later, and a miscarriage occurred 2½ years subsequently. It seems obvious that between the age of 14 and 17 the patient acquired syphilis; in any case the cardinal symptoms of tabes were established three years before she came under observation. Dr. Hummel comments on the great rarity of the condition, and refers to a point which has often attracted his attention. The subjects of tabes are for the most part from a class of the community who work assiduously, both with mind and body, who are apt to allow the worries of life to impress them unduly, who, in a word, present temperamental and nervous defects that seem to exert a certain influence in lowering powers of resistance. But the negro is notoriously a child, and to this day, thanks to his primitive limitations, still enjoys what Dr. Hummel calls the "childlike euphoria of a care-free life." Another interesting and curious fact has been noted by Dr. Weisenburg of Philadelphia in this connexion. He has remarked that in his experience tabetics nearly always have blue or grey eyes, and otherwise blonde complexion. In the neighbourhood of New Orleans people of Latin descent, nearly all brunettes, predominate, and Dr. Hummel has found that they are less prone to tabes than blondes. If the observations are of any significance they may mean that constitutions associated with a degree of pigmentation of the skin are somehow less liable to the toxin of such a disease as tabes. Biometricians and Mendelians are now working alike on lines which may here assist the clinician.

BRITISH PHARMACEUTICAL CONFERENCE.

THE British Pharmaceutical Conference, which met this week at Portsmouth, is approaching the fiftieth year of its existence. Since it came into being 48 years ago the Conference has contributed very largely to the advancement of pharmaceutical science, and the character of the papers contributed at this week's meeting indicates that it continues to fulfil the useful purpose for which it was founded. The subjects, which were for the most part of a purely pharmaceutical nature, were treated in a practical and concise manner, there being an entire absence of those lengthy and inconclusive communications which sometimes occupy considerable time at meetings of this kind. The papers are alluded to in some detail elsewhere in this issue, but special attention may perhaps be usefully drawn to one or two of outstanding interest. The variability in the therapeutic value of thyroid preparations is frequently a source of disappointment to medical practitioners, and the suggestion that an iodine standard should be fixed will be welcomed. Another medicinal product which varies considerably in activity is extract of Indian hemp, and no doubt the compilers of the British Pharmacopœia will have their attention directed to the suggestion that the official process of preparing this product should be altered; for the difference in the value of the extracts on the market is certainly unfortunate both for the medical practitioner and his patient. The compilers of the Pharmacopœia will also find some suggestive material in the paper on Podophyllum Emodi; the Indian podophyllum has been recognised in the Indian Addendum, and the question is under consideration whether it should be included in the forthcoming edition of the Pharmacopœia. The paper on opium assay by two well-known collaborators constitutes a valuable addition to pharmaceutical literature, and we much hope that they will find time to continue their investigations of this important subject. The results of the analyses of diabetic foods certainly demonstrate the desirability of placing some kind of restriction on the sale of this class of foodstuffs. In addition to the discussions of scientific subjects, matters of a more general character such as the sale of secret remedies and the position of the pharmacist in relation to the National Insurance Bill were considered.

GENERAL SUBCUTANEOUS ŒDEMA AS A FAMILIAL AFFECTION.

THE series of cases of general subcutaneous œdema associated with diarrhœa occurring in one family, recorded by Dr. F. H. Edgeworth on p. 216 of THE LANCET of July 22nd, constitutes a remarkable, if not a unique, contribution to the literature of familial affections. Of six infants born of healthy parents, all but one have died in the first few weeks or months after birth with general œdema following upon diarrhœa. The surviving child, now 2½ years old, also suffered from slight diarrhœa and œdema of the face during the second and third months of his life. Two of the cases have been carefully observed by Dr. Edgeworth, who found no evidence of renal disease during life or post mortem, and in a third case observed by Dr. G. S. Page the urine was normal. In one of the cases there was some increase in the coagulation-time of the blood, as estimated by Wright's method. Dr. Edgeworth discusses the nature of his cases in his interesting paper. The

occurrence of nephritis was definitely excluded in the two cases which came to necropsy. He gives reasons against regarding them as examples of œdema neonatorum which seem to us convincing. He suggests that the immediate cause of the œdema in his cases may have been the action of poisons absorbed from the alimentary canal, but he makes the further suggestion that there may have been an inborn defect in the walls of the capillary blood-vessels, rendering them more susceptible to poisons circulating in the blood than the capillaries of normal individuals. The explanation sometimes given of functional or orthostatic albuminuria is somewhat similar—viz., that the kidney in these cases is more permeable to the protein molecule than normally, and that this permeability is more easily influenced by slighter causes. Dr. Edgeworth points out that his suggested explanation is capable of being extended to include certain other conditions of œdema of obscure nature, such as general dropsy of the fœtus, apart from anatomical defects in the placenta and fœtal organs, hereditary trophœdema or Milroy's disease, and also the susceptibility of some individuals to erythemata and urticaria. There can be no doubt that the careful recording of cases of familial diseases is bound eventually to enlarge our knowledge of many obscure conditions of inherited disease and defect, and Dr. Edgeworth's interesting note may serve to bring to light similar cases to his own. It will be interesting to know the future history of the surviving case, more especially as to whether attacks of diarrhœa are associated with œdema in this child.

BRITISH DENTAL ASSOCIATION: ANNUAL MEETING.

FOR three interesting reasons the annual meeting of the British Dental Association, to be held next week at the University of London, South Kensington, will have special importance. It will be the first dental gathering that has taken place at the University; the attendance will certainly reach the highest figure on record, as the membership of the Association has increased to over 2000; and this year, by a happy coincidence, the International Dental Federation is also meeting in London. Both the Federation and the Association will have Mr. W. B. Paterson, F.R.C.S., L.D.S., for President. Some distinguished foreign dentists from America and the continent are taking part in the opening session of the International Dental Federation at the Royal College of Surgeons of England on Tuesday, August 1st, when they will be welcomed by the President, Sir Henry T. Butlin. A banquet follows in the evening at the Hotel Cecil. On Wednesday Professor Jessen of Strasburg presides over the Hygiene Commission, and Dr. E. C. Kirk of Philadelphia over the Education Commission, both meetings being at the University. The British Dental Association begins its meeting with a reception and dance given by the Metropolitan branch at the Hotel Cecil on Wednesday night. On Thursday the annual meeting of members takes place at the University, when the new President (Mr. Paterson) and some honorary members will be inducted. Thirteen papers will be discussed on Friday, including contributions on School Dental Treatment and its Results, by Mr. A. E. Baker, Mr. C. E. Wallis, and Mr. G. Cunningham (Cambridge); Bread-stuffs and the Experimental Production of Dental Caries, by Mr. A. Hopewell-Smith; and Tuberculosis and its Bearing on Dentistry, by Dr. Noel D. Bardswell, medical superintendent of the King Edward VII. Sanatorium at Midhurst. Some 27 demonstrations will occupy Saturday morning and afternoon, and a number of clinical cases will be on view. A museum, illustrating affections of the periodontal membranes, will be arranged in the entrance hall of the University. On Thursday the annual dinner of the Association will take place at the Hotel Cecil, and on Friday a conversazione will be held at the Royal College of Surgeons of England. Lunch will be provided each day in a marquee in the University quadrangle. The foreign visitors and the members of the Federation will be the guests of the Association at its meetings and social functions.

SCLEROTIC OR "WOODEN" THYROIDITIS: RIEDEL'S DISEASE.

IN 1896 Riedel published a description of two cases of a condition to which he gave the name "eisenharte strumitis," and in subsequent years observations of a similar nature were recorded by the same writer and by others, bringing the total number of cases up to 13. To these three more have been added by MM. X. Delore and H. Alamartine, together with a summary of the whole subject, in a paper in the *Revue de Chirurgie* of July 10th From this summary it appears that the clinical picture is remarkably like that of thyroid cancer, though in one of Riedel's cases a child of four was attacked. The commonest age, however, is during the fourth decade. More than half the recorded cases have been in men. A distinctive feature is the rapid evolution of the disease. In a few months, or even weeks, a tumour develops which produces serious effects by compression of the trachea and the recurrent laryngeal nerves; the laryngeal palsy is accompanied by dangerous paroxysms of dyspnœa. On the other hand, it is unusual to find any evidence of pressure on the sympathetic nerves or upon the œsophagus. The tumour is diffuse, involving the whole gland; it is extraordinarily hard and firmly fixed to surrounding structures. Its surface is smooth and does not adhere to the skin. The neighbouring lymph-glands do not show any striking enlargement. To the naked eye the diseased area appears whitish and homogeneous; it is very hard to cut. Microscopically nothing is found except a free formation of dense fibrous tissue of an inflammatory type; not even at the edge, where the disease is binding the thyroid gland to the neighbouring muscles and fasciæ, is there the least sign of malignant disease. It is possible that in some of the recorded cases either tuberculosis or syphilis has played a part; but in the majority of instances no definite cause could be named. Fortunately, this distressing disease seems to be amenable to treatment. Several cases have been successfully treated by thyroidectomy; but this is not to be advised, as the free adhesion to surrounding tissues greatly impedes the operator and exposes the patient to the dangers of hæmorrhage. Liberation of the trachea by cuneiform resection of the thyroid isthmus gives speedy relief to the symptoms, and is usually followed by a rapid disappearance of the disease. If there are no severe pressure symptoms milder measures may suffice; and especially radiotherapy should be tried, for the X rays appear to have an almost specifically curative effect.

THE London County Council on July 25th resolved: "That Section 55 of the Public Health (London) Act, 1891, with respect to the notification of infectious disease shall apply in the administrative county up to and including March 12th, 1912, to acute polio-myelitis or acute polio-encephalitis." The Public Health Committee informed the Council that the disease known by these names had engaged attention in recent years in Europe, especially in Norway and Germany, as well as in the great cities of the United States of America. The disease, which occurred principally among children, proved fatal in about 11 or 12 per cent. of those attacked, and was responsible for the production

among those who survived of infantile paralysis. In the northern hemisphere occurrence of the disease was noticeable mostly in the summer months, and as in some instances multiple attacks had occurred in the same households, schools, or streets, these had been attributed to infection from one person to another. Early this year the Royal College of Physicians of London asked the Council to make the disease notifiable, and the Public Health Committee thought the request should be acceded to, as there was a possibility of cerebro-spinal meningitis being mistaken for polio-myelitis.

THE REORGANISATION OF PUBLIC HEALTH ADMINISTRATION IN THE COUNTY OF LONDON.

THE General Purposes Committee this week reported to the London County Council on the subject of the reorganisation of medical inspection and treatment and school medical work generally, and we are glad to observe that the committee declared itself strongly in favour of the policy adumbrated in THE LANCET on several occasions—viz., of coördinating all this work in the existing public health administration, instead of, as the Education Committee proposed, placing it under the control of a layman—the education officer, Mr. Blair.[1] The proposed reorganisation will hasten the retirement of Sir Shirley Murphy, but the Council will retain his services in a consultative capacity for at least two years.

By way of preface the General Purposes Committee remarked that from among the otherwise conflicting views held on this subject by the committees affected, one fact clearly emerged, and that was that the present arrangement by which medical inspection was dealt with in the Public Health Department and medical treatment in the education officer's department could continue no longer. The question, therefore, resolved itself into the fundamental one, Should the whole of the work be entrusted to the department which dealt with medical work and had for its chief officer a medical man, or should it be included in the department of the education officer. On this point suggestions were invited from the officers concerned. The principle underlying the education officer's scheme was expressed by him when he suggested that one officer should be responsible to the Education Committee for the general organisation of every branch of the education service. The principle upon which the medical officer's scheme proceeded was that upon which the organisation of the whole of the Council's work had been based hitherto—viz., that all work executed by the Council, whether administrative or professional, which was involved in the exercise of a particular profession, should be done in the department and under the direction of the professional officer concerned. Thus architectural work in the schools was associated with the other architectural work of the Council and placed under the control of the architect. Education financial work was associated with the other financial work of the Council; education stores came from the General Stores Department; education legal work was dealt with by the Council's solicitor, and so on. On first principles, therefore, it was evident that a natural and proper course was for medical inspection and treatment to be administered in the Public Health Department, in conjunction with the other medical work of the Council, under the control of the professional officer at the head of the medical department. The General Purposes Committee dealt *seriatim* with the principal arguments of the Education Committee in favour of the contrary policy. The Education Committee thought that having regard to the existence of 29 sanitary authorities in London there would be difficulty in placing the school medical work under the county medical officer of health, and that what was especially needed was the coöperation of the 29 local medical officers of health. The General Purposes Committee did not appreciate this difficulty, holding that the desired coöperation was more likely to be secured by the Public Health Department, which was constantly in touch with the local medical officers of health. The Education Committee urged that the school medical work was closely associated with the general activities of the schools and the general machinery of education administration. The General Purposes Committee replied that this was no doubt the case, and whatever system was set up the coöperation of teachers and others would be an important element. There was no reason why such coöperation should not be given to the Public Health Department.

[1] THE LANCET, March 4th, p. 627, and 18th, p. 760.

The Drawbacks to Lay Control.

Special difficulties of organisation and administration were likely, in the opinion of the General Purposes Committee, to arise from the adoption of the Education Committee's proposal. This appeared to be recognised by the inclusion of provisions of an unusual nature—viz., that although the work of the medical officer (education) should be placed under the control of the education officer the former should have the right of access to subcommittees. The General Purposes Committee regarded such an arrangement with considerable apprehension. Apparently it was not intended that medical men should supervise the administrative details of school medical work, although such work must depend to a large degree upon their expert advice. Further, the system under which both the education officer and the medical officer (education) would report upon school medical work would be likely to lead to one of two results—the professional but subordinate officer, feeling the difficulty of his position, would either qualify his reports so as to meet the views of his superior though non-professional head, or he would maintain his views with the result that conflicting advice would be given from the same department. Should a decision be given in favour of the views of the subordinate officer a difficult situation might be created and the responsibility of the head of the department be weakened. It would be impossible under such an arrangement to fix the responsibility for action of any kind, and impossible for committees and for the Council to depend upon receiving the unfettered opinion of the professional officer upon the results of his own work or upon the estimated results of new proposals. Under the Council's system of organisation into departments these difficulties were avoided, as there was only one responsible head, and he was rightly held responsible, not only for the advice he gave, but for the results of following it. His professional reputation was the foundation upon which the Council relied for the best possible advice on matters within his province, and this system had worked with uniform success. It should be pointed out that placing medical inspection and treatment in the education officer's department would involve also the transfer to that department of the other duties hitherto performed by the medical officer (education), including the work of dealing with epidemic and infectious diseases in the schools. It was evident that in this matter prompt administrative action was of first importance, and that the responsibility for such action and its results could rest only with a medical man. In all the circumstances the committee did not think the case could be regarded as so exceptional as to justify such an important departure from accepted policy as the placing of medical expert and administrative work in the department of a lay officer. The often expressed desire of the Board of Education that the school medical officer should be responsible for the medical work could not possibly be secured under such a system, and it was at least doubtful if the Board could approve the appointment as school medical officer of an officer the arrangements for whose professional work were made by another officer entirely independent of him.

Reorganisation of the Public Health Department.

On the fundamental grounds of organisation the proper course was to place medical inspection and treatment of school children under the direction of the county medical officer of health. It was a sound principle that the same health organisation should deal with the individual before, during, and after school age, and that the department which was concerned with limiting the spread of infectious and epidemic diseases in the community should not be precluded from dealing with such infectious diseases in children, whether in school or at home. It followed that the county medical officer of health would exercise supervision over the school medical work generally. This would necessitate a reorganisation of the Public Health Department, and in considering this aspect of the question the General Purposes Committee had had regard to the fact that Sir Shirley Murphy, the

county medical officer of health, would retire under the age limit in less than two years' time. Seeing that the present proposals involved for the Council's medical officer a much enlarged responsibility, and entailed on him the serious and protracted task of amalgamating and coördinating the previously divided functions already referred to, the committee viewed with apprehension the nearness of the retirement of Sir Shirley Murphy. A period of less than two years in which to consolidate, harmonise, and leave in working order functions hitherto divided was all too short for any man, and to call on the present medical officer to undertake the responsibilities, creative and administrative, that were involved, and this on the eve of his departure, would be out of the question unless his retirement were almost indefinitely deferred. The committee had conferred with Sir Shirley Murphy on the subject in all its bearings, and he had stated his desire to place himself in the hands of the Council, so that the reorganisation of the Council's medical work might be effected under the best possible conditions.

The Position of Sir Shirley Murphy.

After careful consideration the committee advised the Council to arrange for Sir Shirley Murphy to relinquish duty as chief medical officer of the county at a date not later than Dec. 31st, 1911, while retaining his services in a consultative capacity for a further period, so that his successor should have the advantage of his large experience, particularly in the details of medical administration. Sir Shirley Murphy entered the London County Council service in 1889, being the first chief officer appointed by the Council and the first medical officer of the County of London. His services to London, said the General Purposes Committee, were in no need of eulogy; the decline in the figures of the death-rate during the administration of the Council testified to the fruitfulness of his labours, while the honour of knighthood conferred upon him in 1904 recorded the high regard in which Sir Shirley Murphy's work in the cause of public health was held. The committee was sure the Council would feel great regret at Sir Shirley Murphy's retirement and would desire to grant him the maximum retiring allowance. Sir Shirley Murphy had served the Council for 22 years, and if his service had come within the Superannuation (Metropolis) Act, 1866, the Council could, by adding ten years to his service, have granted him an allowance of 32 sixtieths of his salary. The committee therefore proposed that the Council should supplement his retiring allowance by such an amount as would bring the allowance up to £666 13*s.* 4*d.* a year—viz., 32 sixtieths of his salary of £1250, and retain his services in a consultative capacity for two years from the date of his retirement at such a remuneration as would not exceed, with the retiring allowance, his present salary. Steps would be taken as soon as possible to fuse the work of medical inspection and treatment in one department under the medical officer before the appointment of the new medical officer.

In conclusion, the committee referred to the anxiety expressed by the Board of Education to know at once the Council's proposals to meet with the present situation. If the present proposal was adopted and laid before the Board in its entirety and followed up with the detailed scheme prepared by the Education Committee for carrying out school medical inspection and treatment,[2] the Board would see that the Council had dealt with the matter in a strong and effective way, and would agree, the committee thought, to accept the Council's proposals as the proper method of organising school medical work. The committee promised to follow its present report with another next week detailing the arrangements to be made consequent on the retirement of Sir Shirley Murphy.

At the meeting of the Council it was evident there was general agreement upon the proposals of the General Purposes Committee and discussion was very short.

An amendment was moved on behalf of the Education Committee that the proposals of the General Purposes Committee should not take effect until Jan. 1st, 1912. It was urged that the Education Committee was under a pledge to the Board of Education to make the scheme of medical treatment effective by October next. If between that date and Christmas the whole of the administrative work was transferred to another department it would seriously handicap the Education Committee in the effort to carry out the wishes of the Board of Education.

The amendment was agreed to and the recommendations of the General Purposes Committee were then approved.

[2] THE LANCET, July 22nd, p. 246.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

THE annual conference of this association took place at the Caxton Hall, Westminster, on July 19th, 20th, and 21st.

Among those present at the opening, when Sir WILLIAM YOUNGER presided, were the President of the Local Government Board (Mr. John Burns), Sir Thomas Barlow, Sir William Osler, Professor Sims Woodhead, Dr. A. Newsholme, Dr. T. D. Acland, Dr. E. W. Hope, Dr. J. E. Squire, Dr. James Kerr, Dr. J. Niven, Dr. J. J. Perkins (honorary secretary of the association), Sir W. Treloar, Mr. Waldorf Astor, M.P., Mr. G. Harwood, M.P., Rev. P. Clementi Smith, Miss MacGaw, and a number of delegates from local authorities and institutions all over the country.

Sir WILLIAM YOUNGER first read the following telegram from the King:—

As patron of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, I congratulate all who will take part in the annual conference which assembles to-morrow. I sympathise deeply with the association's work, so far-reaching in its influence upon the future of the human race. I note with interest the important questions to be dealt with at the conference, and the names of the eminent authorities by whom the meetings will be conducted and addressed.

Opening of the Conference by Mr. John Burns.

Mr. JOHN BURNS expressed his pleasure in attending to open this useful, practical, and human conference, which brought a message of hope to an army of 300,000 people in these kingdoms suffering from tuberculosis in one or another of its forms. The "man in the street" was now determined to coöperate with the medical officer of health, the town and county council, and the private practitioner in this important work. Estimated by its victims tuberculosis in all its forms was a declining disease, and its annihilation ought to be effected in 25 to 30 years till it became only a memory, just as typhus, leprosy, and the plague were now. In ten years consumption had diminished in England and Wales 19 per cent., in Scotland 24 per cent., in Ireland 24 per cent., in Germany 18 per cent., in London 30 per cent., in Berlin 24 per cent., and in Paris only 3 per cent. In 50 years tuberculosis had declined 50 per cent. for all ages, while for the period from birth up to 25 years it had declined 70 per cent. These were encouraging figures. It was interesting to note that the general death-rate also had declined 26 per cent.—27 per cent. in London—and the infant mortality 30 per cent. in the same period. Another significant thing was that coincidently with this decline in the tuberculosis and general death-rates and in infant mortality the national drink bill had diminished from £4 12*s.* to £3 8*s.* 11*d.* per head—a diminution of 25 per cent. in the consumption of alcoholic beverages. The decline of consumption was concurrent with increasing sobriety, better housing, growing education, and the social and moral elevation of the people. To the ratepayer Mr. Burns pointed out that £160,000,000 were paid every year for health and social service. Out of 4000 Poor-law consumptives in Liverpool, 60 per cent. were paupers because they were consumptive. Pauperism and tuberculosis acted and reacted on each other, tubercle being the pauperiser, and pauperism the seed plot of tubercle. He gave a simple illustration as to the value of remedies under the existing law quietly enforced. In 1875 the death-rate in the London garrison of the Guards was 20·4 per 1000 among strong, young, presumably healthy men. To-day it was not more than 3 per 1000, or seven times less. The same barracks were in use, but they were cleaner; the windows were more open, and the soldier had adopted the increasing sobriety of the nation, and this combination had brought about the reduction. Similar figures could be shown for the navy and other sections of society. Another factor in the reduction was high wages if accompanied by wise spending. Mr. Burns warned his hearers against dogmatising on any special means of combating tuberculosis. Much could be done by applying some

of the new methods, but the good could be increased by exhausting all the agencies calculated to secure the object they all had in view. Mr. Burns then dealt with the great advance made by the local authorities in regard to the notification of cases of tuberculosis from Poor-law institutions and hospitals, and said that the duty incumbent on them was clear in view of the facts that from 30 to 50 per cent. of the cost and numbers of pauperism was due to sickness, most of which was consumption, that 75 per cent. of the cripples had a tuberculous origin, and that 90 per cent. of hunchbacks, 75 per cent. of the scrofulous, and 50 per cent. of those who had convulsions were inflicted with the disease. The Local Government Board was authorising local authorities to establish dispensaries, to purchase cheap and portable shelters for use in yards, to procure and distribute literature. Local authorities were more active in enforcing the unsound food regulations, and the milk and dairy trade had been vastly levelled up. The Royal Commission, after ten years of unpaid, disinterested, self-sacrificing, painstaking research, had issued its fourth and final report, which justified the demand for new milk legislation. A Milk Bill was essential and urgent, and before many months were over the milk and dairy industry of the country must be placed on a clean, sound, healthy, and permanent basis. Mr. Burns referred to the funds and income to be provided under the Insurance Bill for the establishment and upkeep of sanatoriums, and was confident that the money would be expended wisely and well. He did not doubt that some local authorities would accept the Chancellor's offer of half the cost for the wives and children of insured persons in sanatoriums, if the local authorities would bear the other half, and that others would soon follow.

Professor SIMS WOODHEAD advocated the inclusion of hygiene in the curriculum of secondary as well as elementary schools. He commended exhibitions and lectures and caravans, and the work of district nurses and health visits as educational methods, and said that good educational work had been done by the Royal Commission. There was sure to be criticism of the latter, but such criticism only showed that the public was becoming alive to the subject. He dwelt on the influence of alcoholism as a predisposing factor. But there was no universal panacea for the disease; the educational crusade must be a broad and common-sense one, not too insistent on any one method, but covering all.

Dr. F. C. SHRUBSALL, assistant school medical officer of the London County Council, in a paper on

The Place of the School in the Campaign against Tuberculosis,

pointed out that in the early educational stages the work against tuberculosis consisted in the inculcation of personal hygiene. There might come a time when a bath would form part of every elementary school in large towns, as it did in Germany, Holland, and Scandinavia. One bath was worth a hundred lectures, and cleanliness of clothing would follow cleanliness of body. Next winter the Council would provide a course of lectures for teachers, showing how they could assist the antituberculosis campaign. Strict isolation of sufferers might reduce the prevalence, but it might conceivably lessen the natural resistance of the community. The most effective guard was to cut down the modes of dissemination, which really meant universal cleanliness. Public opinion, by a rigid standard, could diminish tuberculosis and those minor affections that paved the way for it.

Sir WILLIAM YOUNGER, in a paper on

Tuberculosis Exhibitions and Caravans,

spoke of the value of travelling caravan exhibitions, such as that in his own county of Dumfriesshire, which with the lectures to children and adults did much good. The visit of the caravan also might induce property owners to remedy defects in their properties that were injurious to health.

Mrs. HOWARD MARSH, in a paper on

The District Nurse and the Health Visitor,

described the work of the Cambridge branch of the League for Physical Education and Improvement in Health Visitation. Those mothers who had followed the visitors' course were allowed to enter their children to compete in an annual baby show. The prizes were a Savings Bank book in which a shilling or two had been placed to the credit of the best babies in each of four sections—viz., weight, firmness of flesh, thickness of bone, general well-being—with mugs as consolation prizes for the unsuccessful. She insisted on the necessity of character, adequate training, interest in the work, and a sense of humour for health visitors.

Mr. J. LISTER STEAD, secretary of the Ancient Order of Foresters, in a paper on

Propaganda among the Friendly Societies and Trade and other Organisations of the Working Classes,

insisted on the close connexion between poverty and tuberculosis. The fact that at least that part of the Insurance Bill dealing with tuberculosis had received general approval was a gratifying recognition of a greater national responsibility in a matter which up to now had been left to private enterprise. The statistics of the Foresters showed that in a period of five years 15·23 per cent. of all deaths were due to phthisis, while those of the Hearts of Oak showed that the consumptive members in a period of ten years received average sick pay 75 per cent. in excess of that to all other members.

At the afternoon session of Wednesday, July 19th, Sir WILLIAM OSLER presided.

The Value of Family Inspection and of Notification.

Dr. R. W. PHILIP of Edinburgh said that tuberculosis in the adult was in large part a development from tuberculosis in the child. The need was for early detection, and the teaching of hygiene enabled every intelligent person to be in some degree a detective officer. Medical students needed better training in physical and bacteriological methods. He urged a revision of the methods of out-patient departments, and said that the whole family should always be inspected whenever a case of tuberculosis was discovered. In Edinburgh no inconvenience had arisen from compulsory notification, and this system had extended in Scotland from eight authorities in 1907 to 74 in 1910, and more than half the notifications in Edinburgh came through the dispensaries. He commended the plan of linking the London dispensaries together through the intermediary of a central council.

Dr. CECIL WALL, assistant physician to the London and Brompton Hospitals, read a paper on

The Hospital Out-patient Department as a Machine for the Detection of Pulmonary Tuberculosis,

and referred to the effect on the hospitals if the Insurance Bill became law. The only members of the community then remaining unprovided with medical attendance would be children under the school age, those between 14 and 16 who were unemployed, unemployed women, and people between 65 and 70 years. The hospital out-patient departments would retain only consultative functions, and he suggested that each out-patient department should be constituted a consulting centre for a definite district for the diagnosis and treatment of tuberculosis.

Dr. JAMES NIVEN described the work done in Manchester. He urged compulsory notification, additional sanatoriums, and the placing of funds at the disposition of the medical officer of health. If the sanatorium benefits under the Insurance Bill were to be separately administered the work would be impaired. Sanatorium benefit under the Bill should depend on notification having been made to the medical officer of health.

Dr. HALLIDAY G. SUTHERLAND, of St. Marylebone Dispensary for Consumption, in a paper on

The Tuberculosis Dispensary,

said that the dispensary formed a centre from which the majority of consumptives were treated—a clearing-house through which suitable cases could be distributed among open-air schools, sanatoriums, farm colonies, and hospitals for advanced cases, and a base from which organised search could be made for early and undiagnosed cases.

Other speakers were Miss M. E. BIBBY, Miss HETTY COWEN, and Dr. E. W. HOPE.

On July 20th Sir RICHARD DOUGLAS POWELL presided at the morning session. He said that the cases with which they had to deal were of two classes—the annual crop of new cases and the residuum of tuberculous population. By dealing with the first successfully the second would cease to be recruited and would die out. They had to learn what was best for each group of cases. Meanwhile, acquired and hereditary immunity had probably long been lessening the proclivity to tuberculosis in civilised communities.

Sir WILLIAM OSLER, in an introductory address, spoke of the universal diffusion of tuberculosis. What was necessary was education, not only of the public, but of the profession.

There was too much carelessness in examination among doctors, and that would tend to increase under that worst of all systems that was to be forced upon the profession—contract practice. The tuberculous patient needed to be under strict control by a capable doctor and a good nurse, and had to work out his own salvation with courage and hope. Hardly 10 per cent. of the cases could be treated in sanatoriums, so the home treatment must be developed. He urged closer association of the tuberculosis dispensaries with the general hospitals, whose duty it was to take up the work with their laboratory facilities and their social service agencies. He dreaded the group of men whose whole work, knowledge, and life were spent in the tuberculosis dispensary; they must needs become narrow. A closer study of tuberculin was needed, for those who used it carefully and persistently had excellent results, which showed that properly used in suitable cases it had an undoubted efficacy. In a few years it would be better known to what extent and in what manner this remedy could be best used.

Dr. ARTHUR LATHAM, in a paper on

The Value of the Sanatorium Treatment,

said that the public had not grasped that in many cases, owing to the severity of the disease, sanatorium treatment must be useless, in a few cases actually harmful, and in many others need not be carried out in an institution. The cardinal factor was not fresh air and food, important as these were, but the constant and skilled regulation of the rest and exercise prescribed from day to day. Sir Almroth Wright's work had disclosed the reason for this fact, which had been clinically apprehended by Bremer and Walther. Movement determined the quantity of blood and lymph sent through the lung, and on this depended the amount of poison swept into the general circulation. It was the question of how much of this poison the defensive forces were adequate to cope with that regulated the amount of exercise allowable. Early sanatorium treatment gave more control over the defensive forces, so that in a large proportion of cases a man's capacity for work could be restored. This, added to the education that made him cease to be a danger to the community, was all the argument needed to support the claims of the sanatorium. That sanatorium treatment had not met with universal acceptance was due to the fact that many existing sanatoriums were inefficient, to the improper idea obtaining in some quarters that sanatorium treatment was sufficient in itself and a certain cure for consumption, and to the fact that hitherto sanatoriums had been too costly. Nowadays, apart from the land the initial cost should not exceed £100 a bed and the upkeep should be less than 25*s*. a week. The difficulty arising from the maintenance of the family in the absence of the breadwinner should be swept away by intelligent administration of the Insurance Bill.

Dr. JANE WALKER, medical superintendent of the East Anglian Sanatorium, in a paper on

The Sanatorium Treatment of Consumption,

said that most consumptives, even in the earliest stages, took far too little food, and that of unsuitable kinds. She emphasised the importance of adequate food, the overcoming of the dread of a draught, the importance of rest, and the inestimable value of work properly applied; she laid stress on walking. Work was not only physically useful but was a corrective to boredom, which was depressing.

Dr. MARCUS S. PATERSON discussed

The Educative Value of Sanatoria,

as also did Dr. J. J. PERKINS. The last-named described the method evolved by Dr. Arthur Newsholme at Brighton of utilising a block in the isolation hospital for such consumptives as, while still able to work, were advanced to a stage where it was impossible to obtain for them a lasting cure. For such cases some measure of treatment was necessary for them from time to time as their strength failed with continued work, and a short period of rest, feeding, and change of surroundings provided all the improvement possible. Such patients were ideal subjects for home treatment, but they would be able to carry out the necessary rule of life at home only if it had been thoroughly drilled into them in a course of sanatorium training. In such cases the educative value was paramount, the few weeks' treatment only incidental. After the patient's return home he was kept under surveillance by a band of workers.

Dr. J. EDWARD SQUIRE read a paper on

The Home Treatment of Consumptives under the National Insurance Bill.

He pointed out that it would be practically impossible to treat all cases of consumption in institutions during the whole period for which treatment was required. Few experienced people now expected arrest of the disease from three months' treatment, so that treatment must be continued at home under medical supervision. There must, therefore, always be consumptives in all stages of the disease needing to be treated at home. For these the National Insurance Bill made no provision beyond free medical attendance. It offered no supervision other than what obtained in some places for all, including the uninsured, on notification. The dispensary system provided the most useful and satisfactory provision for home treatment and supervision, but the Insurance Bill gave no such advantage. For the advanced consumptive the 10*s*. benefit would not allow of so keeping his house as to aid recovery or prevent the infection of others. There was no power to insist on the removal of a consumptive from a house where neglect of necessary precautions was a menace to others. When the State found part of the insurance funds it ought to be able to take necessary steps to prevent infection of those who were, or would be, insured at its expense. Sanatorium benefits under the Bill should be enlarged to include some of the requirements for home treatment, the loan of shelters for outdoor sleeping, the means of having a separate room, or at least a separate bed, extra milk, or suitable food. It was much to be desired that the National Insurance Bill should allow further consideration to the needs of consumptives who must be treated at home.

Dr. J. F. J. SYKES, medical officer of St. Pancras, read a paper on

The Relationship of Philanthropic and Municipal Agencies in Diagnosis and the Treatment of Persons under 16 Years of Age,

in which he said it was in the search for a diagnosis of disease in its early and premonitory stage that the coöperation of philanthropic and municipal agencies was most valuable. He suggested that hospitals and dispensaries should undertake to diagnose and report on the condition of contacts sent by health visitors. With regard to children under 16 the Poor-law guardians and the London County Council might take action under Section 34 of the Children Act of 1908 to commit such children if neglected to the care of some fit person or society for the protection of children, but the very bodies having executive duties in regard to consumptives—viz., the metropolitan borough councils—were purposely omitted from the Act. In a roundabout way their medical officers could search out ailing persons under 16, and report any neglect to the guardians, so as to obtain for them proper home or institutional treatment.

In the afternoon Dr. LATHAM presided.

Dr. RALPH P. WILLIAMS, school medical officer of health of Sheffield, contributed a paper on

Open-air Recovery Schools,

in which he said that about 7 per cent. of elementary school children were mentally dull, and in about half the mental dulness was due to physical defects, including early tuberculosis and conditions predisposing to tuberculosis. He described the Sheffield open-air school for such cases (which had resulted at a cost of £700 from the conversion of a disused elementary school), its staff, selection of children, their condition on admission, treatment of the teeth, feeding, milk-supply, personal hygiene, rest, shower baths, and the costs of maintenance. The results, as estimated by the examination of the children in October, 1910, were: cured, 44; improved, 51; in the same condition, 3. The open-air school was valuable for its educative influence on parents, teachers, and children; in providing education for those too delicate for the regular schools; in leading to the placing of simpler schools in suburbs rather than massive buildings in cities, and in taking classes in the playgrounds and stimulating nature rambles, as a means for the treatment of anæmia, malnutrition, and the pretuberculous stage. Schools of this type should be constructed to

accommodate at least 2½ per cent. of the elementary school population.

Miss MCGAW, in a paper on

Tuberculosis Schools,

said that the amount of tuberculosis among school children was estimated at from 5 to 3 per cent., but that was probably under the mark; for medical inspection of schools, as at present practised, was useless, as owing to shortness of time a sufficiently detailed examination to detect the early signs of tuberculosis could not be made, and children under 8 were merely inspected, not examined, unless they were thought to be ill. She spoke of the excellent results of the Edinburgh Special Antituberculosis School, and said that under the Elementary Education Act (Defective and Epileptic Children), 1899, the education authority had power to establish such schools. She urged the need of organising such schools in relation to some antituberculosis institution, so that close medical supervision might be available, with medical supervision of the home and the direction of the choice of occupation when school was over, in regard to the physical condition of the child. All schools should be open-air schools—i.e., they should all open their windows.

Dr. A. MAXWELL WILLIAMSON, medical officer of health of Edinburgh, in a paper on

Advanced Cases and Segregation,

pointed out that it was hopeless to talk of segregation until the essential preliminaries of notification, the establishment of sanatoriums for early cases, and dispensaries devoted to treatment and prevention had been established. He described what had been done in Edinburgh by the use of a pavilion of the infectious disease hospital for segregating late cases. Prior to the establishment of this hospital in 1905, 73 per cent. of deaths from phthisis occurred in the homes of the patients, 14 per cent. in the parish hospital, and 13 per cent. in other institutions. Four years later only 51 per cent. died in their homes, 20 per cent. in the city's hospital, 20 per cent. in the parish hospital, and only 9 per cent. in other institutions. He urged the rendering such hospitals markedly attractive to overcome the prejudice against them.

At the morning session on July 21st

Mr. C. S. LOCH, secretary of the Charity Organisation Society, read a paper on

The After-care of Patients.

He cited a series of cases to show the many factors that entered into the after-care. One must work through local agencies with comparatively small areas. Treatment without visiting would effect little. The establishment of dispensaries would aid in detection of contact cases. He criticised the proposed method of working of the sanatorium benefit in the Insurance Bill, saying that as the Bill stands, a large sum is to be contributed for sanatoriums, but that no suitable means were suggested to utilise the sanatorium properly from the point of view of the family needs in long and continuous illness. The cases he had adduced showed that some such provision should be made.

Dr. H. W. MCCONNEL read a paper on the same subject, in which he said that after-care was mainly dependent on individual effort acting in individual cases, and there was a great danger in sanatoriums supported by State funds that this individuality of the workers would be checked; that private interest and work would be superseded by officialism, which would be more expensive and less effective. The working patient scheme, whereby patients were employed in and about the sanatoriums for a small wage, would be hampered, because these workers would have to be insured, as the Bill stood, and the sanatoriums would have to pay the insurance. These difficulties might possibly be removed by working the State-paid sanatoriums through existing sanatorium machinery, and so keeping its individuality, and freeing all working patients where work is part of their treatment from the action of the Bill.

The rest of this session was given up to general discussion.

Mr. WALDORF ASTOR, M.P., read a paper on

The Economic Cost to the Community of Tuberculosis.

He referred to the well-known figures given in "The Conquest of Consumption" by Dr. A. Latham and Mr. G. H. Garland, and to the records of the German Imperial Office quoted by the Chancellor of the Exchequer in the House of Commons, and declared that with these and similar figures before us it is clear that the cost of sanatorium treatment, provided that only suitable cases are selected, would be repaid over and over again by saving in disablement benefits.

Dr. NATHAN RAW read a paper on

The Use of Existing Accommodation in Dealing with Tuberculosis,

in which he paid a complimentary tribute to Mr. Lloyd George's clauses with regard to the treatment of consumption in the National Insurance Bill. Dr. Raw advocated the taking over of existing institutions, such as small-pox hospitals, workhouses, and portions of fever hospitals, which are no longer required for the purposes for which they were constructed, and so to provide treatment for tuberculosis patients. In this way, a very large number of beds would be available throughout the country. Comparatively few cases, in his opinion, will receive any material benefit by such institutional treatment, but nevertheless the provision of large numbers of sanatoriums throughout the country will do more than anything else to stamp out the disease from our midst. Dr. Raw suggested that such sanatoriums should be divided into four groups: (1) For early cases, with a view to cure; (2) farm and industrial institutions for arresting the disease; (3) sanatoriums for advanced and hopeless cases; and (4) open-air schools and sanatoriums for children. He regarded the third group as by far the most important, and that the transfer to them of advanced cases should be compulsory, and that they should be constructed of the simplest materials which can be readily disinfected or destroyed.

Mr. ERNEST J. SCHUSTER, LL.D., read an interesting paper on this critical question:—

Will National Health Insurance Ensure National Health?

In a close *résumé* of the proposals under the National Health Insurance Bill, which are intended to affect the general hygiene conditions of the country, he found many of the proposed measures to regulate the general conditions of public health only of problematical value. With the exception of the case of excessive sickness, where inquiry is valuable, the proceedings under the Bill are likely, he thinks, to create an expectation which would probably not be fulfilled, and further, that the measures affecting the insured persons individually will not benefit national health to any appreciable extent unless they are largely supplemented by voluntary agencies. The importance of maintaining these agencies and supporting them with all possible energy by the side of any system of State insurance which may be adopted cannot be sufficiently accentuated and impressed upon the public.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the General Committee of the Imperial Cancer Research Fund was held on July 20th at the Royal College of Surgeons of England, the DUKE OF BEDFORD, K.G., the President, being in the chair. Amongst those present were Sir William Church, Sir Thomas Barlow, Sir Henry Butlin, Sir R. Douglas Powell, Sir John Tweedy, Sir Henry Morris, Sir Henry Howse, Sir John McFadyean, Sir Francis Lovell, C.M.G., Mr. Edmund Owen, Dr. Sidney Martin, Dr. F. W. Andrewes, Dr. T. H. Craig Stevenson, Mr. S. Forrest Cowell (secretary of the Royal College of Surgeons of England), Dr. J. A. Murray, Dr. W. H. Woglom, Mr. R. Clement Lucas, Lady Meiklejohn, Miss D. S. Coode, Dr. E. F. Bashford (general superintendent), and Mr. F. G. Hallett (secretary).

The adoption of the report was moved by Sir WILLIAM CHURCH in a speech which was a very able summary of the main points of the

NINTH ANNUAL REPORT.

Report of the Executive Committee.

The ninth annual meeting of the General Committee of the Imperial Cancer Research Fund was held at the Royal College of Surgeons on July 20th last, when the chair was taken by the Right Hon. A. J. BALFOUR, M.P. Sir WILLIAM CHURCH, Bart., K.C.B., chairman of the Executive Committee, presented the annual report, which was adopted. On the motion of Sir WILLIAM CHURCH, Bart., seconded by Sir HENRY MORRIS, Bart., His Grace the Duke of BEDFORD, K.G., was unanimously elected President of the Fund. Mr. BALFOUR, in moving a vote of thanks to the Chairman and members of the Executive Committee, the sub-committees, officers, and others, spoke of the valuable work done by the Imperial Cancer Research Fund the result of which

has been to open up entirely new lines of investigation, and laid stress on the fact that the main work of the Fund—its laboratory research—"is the only possible method of working which is going to produce great and permanent results for the good of humanity." Sir Richard Douglas Powell, Bart., K.C.V.O., was appointed a member of the General Committee and Sir Watson Cheyne, Bart., was re-elected a representative of the General Committee on the Executive Committee. It was also resolved—

"That the Honorary Treasurer of the Fund be, in future, *ex-officio* a member of the Executive Committee."

Mr. R. Clement Lucas was elected by the Council of the Royal College of Surgeons a member of the Executive Committee in the vacancy occasioned by Sir Henry Morris, Bart., becoming, as Treasurer, an *ex-officio* member. Professor Higuchi and Dr. Takaki of Tokio, Dr. Rosenthal of Budapest, and Dr. Snapper of Amsterdam, have returned to their respective countries after pursuing, by permission of the Executive Committee, various investigations extending over a period of several months in the laboratories. The General Superintendent has continued to make a liberal distribution of material to all, both in this country and abroad, who have applied to him, and it is with satisfaction that an exchange of valuable material with Japanese scientific workers can be reported. To Professor Honda, Director of the Imperial Naval Medical College at Tokio, and to Dr. Higuchi, the thanks of the Executive Committee are due for their cordial coöperation in this respect. The General Superintendent attended the Second Conference on Cancer in Paris as the delegate of His Majesty's Government. A report on the Conference was prepared by Dr. Bashford for the Government and published as a Parliamentary paper.

The plans of the laboratories to be provided by the Royal Colleges of Physicians and Surgeons for the Imperial Cancer Research Fund in the new Examination Hall have been carefully considered by the Pathological Subcommittee, by whom several valuable suggestions have been made. These suggestions having been adopted, it is believed that the new laboratories will be very complete and fully equal to the demands of the work. The Executive Committee have agreed to contribute towards the cost of the laboratories by payment of a premium for a definite period of occupation or by the payment of an annual rental. Professor Welsh of Sydney and Dr. Sluys of Brussels have worked during the year in our laboratories with a view to acquire a knowledge of the methods of investigation pursued there. The accumulation of material for publication has decided the committee to issue another volume of scientific reports. This volume is now in the press and will probably be ready early in the autumn. It will contain papers on: (1) Spontaneous Tumours in Mice; (2) Cancerous Ancestry and the Incidence of Cancer in Mice; (3) The Behaviour of Tumour-cells during Propagation. Its preparation has involved a considerable amount of work by the Pathological, Statistical, and Publication Subcommittees. The committee, on the recommendation of the General Superintendent, decided in December last to offer to the Council of the Royal College of Surgeons for addition to its Museum numerous specimens which have been collected by the staff since the foundation of the Fund, showing cancerous growths in animals and the experimental reproduction and prevention of the lesions of the disease. This offer was gladly accepted, and the specimens are now exhibited in the Museum of the College.

As mentioned in the last report, Dr. Magnus Haaland terminated his connexion as a member of the staff on Feb. 11th last, on taking up his new appointment as director of the Pathological Institute of Bergen. In the vacancy occasioned by Dr. Haaland's resignation Dr. Russell has been appointed second assistant and Dr. Woglom has joined the staff as third assistant. The General Superintendent has recently fulfilled a promise to send an exhibit on behalf of this fund to the British Section of the International Hygiene Exhibition of Dresden. Dr. Murray attended in Dresden to arrange the exhibit, which has proved to be of considerable interest. The following papers have been issued from our laboratories during the year: On Knowledge of Peptolytic Ferments in different Carcinomata and other Tumours. Third Contribution. (Zur Kenntnis der peptolytischen Fermente verschiedener Krebse und anderer Tumorarten.—III. Mitteilung.) Hoppe-Seyler's Zeitschrift für Physiologische Chemie, Vol. lxvi., 1910.[1] Cancer in Domesticated Animals. Annual Conference of Veterinary Officers of Health, Glasgow. *Veterinary News*. September, 1910. Spontaneous Cancer in Mice. Proceedings of the Royal Society, B., Vol. lxxxiii., 1911. The Obligation imposed upon the General Practitioner by the Development of the Experimental Investigation of Cancer. *Practitioner*, March, 1911.

At the invitation of the Norwegian Medical Society the General Superintendent gave an address in Christiania on March 8th on "The Investigations of the Imperial Cancer Research Fund." Dr. Bashford, on the invitation of the University of Birmingham, also delivered the Ingleby Lectures at Birmingham in May last, the subject being "Advance in Knowledge of Cancer." An abstract of these lectures appeared in THE LANCET, June 10th, 1911, and in the *Birmingham Medical Review*.

FREDERIC G. HALLETT, Secretary.

Report of the General Superintendent.

The preparation of an annual report on the progress of investigations directed consistently to the solution of major problems necessitates a re-survey of much ground already traversed, with the addition here and there of new facts or modifications affecting the interpretation of old ones. The reports come to be really an annual review of the position of knowledge, dependent on investigations conducted in the laboratory, but also influenced by those conducted elsewhere, either at home or abroad. The scope of the investigations carried out during the past year has been very similar to that recorded in the Eighth Annual Report; the main work carried out during the year has been the maturing and preparing for publication some of the investigations outlined in the last report. This has involved much repetition of experiments for checking and supplementing results already arrived at, in order that they might be presented in the form of the Fourth Scientific Report, which is now in the press. A feature of this year's work is the extension of experimental investigation to rabbits, in which animal a carcinoma of the mamma and a sarcoma of the subcutaneous tissue have been discovered, the latter being capable of propagation. The Fourth Scientific Report, apart from an introduction, is restricted to three papers which bear directly upon the nature of cancer, and indirectly upon the genesis of some forms of the disease. The necessity for narrowing the field of inquiry was alluded to in the First Annual Report. This object has been advanced materially by the demonstration that the relation of each malignant new growth to the affected animal is an individual one, parallel to that obtaining between the organs of the body and the organism as a whole. More precise conceptions have been obtained of the influence of heredity in place of the indefinite and contradictory views previously current. Cellular alterations bridging over the differences between normal and cancerous cells have been demonstrated to take place in growths under continuous observation and under natural conditions. Taken together these three advances indicate the direction in which further investigation can be profitably undertaken. In addition, these demonstrations are supported by most important new statistical information which has been made accessible in the last report of the Registrar-General.

Statistics.—It will be remembered that the policy pursued in regard to the statistical investigation of cancer has been to supplement the national statistics, and, if possible, to add to their utility by special inquiries, but not to endeavour to overlap or in any way to replace them. This policy has been dictated by the belief that the adequate investigation of most of the statistical features of cancer is best carried out by the Registrar-General's Staff, since the data available for such a purpose do not exist outside of the national statistical office. It has been encouraged by the willingness with which the medical superintendents of statistics have collaborated with the Imperial Cancer Research Fund in supplementing and amplifying information calculated to assist purely pathological and experimental investigations. This collaboration and coördination, which does not exist in the case of organisations for the investigation of cancer in other countries, where independent statistical inquiries have been undertaken with the voluntary assistance of the medical profession, has been of the greatest importance in England and Wales by preventing profitless overlapping and in effecting real advances in the accurate statistical knowledge of the incidence of cancer. For several reasons it had long been desired that the reports of the Registrar-General should contain detailed information on the incidence of cancer in different parts of the body, and Dr. Tatham was able to make arrangements for obtaining this information at the outset of these investigations. The application of the law of age-incidence for cancer to short-lived as well as to long-lived animals reinforced the other reasons for obtaining it, and suggested that knowledge would be advanced by more detailed information about the age-incidence of cancer in the several organs of man as distinct from its dependence on the age distribution of persons.[2] It was anticipated that the data would be of both biological and statistical value, and the facts published by Dr. Stevenson in the last report of the Registrar General illustrate that this hope has been fulfilled in several directions. The tabulation of the new data for the years 1901-09 has permitted an analysis of the figures recording the increase of deaths attributed to cancer, and bringing out the fact that the increase during this period is referable to certain anatomical regions and not to others. Thus, for males, the main increase falls on the alimentary tract, especially the stomach. The liver and gall-bladder and the skin show no, or only a slight increase. For females, the increase, although it falls mainly on the alimentary tract (stomach and intestines), affects also the mamma, while the uterus, ovary, liver and gall-bladder, rectum and skin show little or no increase. It is also of importance that the recorded mortality from cancer of the generative organs has not increased at the same rate as that for other organs, and that most of the increases affect the higher age-periods predominantly. For the first time it is fully demonstrated that it is wrong to make statements of a disquieting nature about the increase of cancer in general. In conjunction with other investigations means are also afforded of determining for parts of the body where the disease appears to be increasing, whether the increase is real or only apparent, and of ascertaining the causal factors peculiar to such parts. While it is evident that several of the differences brought out by the figures can be explained by more accurate diagnosis and by transference of the seat of the disease from the secondary to the primary situations, as illustrated, e.g., by the relation revealed between cancer of the liver and gall-bladder and the alimentary tract, this may not account fully for other features. In particular, the increase recorded for the mamma in women and the tongue in men requires further study and elucidation. Secondly, the analysis shows that the incidence is very unequally distributed among the several situations, and, indeed, that the whole curve of incidence may be different for different organs. A progressive increase up to the highest age-periods is characteristic of the face, lip, mouth, bladder, urethra, and breast only. The other organs show a distinct diminution in the highest age-periods; but it is not yet possible to determine whether this curve indicates a liability rising to a maximum followed by a diminution, or is merely the result of deaths being still ascribed to other causes in the case of cancer of internal organs in aged people. The proportion of total deaths ascribed to the ill-defined cause of old age is 65·6 per 1000 as compared with 65·7 for cancer, and it must be borne in mind that the increases recorded for cancer affect principally the higher age-periods and that the average age of the population is increasing. Sufficient has been said to indicate how important are the problems which are solved or revealed by the improvement in the details given in the national statistics. The study of the occurrence of cancer in mankind, and in domesticated animals in widely separated parts of the globe, has shown that the practice of peculiar customs (involving the subjection of particular parts of the body to chronic irritation), provokes the disease in situations and organs from which it is absent when these customs do not obtain. It is reasonable to suppose that the frequency of cancer would be diminished if such practices as the use of the kangri in Kashmir, the chewing of betel-nut, the eating of very hot rice in China, were discontinued. It is also reasonable to assume that the introduction into England of these exotic customs would greatly increase the frequency of cancer in this country. So definite is the evidence of the mediate causation of certain forms of cancer by chronic irritants that the possibility of variations in the cancer death-rate must be admitted as regards particular organs and regions of the body. The possibility of a variation of the main incidence of cancer in conformity with changes in certain customs must also be admitted. That irritation is really an important causative factor of cancer is an assumption

[1] In collaboration with the Physiological Institute of the Royal Veterinary College, Berlin.

[2] Second Scientific Report, Part I.

which is justifiable only for certain forms of cancer occurring in particular regions. The knowledge of the irritants to which different species of animals and the individual tissues of the same animal are susceptible is of very considerable importance. The acquisition of this knowledge will doubtless require extensive study, and it is advisable to approach this study in man statistically. In view of these considerations, and also because of the results of experiment, it appears advisable to have data of the incidence of cancer in persons pursuing different occupations. This matter was discussed with Dr. Tatham in 1903-04, and again discussed with Dr. Stevenson of the General Register Office, who has been so good as to explain to the Statistical Subcommittee that the new arrangements made by the Registrar-General for tabulating deaths would permit of this information being abstracted. For the purposes of comparison it will be necessary to learn not only the incidence of cancer on particular sites liable to irritation, but also the incidence of cancer on all other sites, as well as the incidence of the other causes of death in the occupations considered. This information will be embodied in the next decennial supplement to the reports of the Registrar-General. Of other statistical matters, reference may be made to the fact that over 4000 cases of cancer have now been collected from India. The figures confirm the conclusions already stated. Of interest has been a large series of cancer cases of which reports and specimens have been sent from Khartoum by Mr. Christopherson, the cases occurring in Arabs and in the natives of the Sudan and Bahr-el Ghazel remote from the influences of European civilisation. Dr. Preston Maxwell has drawn attention to a peculiarity in the incidence of cancer in China, where the men are very liable to cancer of the œsophagus, whereas in Chinese women the disease is rare or unknown. In China Dr. Preston Maxwell suggests that the difference is due to the men bolting their rice whilst it is very hot, the men being served first and the women afterwards when the rice has become cooler. Enough has been said to show that the statistical inquiries continue to add, each in its own way, to our knowledge of cancer either by revealing new facts or by giving, if not yet a true, still a more precise significance to old ones. Another form of inquiry which has been both statistical and experimental has thrown light upon the long-debated question of heredity.

Heredity.—The breeding experiments which have been in progress for many years have been alluded to in several earlier reports. They have now yielded upwards of 2000 mice of known ancestry and age. 562 females were available for a study of the influence of heredity on the development of cancer of the mamma when an analysis was made on Oct. 24th, 1910. The figures are arranged in the accompanying tables so as to bring out the ages of the mice, and the proportions which developed cancer of the breast in the two groups into which they have been segregated according to ancestry. All due precautions have been taken to avoid errors in the interpretation of the figures. The data show that heredity plays a part in the development of cancer of the breast in mice. At all age-periods the disease is more frequent when the mother, or either grandmother, or all three, had died from cancer of this organ.

TABLE I. (*Oct. 24th, 1910*). *Female Mice of Recent Cancerous Ancestry.* (*Mother, one or both grandmothers, or all three cancerous.*)

Age (months)	0-3	-6	-9	-12	-15	-18	-21	-24	Over 24.	Total.
No tumour—										
Living	—	—	9	7	6	8	7	4	6	47
Dead	—	—	49	48	39	28	22	20	18	224
Tumour mice—										
Organs other than mamma	—	—	—	1	2	2	1	—	1	7
Mamma	—	—	4	7	15	18	10	5	3	62
Total	—	—	62	63	62	56	40	29	28	340
Per cent. ...	—	—	6·5	11·1	24·2	32·1	25·0	17·2	10·7	18·2

TABLE II. (*Oct. 24th, 1910*). *Female Mice of Remote Cancerous Ancestry.* (*No cancer in mother or grandmothers.*)

Age	0-3	-6	-9	-12	-15	-18	-21	-24	Over 24	Total.
No tumour—										
Living	...	...	7	...	1	2	9	5	15	39
Dead...	...	...	30	37	24	28	19	17	6	161
Tumour mice—										
Organs other than mamma	...	...	...	...	...	...	1	1	2	4
Mamma	...	...	1	4	1	8	0	3	2	19
Total	...	...	38	41	26	38	29	26	25	223
Per cent. ...	...	...	2·6	9·8	3·8	21·6	0·0	11·5	8·0	8·6

The maxima occur at the same age-period in each group, being respectively 21·6 and 32·1 per cent. of the total number of animals, there being no evidence that the maximum incidence of cancer has been made to occur at a younger age in mice of recent cancerous ancestry. Without wishing to minimise unduly the important influence which heredity is thus demonstrated to have, it is necessary to warn against needless alarm or the awakening of pessimistic anticipations of the outlook on future efforts to cope with cancer. It has been sought deliberately to concentrate any tendency to the disease which may be due to heredity, and in this way to obtain mice more liable to the disease than are others. Apart from its bearing upon heredity, the obtaining of such mice was most important for furthering the experimental investigation of the genesis, nature, and should it be necessary artificial production of cancer, and for attempting to define the reasons for its apparently greater frequency in some geographical areas than in others. It will be obvious that a large field of investigation has been opened up by the segregation of mice into two groups of different liability, and it should be possible to obtain groups of animals of a still higher and a still lower liability. An effort is now being made to obtain by selection a breed of mice with diminished liability to cancer. While it is at present impossible to explain how the liability is transmitted, it can be averred with certainty that it does not consist in the inheritance of a soil more suitable for the growth of cancer in general. It is not the inheritance of a general constitutional predisposition suitable for growth, as is shown by the fact that implantation of cancer is not more successful in mice of a cancerous stock than in others. It can only be inferred, with some probability, that it is a local or circumscribed tissue predisposition, in virtue of which the mammary tissue is prone to pass from mere proliferative reaction into continuous or cancerous proliferation. Further, hereditary predisposition is only one of the factors in play, for it has been found that chronic inflammatory changes are remarkably frequent in the mammæ of female mice of the laboratory. Other factors still unrecognised may exist. It has been possible to obtain a sequence of all stages from normal tissue through mere chronic inflammation and simple hypertrophy, to adenoma and carcinoma. The manner of the occurrence and combination of these changes strongly suggest their interdependence and reference to a common cause which becomes effective in producing cancer through the variability of the normal cell as described below.

Individuality and cancer.—The study of the parallel behaviour of normal and cancer tissue both as regards absence of continued growth and the nature of the immunity reactions induced, when cancer is transferred from one animal to another of a strange species, showed that cancer had all the properties which distinguish the normal tissues of one species from those of another species. Recent experiment has carried knowledge much further. The fact that transplantable tumours grow in normal animals as well as they do in spontaneously affected animals shows that the latter do not present a soil for the growth of cancer substantially different from that presented by normal animals. When this result is contrasted with the almost invariable success of transplanting a portion of its spontaneous tumour into the animal so affected, and the almost invariable failure of implantation of any spontaneous tumour into other spontaneously affected animals, the demonstration is complete that each tumour is peculiarly and genetically related to the individual in which it arises. This conclusion is drawn from studying the growth of tumours under the different conditions just enumerated, and is supported by the results of elaborate experiments on inducing resistance or immunity to the inoculation of cancer cells under these different conditions. The results of these two lines of inquiry agree also with the fact that resistance has not been induced either with an animal's own tumour or its own normal tissue.[3] The individuality of cancer would thus appear to have been placed at last beyond all further discussion. It has long been maintained in various forms on the basis of deductions drawn from histological (microscopical) examination of the tissues at the site of the primary lesion, and from the nature of dissemination, but this interpretation of the findings has been as vehemently combated. The combination of the results arrived at by microscopical investigation and experimental study appears to terminate any need for further discussion. A long step has thus been taken in defining the direction in which the future investigation of cancer is alone likely to be profitable.

The nature of cancer.—It follows from the argument pursued in the preceding paragraphs that a closer definition of the nature of cancer will involve an analysis of the relation obtaining between the individual developing cancer and the tumour. This final analysis will be possible only on animals naturally afflicted with the disease, for, as pointed out consistently from the First Annual Report onwards, the genesis and the growth of cancer are distinct phenomena which can and ought to be separately investigated. The study of propagated cancer is only a study of its growth under natural and artificial conditions, and has only an indirect bearing upon the genesis of the disease. Hence the breeding experiments, to which allusion has already been made, acquire enhanced significance, and are already being, and will continue to be, conducted on a much more extensive scale. An adequate supply of animals of differing liability to the disease must be made available for the elucidation of problems, some of which are already suspected, while past experience makes it likely that others, as yet unsuspected, will arise. In all previous reports guarded reference has been made to the mediate relation obtaining between chronic irritation and certain forms of cancer. The indefiniteness in the way of drawing attention to the relationship is deliberate. In the first place, it is due to an effort to elucidate those forms of cancer with which irritation is most constantly associated without considering other forms in which the particular irritants concerned do not play a part. In the second place, it is due to the fact already frequently emphasised, that these irritants have nothing in common beyond their association with cancer. The varied investigations of the past nine years have added a knowledge of new forms of irritation. It has become more and more evident that irritation, effective in one case, may be, and often is, quite ineffective in another. The experimental aspect of the comparative investigation of cancer has met with much adverse criticism largely because of the necessity for reproducing experimentally all the natural lesions of the disease, and then utilising this procedure to devise methods to prevent them, as well as from the necessity for cultivating the cancer cell in order that a constant supply may be available for a variety of purposes. This supply can most satisfactorily be maintained by growth in living animals, the application to tumour cells of Ross Harrison's method of cultivating normal tissues in coagulated plasma by Burrows and Carrel being still impracticable as a routine method of

[3] In last year's annual report it was stated that an animal could be immunised against the transplantation of a tumour from another animal by means of one of its own tissues. More extended investigation has shown that this result is not invariably obtained.

continuous propagation. Ever since the beginning of these investigations it has been maintained that the mere cultivation of cancer had important, if only indirect, bearings upon its nature and genesis. Thirty-five of the tumour-strains have now been growing for over three years—i.e., for longer than a mouse lives—while 50 other strains have been grown for extended periods. The one feature all these tumour-strains have in common is the power of continuous growth which they possess, in spite of the most divergent structure and of extremes in the rate of growth varying from an almost explosive rapidity to one much inferior to that of embryonic tissue, as determined by weighing experiments. It can be shown that there is a constancy in the behaviour of a tumour-strain and a variability which is individual. The variations which occur are similar to those which distinguish the 85 different strains from one another. They are not mainly induced by the environment but arise spontaneously; otherwise all strains would approach a common type, which they do not. The demonstration of the occurrence of these variations under artificial conditions permits of the inference that they could also occur under natural conditions, and yields objective evidence of the validity of the conclusion that the cancer cell is a biological modification of the normal cell endowed with many inherent properties of the latter. The objection at once suggests itself that these variations during prolonged propagation are secondary, and do not necessarily indicate corresponding primary changes as responsible for genesis; but this objection cannot be maintained against the facts that the potentiality for variation has been demonstrated, as has also the tenacity with which the several varieties are adhered to. It has been ascertained that every fresh transplantation effects a disturbance of the cancer cells. They are thrown into a state equivalent to regeneration from which they tend to recover, as analogous as possible to reactive proliferation when naturally occurring. Hence the features observed under artifical propagation throw suggestive light upon the nature of cancer and its genesis in those cases in which a prolonged phase of reactive proliferation has intervened between the first response to irritants and the development of cancer.

Immunity and therapeutic investigations.—Apart from the investigations in which the reactions of immunity have been employed to elucidate the nature of cancer, numerous experiments bearing upon the possibilities of treatment have continued to be made. The onset, rise, fall, and disappearance of immunity as induced by the inoculation of normal and cancerous tissue has been accurately defined in parallel experiments. The distinctions and similarities in the immunising powers of different tumours, especially of sarcoma as distinct from carcinoma, have been extensively studied. The dissemination of cancer has been studied experimentally both by injecting cancer-cells directly into the blood-stream and by implanting them in internal organs. It has been found possible to produce the lesions of dissemination in these ways both in the absence and in the presence of a primary growth, and, what is more important also, to prevent them. Since every procedure found efficacious to modify in any degree the growth of transplanted cancer has been tested on mice naturally affected with the disease it is needless to enter into details, more especially since problems difficult of solution in the mouse, because of its small size and the short duration of its life, can now be studied under the more favourable circumstances obtaining in the rabbit. As pointed out in previous reports, nothing but harm can result from the premature application to the treatment of the human subject of methods found to modify the growth of propagated cancer in animals. In order to emphasise still more strongly this warning it may be stated that the methods which induce an *active* immunity to propagated cancer have been tested on 33 mice with natural cancer, and have given no evidence of powers either to hinder growth and dissemination, or to prevent recurrence of spontaneous cancer after surgical removal. These methods have also been found to be of no avail in preventing the successful inoculation of an animal with its own tumour; and they have their practical application at present only in the elucidation of the properties of cancer cells. The successful treatment of animals bearing propagated cancer by means employed to induce *passive* immunity has been described by other investigators. Some of these methods have been tested in the laboratory, but have not yielded positive results. It becomes increasingly evident that the therapeutical treatment of cancer is not to be sought for along these lines. A considerable number of cases of natural healing of spontaneous malignant new growths has now been observed in mice affected with spontaneous cancer. The changes leading to natural cure appear to depend, as in propagated cancer, on an altered condition of the cell and its contents, rather than on an alteration in the general condition or constitution of the affected animal. Means must be devised for elucidating the nature of the change in the cell before curative measures can be discovered.

Since these investigations were first contemplated by those responsible for their inauguration, the provisions made for the investigation of cancer have greatly altered in this country. Whereas nine years ago, apart from special provision for treatment being supplied by a number of hospitals, there existed for the investigation of the disease only one other laboratory in addition to the imperial organisation contemplated by the founders of this Fund, to-day a number of other laboratories exist throughout the country, both in London and the provinces; England and Scotland are now provided with a greater number than any other country in comparison with their size and population. Whenever an opportunity has occurred of furthering the particular investigations upon which these institutions have been engaged, assistance has been rendered by supplying material from the laboratory and by the Imperial Cancer Research Fund in many other ways. The responsibilities thrown upon the workers of the Imperial Cancer Research Fund are not diminished, but rather increased, by the multiplication of institutions engaged in the investigation of cancer.

ERNEST F. BASHFORD, M.D.,
General Superintendent of Research and
Director of the Laboratories.

Report of the Honorary Treasurer for the Year ending June 24th, 1911.

The income from investments for the year 1910–1911 was £4584 10*s.* 6*d.* The expenditure for the same period amounted to £5478 2*s.* 8*d.* A contribution from an anonymous donor of £1000 has been received for the specific purpose of equipping a bio-chemical laboratory. Legacies to the amount of £1936 7*s.* 4*d.* have been added to the Fund during the year, and £850 11*s.* 6*d.* have been received in subscriptions from 97 subscribers of sums varying from £100 to 5*s.* The excess of expenditure over income during the last year amounted to £893 12*s.* 2*d.* It is very considerably less than in any previous year, except in the first year of the existence of the Fund. During the year just ended there has been no exceptional or unusually heavy expenditure and the research work of the Fund has been carried on, as formerly, in premises provided, rent and taxes free, by the two Royal Colleges. This, however, is the last year that the Fund can expect to benefit by these special advantages. When the next report is made to the General Committee the work of the Fund will have been transferred to the new Examination Hall which is being erected by the Royal Colleges in Queen-square, Bloomsbury, and it is expected that either a premium for a definite term of years will have to be paid down or that the payment of an annual rent will begin to appear in the expenditure side of the balance-sheet. Another large volume of scientific reports is now in course of passing through the press, and this, besides having involved a very considerable amount of work on the part of the director and his staff and the several subcommittees, will make a very heavy demand upon the ensuing year's resources.

The general superintendent in his report has referred to the new responsibilities which are being thrown on his staff by the increase in the number of workers engaged in the investigation of cancer in other centres. Many of these centres have naturally looked to the Imperial Cancer Research Fund to assist them, but the provision of this assistance adds greatly to the mere routine work conducted in the laboratories. Owing to the advance in our knowledge much of what was originally investigation of prime importance has now become routine work and could well be deputed to a subordinate staff trained for the purpose. The provision of such a staff would set free the more highly trained men capable of original research, on whom we must rely to maintain the scientific reputation which the Fund has obtained. In order that this much-desired end may be achieved, it is essential that the Fund should have at its disposal a considerably augmented income. Moreover, a reconsideration of the scale of remuneration of the superior staff is essential if the Fund is to maintain a position commensurate with the duties and responsibilities of a truly imperial organisation. For these reasons it is most undesirable that the Fund should have to be constantly drawing upon its capital, and once more I must call attention to the pressing need for such a substantial increase in the endowment as will provide an income sufficient to defray all the ordinary and, from time to time, extraordinary expenses of the work.

HENRY MORRIS, Honorary Treasurer.

Sir HENRY MORRIS, in seconding the adoption of the report, uttered a warning against misapprehending the favourable report of the treasurer. It was true that this year the expenditure had exceeded the funded income by only £893, whereas on some prior occasions the excess had been as much as £2000. But this year there had been no unusual expenses. Next year, however, the large amount expended on the Scientific Report now in the press would make itself felt. Notwithstanding that in the nine years that had elapsed since the foundation of this Fund many new bodies and laboratories for cancer research had come into being both here and abroad, the value of this Research Fund was shown in three ways: by the great number of distinguished investigators who came from all parts of Europe, America, and from Japan, to study the methods of research in progress in that laboratory; by the fact that the director of the laboratory had been called on by leading scientific bodies in Paris, Berlin, Heidelberg, Toronto, Christiania, Utrecht, and Budapest, and elsewhere, not to mention many English research centres, to deliver addresses before them explanatory of the methods used; and by the fact that a committee, not confined to the Royal College of Surgeons of England, but assisted by the advice of other centres of investigation in Europe and America, had conferred upon thei director, Dr. Bashford, the Walker prize for the best original work done during the past five years in any country towards advancing our knowledge of cancer. Sir Henry Morris urged the necessity for reviewing the scale of remuneration, because it was essential that the Fund should be able to retain the best and most highly trained workers, and there was arising a demand for workers trained in that laboratory for other places at higher salaries.

The resolution was carried unanimously.

The DUKE of BEDFORD, from the chair, then moved a vote of thanks to the chairman, members of the Executive Committee, the sub-committees, the honorary treasurer, and others who had assisted in the work of the Fund during the past year. These gentlemen, he said, were mainly representatives of various scientific bodies who ungrudgingly gave their time and skill to the consideration of the problems continually brought before them by Dr. Bashford and his staff. Scrupulous care was exercised by them to avoid unguarded statements that might unduly exalt or depress the public hopes. They owed thanks also to Dr. Stevenson, of the Registrar-General's office, through whose cordial coöperation the investigation of the distribution of cancer was rendered possible, while profitable lines of investigation were being indicated by the differentiation of the various groups of the disease which affected the different parts of the body in different ways. Next year the Fund would move to the new laboratories, now being erected over the new Examination Hall of the Royal Colleges. The

improved accommodation, planning, and equipment justified the Executive Committee in its agreement to contribute in the form of premium or rent for these laboratories, and he hoped that additional public support would enable them to meet this tax without encroaching on the capital of the trust. Progress was being made, but there would be much expenditure in time and money before definite results could be obtained, and once more they had to ask their supporters to exercise the virtue of patience.

Sir RICHARD DOUGLAS POWELL seconded the motion, which was unanimously adopted.

Sir HENRY BUTLIN moved, and Sir JOHN MCFADYEAN seconded, the nomination for re-election by the Royal Colleges of Physicians of London and Surgeons of England of Sir William Church as a member of the Executive Committee. This also was carried.

Sir THOMAS BARLOW proposed a vote of thanks to the Duke of Bedford for presiding, which was seconded by Sir JOHN TWEEDY and unanimously carried.

BRITISH PHARMACEUTICAL CONFERENCE.

Presidential Address.

THE forty-eighth annual meeting of the British Pharmaceutical Conference was opened at the Municipal College, Portsmouth, on July 25th, when, after an address of welcome had been given on behalf of the municipality, Mr. W. F. WELLS (Dublin) delivered his presidential address, which dealt mainly with the laws relating to the sale of poisons in the United Kingdom. He showed that the one idea running through the various Pharmacy Acts was the protection and convenience of the public, the public health and the lives of the people being considered of paramount importance. The essential difference between the pharmacy laws of the United Kingdom and those of France is that the French laws give the pharmacist a definite place in the community, specific services to perform for the community, and ensure that none shall poach upon the preserves fenced by these laws. In Germany the practice of pharmacy is strictly confined to qualified persons, and a custom exists there which is unknown either here or in France of strictly limiting the number of pharmacies, each pharmacy throughout the Empire being licensed by the State. The consequence is that in Germany a pharmacist cannot start business until a vacancy for a pharmacy occurs and he obtains or purchases the concession to carry on the business of an old-established pharmacy, or to open a new one where the growth of the population warrants the State granting a new concession. After further demonstrating the superiority of the German and French systems over the British and Irish, Mr. Wells asked, "Might not the British Government with advantage take a lesson from our French and German neighbours, and, when importing German-made insurance schemes, go a little further and include an order for a few pharmacy laws 'made in Germany'?" Mr. Wells had a word to say concerning the supply of drugs to Irish boards of guardians. In Ireland the Local Government Board compel the guardians of unions to accept the lowest tender, and the result of this may best be shown by quoting the President's words. "What becomes," he asked, "of the tons of damaged and useless drugs that from time to time are placed on the market? Much of the stuff which is unsaleable in the British drug market is, I believe, sent abroad, and yet finds it way back again, having been either 'cooked' or redressed, to Great Britain and Ireland for consumption. Who is responsible for this state of affairs? The answer is the boards of guardians, governors of institutions, and the public who insist on buying medicines at competitive prices at which we know they cannot be produced. It appears to me a cruel thing—I might go even further and say a criminal thing—for those who have in their hands the care of the sick poor in public institutions to purchase the supplies of medicines, putting price first, and too often without regard to quality or therapeutic value, the lowest tender being the one standard of merit." As to the National Insurance Bill, the President had little to say except that if passed in its present form it would certainly injure many a pharmacist.

Papers read in the Science Section.

The reading of papers in the Science Section was begun at the conclusion of the Presidential address and continued on the following day. There were in all 20 papers, some of which were brief notes on subjects of purely pharmaceutical interest. Several of the papers were of some importance to medical practitioners, as, for instance, the communication by Mr. R. R. BENNETT, B.Sc., F.I.C., on a Suggested Standard for Thyroideum Siccum. There is a widespread belief among clinicians that the commercial thyroid preparations vary considerably in their degree of physiological activity, but at the present time there is no officially recognised standardisation process. The agreement among the majority of pharmacologists that the activity of thyroid is directly proportional to, and dependent upon, the combined iodine present appears to, render it urgently desirable that an iodine standard should be fixed, especially in view of the wide variations in the iodine content of commercial samples of thyroideum siccum. Specimens of this product from four of the leading manufacturers have been examined recently, and the combined iodine present has been found to vary in amount from 0·315 per cent. to 0·038 per cent. The percentage of iodine in dry thyroid obtained direct from the slaughter-house has also been determined, the glands having been treated in accordance with the directions in the British Pharmacopœia; the iodine present in these powders has been found to vary from 0·21 per cent. to 0·096 per cent., the average value being 0·158 per cent. Mr. Bennett's figures confirm those obtained by previous investigators, and in his opinion these figures indicate that an iodine standard of 0·15 per cent. might be adopted for thyroideum siccum without in any way unduly harassing the manufacturer.

Mr. H. DRANE, B.Sc., F.I.C., in a paper on Extract of Indian Hemp, drew attention to the variability of this extract as supplied by manufacturers. The pharmacopœial preparation is unsatisfactory, being composed of two constituents, a green resin and brown water-soluble extractive matter, which show a tendency to separate, and, moreover, it is by no means completely soluble in alcohol, which makes the preparation of the tincture troublesome and messy. Therefore a demand has arisen for an extract soluble in alcohol; hence the reason for the predominance of non-official extracts. There is little doubt that the resinous portion of the extract contains the active principle, and extracts which are practically pure resin may be expected to be therapeutically more active as well as pharmaceutically more elegant than other extracts. To obtain such an extract the method suggested by Mr. Drane was simply to wash away the brown extractives with warm water after the spirit had been distilled off in the same way as resin of jalap and resin of scammony are prepared. He suggested that this method should be adopted by the Pharmacopœia, so that the present unsatisfactory state of affairs might be altered.

In a paper on the Supposed Loss of Morphine in the Preparation of Tincture of Opium, Mr. E. H. FARR, F.C.S., and Mr. R. WRIGHT, F.C.S., demonstrated that when the official methods are followed throughout there is always a loss. In seven samples of opium worked upon this varied between the limits of 0·8 per cent. and 9·0 per cent. of the whole, with an average for the whole series of 4·78 per cent. In the light of these results it is evident that, notwithstanding the amount of careful thought and experimental work which has been devoted to the subject of opium assay, there is still room for a thorough and systematic review of the whole subject. If the principles of the process had been radically unsound, the authors would have expected to find the deficiency of morphine to be more constant and regular than is the case. The loss appears to them to be due more probably to the occlusion of the alkaloid, rendering its complete extraction by water or alcohol a matter of practical impossibility, or to some other factor which has hitherto escaped recognition.

A paper of particular interest to medical practitioners was read by Mr. F. W. F. ARNAUD, F.I.C., on the Composition of Diabetic Foods. The term diabetic food embraces a very wide class of food products, but in this communication gluten bread and flours only were dealt with. The majority of the almond, milk protein, and soya bean, &c., preparations are known to contain less than 10 per cent. of starch, dextrin, and sugar together. Mr. Arnaud examined 12 different samples of gluten bread and flours, the product of seven manufacturers, and the conclusion he came to was that the products of one manufacturer only were satisfactory. He described the method of analysis adopted and tabulated the results. Drawing attention to the advertisement matter

of some of the firms in question, he said that one firm submitted that its products were more nutritious than any other preparation of the kind; again, a statement advertised very generally was to the effect that the starch present in the foods had been altered, so that it could be digested and assimilated by the diabetic subject. But Mr. Arnaud cannot confirm the statement that the starch is appreciably altered either by the qualitative iodine test or the microscope. A sample of an expensive diabetic food was found to consist of ordinary flour which had merely been heated.

In a note on Linimentum Ammoniæ, Mr. F. H. ALCOCK, F.I.C., suggested an improved formula for this preparation. When made according to the official process the liniment sometimes becomes solid on keeping. His suggested formula was as follows: almond oil, 3 fluid ounces; olive oil, 8 fluid ounces; strong solution of ammonia (0 880), 1 fluid ounce. The product has not such a good appearance as the fresh official preparation, but is very effectual. He did not know why the expensive almond oil was introduced into the official formula, and thought that olive oil alone might be used with his suggested formula.

Mr. D. B. DOTT, F.R.S.E., in a note on Spirit of Nitrous Ether, said that under practical conditions of dispensing it was difficult to avoid the volatilisation of the ethyl nitrite. He therefore proposed that no spirit of nitrous ether should be kept in stock at all. There would be two solutions, like Fehling No. 1 and No. 2, which would be mixed when dispensing, using ½ fluid drachm of sodium nitrite solution with 7½ fluid drachms of alcohol acidified with lactic acid. The proposal was made in view of the forthcoming Pharmacopœia. Mr. Dott also read short notes on Strychnine Hypophosphite and Arsenates of Strychnine.

In a note on Solution of Sodium Ethylate Mr. H. FINNEMORE, B.Sc., said it usually happened when this solution was required for use the "stock" was dark in colour; although its medicinal properties are not affected by this colouration, the user is apt to assume that deterioration has accompanied the change. A sample of solution of sodium methylate showed no trace of discolouration after two years. Mr. Finnemore also (with Mr. G. E. TOWN) contributed a note on Bartsia Odontites.

A communication on Podophyllum Emodi was contributed by Mr. J. C. UMNEY, F.C.S., who referred to the second report of the Indigenous Drugs Committee of India, which dealt with Podophyllum emodi amongst other drugs. Some medical opinions recorded in that committee's report indicated that the purgative action of P. emodi resin was better than that of podophyllum resin (B.P.), as the drug did not produce griping; whilst other medical opinions were that it was about equal in value to the pharmacopœial resin. At the request of the Indian Drugs Committee Mr. Umney conducted a series of experiments upon the drug, collected under different conditions and at different seasons. He found that the Indian rhizome collected after flowering was at least twice as rich in podophyllotoxin as the American rhizome.

The titles of other papers were as follows: "An Experiment in Peppermint Culture," by Mr. J. H. HENDERSON, in which it was shown that the oil yield of peppermint grown in the shade was less than a quarter of the yield of ordinary plants; "Note on the Constitution of Commercial Bismuth Subchloride," by Mr. J. B. P. HARRISON, F.I.C; "White Precipitate and the Analysis of White Precipitate Ointment," by Mr. G. D. ELSDON, B.Sc.; "Note on Spirit of Sal Volatile," by Mr. E. W. POLLARD, B.Sc.; and "The Moisture and Ash Contents of Medicinal Extracts," by Mr. K. C. ALLEN and Mr. T. BREWIS, F.I.C.

In the Practice Section there were discussions on Secret and Proprietary Medicines, Pharmaceutical Education, and the National Insurance Scheme.

DEATH FROM SALVARSAN.—At the Hackney coroner's court on July 19th Dr. W. Wynn Westcott held an inquest with reference to the death of a man, aged 47 years, who died from the effects of taking salvarsan, or "606." Dr. George Dorner, medical officer of the German Hospital, said the deceased suffered from locomotor ataxy. His condition was serious. He was treated with salvarsan and received an injection of 0·6 gramme, about 7 grains being the dose. After the treatment he became worse and died. The jury returned a verdict that the man died as a result of the injection of salvarsan properly used.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to July 22nd (total available for distribution, £45,700):—

	£	s.	d.
St. Mary Abbots (total)	422	0	0
West London Synagogue	318	0	0
St. Paul's, Knightsbridge	280	0	0
Kensington Parish Church	274	0	0
Great Synagogue, Aldgate	237	0	0
Westminster Abbey	203	0	0
Holy Trinity, Kensington Gore	175	0	0
Hampstead Synagogue	152	0	0
St. Paul's, Hampstead	138	0	0
Central Synagogue	124	0	0
New West End Synagogue	110	0	0
St. Peter's, Brockley	100	0	0
St. Leonard's and All Saints', Streatham	91	0	0
Bayswater Synagogue	90	0	0
St. Paul's, Vicarage Gate	86	0	0
Christ Church, Chislehurst	86	0	0
St. Thomas's, Portman-square	77	0	0
Victoria Park Christian Evidence Association	74	0	0
St. John's Wood Synagogue	70	0	0
Holy Trinity, Marylebone	66	0	0
St. Mark's, Marylebone	64	0	0
Christ Church, Victoria-road	62	0	0
Blackheath Congregational Church	58	0	0
Barking Parish Church and Missions	57	0	0
Holy Trinity, Wandsworth	55	0	0
St. Saviour's, Ealing	52	0	0
"F."	50	0	0
German Church, Camberwell	46	0	0
St. James's, Garlick Hill	43	0	0
Christ Church, Ealing	38	0	0
Willesden Presbyterian Church	34	0	0
St. John's, Blackheath	31	0	0
St. Barnabas, Pimlico	31	0	0
Dalston Synagogue	31	0	0
St. Ann's, Stamford Hill	29	0	0
Hammersmith Parish Church, with St. Mark's	29	0	0
South Hackney Synagogue and Religion Classes	27	0	0
St. Barnabas, Clapham	27	0	0
St. Simon's, Paddington	26	0	0
St. Paul's, Forest Hill	25	0	0
St. Margaret's, Streatham	24	0	0
Stoke Newington Synagogue	24	0	0
St. Mary's, Crouch Hill	23	0	0
Bromley, Kent, Wesleyan Church	22	0	0

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

MEETING OF ORGANISING COMMITTEE.

A MEETING of the Organising Committee was held on Friday, July 14th, at the Royal College of Physicians of London, Sir THOMAS BARLOW, the President, being in the chair.

There were present, among others, Sir Dyce Duckworth, Dr. F. W. Pavy, Sir William Bennett, Sir William Allchin, Sir William Osler, Dr. Norman Moore, Professor G. Sims Woodhead, Sir David Ferrier, Sir Malcolm Morris, Sir R Havelock Charles, Sir David Bruce, Dr. Squire Sprigge, Mr. G. H. Makins, Dr. W. P. Herringham, Dr. A. E. Garrod, Mr. C. T. Dent, Dr. T. D. Acland, Dr. Herbert Spencer, Sir A. Pearce Gould, Sir Watson Cheyne, Sir Shirley Murphy, Dr. Frederick Taylor, and Dr. Dudley Buxton.

The minutes of the last meeting, as published in THE LANCET and *British Medical Journal* of April 8th, 1911, were confirmed.

Letters of regret were read from 20 members of the committee who were unable to attend.

The report of the Executive Committee was adopted as follows:—

(1) That the printing of the Transactions of the Congress be entrusted to the Oxford Press; (2) that the Royal Albert Hall be engaged for the week of the Congress, to serve as post office, bureau, and site for the exhibition of medical appliances; and (3) that the arrangements to be made for carrying out the exhibition of medical appliances, in accordance with the resolution of the Organising Committee, be left in the hands of the Finance Committee, with power to act and report to the Executive Committee.

The HONORARY GENERAL SECRETARY (Dr. W. P. Herringham) reported that the regulations proposed at the last meeting of the Organising Committee had been laid before the Permanent Commission, and had been, with slight modifications, adopted.

The question arose as to the rules which should be

followed in sending official invitations. The matter was left in the hands of the officers for report to the Organising Committee.

The PRESIDENT then moved :—

1. That it is desirable that the staffs of sections should include members from the colonies.

This was unanimously approved.

2. That the secretary should be instructed to communicate with (*a*) the President and Secretary of the Canadian National Committee for International Medical Congresses; (*b*) the President of the Australasian Medical Congress; and (*c*) the officers of the South African branch of the British Medical Association, asking them to nominate such of their members as they may think fitted by their scientific eminence to serve on the staff of such sections.

This resolution was unanimously approved.

The PRESIDENT then submitted the list of the officers of Congress and of the staff of such sections as were already completed. This was ratified by the committee.

Further names will be added in accordance with the resolutions above.

The committee then adjourned.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on July 20th, with Sir FRANCIS CHAMPNEYS in the chair.

Dr. G. E. HERMAN moved :—

That it is expedient to act upon the following resolution: "A midwife will be deemed to have discharged the duty imposed upon her by Rule E, 20 (5) if, after having filled up the form of sending for medical help and handed it to the parent or friend, she advises the parents either to: (*a*) ask a registered medical practitioner to come to the child; (*b*) send the child to a registered medical practitioner; or (*c*) send the child to a hospital, according to the circumstances of each case."

The rule referred to provides that medical help must be sent for "in the case of the child, when there is any abnormality or complication, such as injuries received during birth, any malformation or deformity in a child that seems likely to live, dangerous feebleness, inflammation of, or discharge from, the eyes, however slight, serious skin eruptions, inflammation about the navel."

The CHAIRMAN said that at a recent penal meeting of the Board he was asked if the midwife was complying with the rules if she sent a child to the doctor. His answer was that she was not, but thinking it over he came to the conclusion that the midwife was complying with the rules. In Liverpool, for instance, there was a good eye hospital, and in the case of ophthalmia neonatorum he thought a midwife would be doing right in sending the child to such a hospital. The midwife must, however, not fail to notify the local supervising authority, and to fill up the form for summoning medical help. He desired the Board to note that his remarks must be taken as information for the Board, and not in support of the resolution proposed by Dr. Herman.

Mr. PARKER YOUNG said that the midwife might get into difficulties if she sent a child to the doctor instead of having the child first seen by a doctor and then acting on the advice given.

After the CHAIRMAN had pointed out that in the circumstances the child's interests were safeguarded, Dr. HERMAN agreed to withdraw his motion.

A letter was considered from Dr. Comyns Berkeley, obstetric physician, Middlesex Hospital, on behalf of the weekly board of the hospital with regard to a complaint made by a certified midwife of the inadequacy of the training given at the hospital. The further consideration of the matter was adjourned in order to afford an opportunity to members of the Board to visit the Middlesex Hospital and observe the methods of training adopted at that institution.

A letter was considered from the clerk of the Notts county council as to the difficulty experienced in securing the conviction of uncertified women for practising contrary to the provisions of Section 1 (2) of the Midwives Act, 1902. The Board decided it be suggested to the local supervising authority: (*a*) That an opportunity be taken of appealing to the High Court from any decision of a Petty Sessional Court holding as a matter of law that, in the absence of proof by the prosecution that the uncertified woman attending a midwifery case has been engaged beforehand, the case becomes one of emergency within the meaning of Section 1 (2) of the Midwives Act, 1902; (*b*) that the local supervising authority should itself report direct to the General Medical Council any case in which, in their opinion, a medical practitioner has been guilty of "covering."

A letter was considered from the town clerk of Sheffield as to the Board's procedure on the citation of midwives against whom *primâ-facie* cases have been found by local supervising authorities. The Board decided that the town clerk of Sheffield be informed that the meetings of the Board are open to representatives of the press who have received permission to attend, and that the citation of women against whom local supervising authorities have found *primâ-facie* cases of malpractice, negligence, or misconduct is a part of the Board's proceedings; that the responsibility of publishing any particular item of business transacted at the meeting rests with the press, and that the Board is not prepared to alter its procedure nor to argue the case further.

The Board had under consideration the National Insurance Bill, so far as it affects the practice of midwives, and adopted the following memorandum embodying the views of the Board on the National Insurance Bill :—

The Board and the National Insurance Bill.

The following is the memorandum to be submitted to the Chancellor of the Exchequer by the Central Midwives Board :—

The Midwives Act of 1902 was passed in the interests of the mothers and infants of England; this Act recognises midwives as an important body directly concerned with the safety of pregnant, parturient, and lying-in women and their infants. The results of their work during nearly ten years past are shown in the reduced maternal mortality as appears from the statistics of the Registrar-General.

In the Insurance Bill now before Parliament the midwife is ignored. The Central Midwives Board urges that this position, which it can hardly believe is intentional, should be so modified in the Bill that free choice should be given to mothers whether they wish to be attended by a medical practitioner or by a midwife. It is desirable that the position of midwives under the Bill should be recognised and defined, and their duties in respect of maternity benefits distinguished from those of the medical profession.

In our opinion it would be in the interests of the public health that a representative of the Central Midwives Board, as a statutory body, should be upon the Advisory Committee (Clause 42); also that midwives should be represented upon Local Health Committees (Clause 43 (5)). It would be advantageous that any rules or regulations of a general character relating to maternity benefits should be submitted to the Central Midwives Board for consideration, this body having been constituted the authority in charge of the regulation of the practice of midwives and having a wide experience thereon.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8144 births and 3751 deaths were registered during the week ending July 22nd. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been equal to 11·7, 12·0, and 11·8 per 1000 in the three preceding weeks, rose again to 12·1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns averaged 12·0 per 1000, while in London during the same period the mean annual death-rate did not exceed 11·2 per 1000. The recorded annual death-rates in the 77 towns during last week ranged from 3·2 in Burton-on-Trent, 4·5 in Devonport, 4·9 in Hornsey, and 5·1 in Smethwick, to 16·8 in West Bromwich and in Tynemouth, 17·3 in Liverpool, 18·6 in Swansea, and 19·5 in Dewsbury. The 3751 deaths from all causes in the 77 towns last week showed an increase of 101 upon the number in the previous week, and included 423 which were referred to the principal epidemic diseases, against 284 and 324 in the two preceding weeks. Of these 423 deaths 236 resulted from infantile diarrhœa, 62 from measles, 52 from whooping-cough, 40 from diphtheria, 22 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 1·4 per 1000, against 0·9 and 1·0 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 136 in the three previous weeks, further rose last week to 236, and caused the highest annual rates of 2·7 in Liverpool and in St. Helens, 2·9 in Dewsbury, 3·0 in West Bromwich and in Bootle, and 3·6 in Birkenhead. The 62 fatal cases of measles showed a further decline from the numbers in the 19 preceding weeks, and included 23 in London and its

suburban districts, 11 in Manchester, and 3 each in Nottingham, Salford, and Newcastle-on-Tyne. The deaths referred to whooping-cough, which had declined from 81 to 43 in the six preceding weeks, rose to 52 last week, and included 12 in London and its suburban districts, and 5 in Manchester. The fatal cases of diphtheria, which had increased from 21 to 45 in the four previous weeks, declined last week to 40; 15 occurred in London and its suburban districts, 4 in Portsmouth, and 3 in Liverpool. The 22 deaths from scarlet fever showed an increase of 3 upon the number in each of the two previous weeks, and included 6 in London, 3 in Liverpool, and 2 each in Birmingham, Preston, and Leeds. The 11 deaths from enteric fever, of which 2 occurred in Birmingham, were one less than the number recorded in the preceding week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1345 in the 14 preceding weeks, had further increased to 1358 on Saturday last; 199 new cases of this disease were admitted to these hospitals during the week under notice, against 191 and 204 in the two previous weeks. These hospitals also contained, at the end of last week, 822 cases of diphtheria, 354 of measles, 287 of whooping-cough, and 47 of enteric fever, but not one of small-pox. The 985 deaths from all causes in London last week were 3 in excess of the number recorded in the previous week, and included 113 which were referred to diseases of the respiratory system, against 102 and 119 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 155 and 194 in the two preceding weeks, were 188 last week, and 354 inquest cases were registered. The causes of 32, or 0·9 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner. All the causes of death during last week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Portsmouth, Salford, and in 52 other smaller towns; the 32 uncertified causes of death in the 77 towns last week included 7 in Birmingham, 5 in Manchester, and 2 each in London, Liverpool, Warrington, Bury, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 838 births and 457 deaths were registered during the week ending July 22nd. The annual rate of mortality in these towns, which had increased from 13·3 to 14·9 per 1000 in the four preceding weeks, declined last week to 13·9. During the first three weeks of the current quarter the annual death-rate in these Scotch towns averaged 14·5, and was 2·5 per 1000 above the mean rate during the same period in the large English towns. The annual death-rate during last week in the eight Scotch towns ranged from 8·6 and 10·2 in Paisley and Aberdeen to 15·9 in Glasgow and 17·4 in Perth. The 457 deaths from all causes in the eight towns last week showed a decrease of 31 from the number in the previous week, and included 63 which were referred to the principal epidemic diseases, against 50 and 57 in the two previous weeks; of these 63 deaths, 28 resulted from diarrhœa, 17 from whooping-cough, 9 from measles, 4 from scarlet fever, 3 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·9 per 1000; the mean rate last week from the same diseases in the 77 English towns did not exceed 1·4 per 1000. The deaths from diarrhœa, which had been 14 and 18 in the two preceding weeks, further rose last week to 28, and included 23 of infants under two years of age; 18 deaths occurred in Glasgow, 5 in Edinburgh, and 2 in Greenock. The fatal cases of whooping-cough, which had been 12 and 23 in the two previous weeks, declined last week to 17, of which 10 were recorded in Glasgow, 3 in Edinburgh, and 2 in Dundee. The 9 deaths attributed to measles were 3 in excess of the number in the previous week, and included 5 in Glasgow and 3 in Edinburgh. Three of the 4 fatal cases of scarlet fever, 2 of the 3 deaths from diphtheria, and the 2 deaths from enteric fever were registered in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 56 and 47 in the two preceding weeks, rose again to 51 in the week under notice, and were 1 in excess of the number in the corresponding week of last year. Of the 457 deaths from all causes in the eight towns last week, 171, or 37 per cent., were recorded in public institutions, and 28 were attributed to different forms of violence. The causes of 14, or 3·1 per cent., of the deaths in the eight towns last week were not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 767 births and 371 deaths were registered during the week ending July 22nd. The annual rate of mortality in these towns, which had been equal to 14·2 and 16·7 per 1000 in the two preceding weeks, further rose to 16·8 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 15·9 per 1000; in the 77 English towns the mean annual death-rate during the same period did not exceed 12·0, while in the eight Scotch towns it equalled 14·5 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 19·8 in Dublin (against 11·4 in London), 16·3 in Belfast, 12·9 in Cork, 19·2 in Londonderry, 20·4 in Limerick, and 19·0 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week did not exceed 11·3 per 1000. The 371 deaths from all causes in the 22 towns last week showed an increase of 2 upon the number in the preceding week, and included 53 which were referred to the principal epidemic diseases, against 22 and 35 in the two previous weeks; these 53 deaths were equal to an annual rate of 2·4 per 1000, exceeding the mean rate from the same diseases in the 77 English towns by 1·0. These 53 deaths in the Irish towns last week from the principal epidemic diseases included 36 from infantile diarrhœa, 6 from whooping-cough, 4 from measles, 4 from diphtheria, and 3 from enteric fever, but not one from small-pox or from scarlet fever. The deaths attributed to diarrhœa, which had been 8 and 15 in the two previous weeks, further rose last week to 36; 18 deaths occurred in Belfast, 11 in Dublin, 3 in Limerick, and 2 in Londonderry. The 6 fatal cases of whooping-cough were 4 in excess of the number in the preceding week, and included 4 deaths in Dublin. Of the 4 deaths from diphtheria, which were equal to the number returned in the previous week, 2 were registered in Dublin and 2 in Belfast. Three of the 4 fatal cases of measles, and 2 of the 3 deaths from enteric fever were recorded in Dublin. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 46 and 52 in the two previous weeks, declined last week to 40. Of the 371 deaths from all causes in the 22 towns last week, 112, or 30 per cent., were recorded in public institutions, and 10 were referred to different forms of violence. The causes of 14, or 3·8 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·9 per cent. in the 77 large English towns, and was equal to 3·1 per cent. in the eight principal Scotch towns.

VITAL STATISTICS OF LONDON DURING JUNE, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·4 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·3, 4·1, and 4·3 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, the City of Westminster, Stoke Newington, and Lewisham; and the highest rates in Holborn, Finsbury, Bethnal Green, Southwark, and Greenwich. The prevalence of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1911.

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1911.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.‡										Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.			
LONDON	4,522,628	1	683	466	—	48	1	17	286	8	1510	4·4	—	103	13	35	62	6	73	292	0·8	3859	11·7
West Districts.																								
Paddington	142,541	—	15	7	—	3	—	—	4	—	29	2·7	—	2	—	—	1	—	3	6	0·5	113	11·0
Kensington	172 296	—	18	9	—	1	—	—	6	—	34	2·6	—	2	—	—	4	—	5	11	0·8	136	11·1
Hammersmith	121,837	—	13	16	—	—	—	—	3	—	32	3·4	—	—	—	—	4	1	3	8	0·9	103	11·5
Fulham	153,726	—	29	24	—	1	—	2	6	1	63	5·3	—	2	—	1	2	—	3	8	0·7	126	11·2
Chelsea	66,218	—	14	2	—	—	—	—	3	—	19	3·7	—	1	—	—	—	—	2	3	0·6	50	10·2
City of Westminster	159 709	—	16	11	—	2	—	1	6	—	36	2·9	—	3	—	2	5	2	—	12	1·0	128	11·7
North Districts.																								
St. Marylebone	117,844	—	8	12	—	1	—	—	10	—	31	3·4	—	1	—	1	2	—	4	8	0·9	110	13·0
Hampstead	85,599	—	5	15	—	—	—		2	—	23	3·5	—	1	—	1	—	—	—	2	0·3	46	7·9
St. Pancras	218,031	—	41	23	—	7	—	—	8	—	76	4·5	—	4	1	2	3	—	2	12	0·7	206	12·9
Islington	327,234	—	64	27	—	2	—	—	16	2	111	4·4	—	3	1	2	6	—	9	21	0·8	294	12·2
Stoke Newington	50,669	—	5	3	—	—	—	—	2	—	10	2·6	—	2	—	—	1	—	—	3	0·8	37	9·9
Hackney	222,674	—	18	20	—	—	—	—	27	2	67	3·9	—	6	2	1	1	—	3	13	0·8	186	11·4
Central Districts.																								
Holborn	49,084	—	23	9	—	—	—	—	2	—	34	9·0	—	1	1	—	—	1	—	3	0·8	54	15·4
Finsbury	87,639	—	22	17	—	1	—	1	17	—	58	8·6	—	2	1	1	1	—	1	6	0·9	89	13·7
City of London	19,475	—	1	2	—	1	—	—	2	—	6	4·0	—	—	—	—	—	—	1	1	0·7	17	12·5
East Districts.																								
Shoreditch	111,284	—	7	20	—	1	—	—	7	—	35	4·1	—	6	—	2	—	—	3	11	1·3	119	14·6
Bethnal Green	128,247	—	12	27	—	1	—	—	13	1	54	5·5	—	5	1	2	—	—	2	10	1·0	116	11·9
Stepney	279,560	—	33	37	—	1	—	1	42	—	114	5·3	—	27	3	3	4	—	6	43	2·0	286	13·9
Poplar	162,290	—	27	19	—	6	—	—	11	—	63	5·1	—	11	—	2	1	—	4	18	1·4	162	13·4
South Districts.																								
Southwark	191,595	—	49	23	—	1	—	—	18	—	91	6·2	—	7	—	1	3	—	3	14	1·0	195	13·9
Bermondsey	125,840	—	17	21	—	2	—	—	5	—	45	4·7	—	—	—	1	8	—	2	11	1·1	126	14·4
Lambeth	298,032	—	33	28	—	2	—	2	12	—	77	3·4	—	4	—	3	3	—	4	14	0·6	232	10·4
Battersea	167,765	—	25	12	—	2	—	—	12	2	53	4·1	—	4	2	4	1	—	3	14	1·1	155	12·9
Wandsworth	313,389	—	60	24	—	3	—	2	8	—	97	4·0	—	1	—	4	5	1	6	17	0·7	217	9·5
Camberwell	261,407	—	38	19	—	2	1	2	13	—	75	3·7	—	2	—	—	3	—	1	6	0·3	176	9·1
Deptford	109,475	—	17	11	—	—	—	1	13	—	42	5·0	—	2	—	—	3	—	1	6	0·7	98	12·3
Greenwich	95,982	—	32	8	—	—	—	3	6	—	49	6·7	—	2	—	—	—	—	2	4	0·5	74	10·3
Lewisham	161,677	—	15	13	—	2	—	—	5	—	35	2·8	—	—	1	1	1	1	—	4	0·3	102	8·5
Woolwich	121,509	—	26	10	—	4	—	1	7	—	48	5·1	—	2	—	1	—	—	—		0·3	96	11·
Port of London	—	1	—	—	—	2	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar General's weekly returns; these two columns are therefore omitted from the Table.

scarlet fever showed a slight increase compared with that in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Chelsea, Holborn, Finsbury, Southwark, Greenwich, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1012, 1018, and 1128 at the end of the three preceding months, had further risen to 1206 at the end of last month; the weekly admissions averaged 162, against 124, 127, and 160 in the three preceding months. Diphtheria was rather more prevalent than in other recent months; this disease showed the greatest proportional prevalence in Fulham, Hampstead, Holborn, Finsbury, Shoreditch, Bethnal Green, and Bermondsey. The Metropolitan Asylums Hospitals contained 771 diphtheria patients at the end of last month, against 881, 827, and 801 at the end of the three preceding months; the weekly admissions averaged 102, against 107, 97, and 100 in the three preceding months. The prevalence of enteric fever showed a slight increase over that recorded in any of the three preceding months; the greatest proportional prevalence of this disease was recorded in Paddington, St. Pancras, Poplar, Bermondsey, and Woolwich. The Metropolitan Asylums Hospitals contained 33 enteric fever patients at the end of last month, against 22 and 35 at the end of the two preceding months; the weekly admissions averaged 6, against 5 in each of the two preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Hackney, Finsbury, Bethnal Green, Stepney, Southwark, and Deptford. The 17 cases of puerperal fever notified during the month included 3 in Greenwich and 2 each in Fulham, Lambeth, Wandsworth, and Camberwell. The 8 cases notified as cerebro-spinal meningitis included 2 in Islington, 2 in Hackney, and 2 in Battersea.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending July 1st the deaths of 3859 London residents were registered, equal to a corrected annual rate of 11·7 per 1000, against 17·3, 16·7, and 13·2 in the three preceding months. The death-rates last month ranged from 7·9 in Hampstead, 8·5 in Lewisham, 9·1 in Camberwell, 9·5 in Wandsworth, and 9·9 in Stoke Newington, to 13·7 in Finsbury, 13·9 in Stepney and in Southwark, 14·4 in Bermondsey, 14·6 in Shoreditch, and 15·4 in Holborn. The 3859 deaths from all causes included 103 from measles, 13 from scarlet fever, 35 from diphtheria, 62 from whooping-cough, 6 from enteric fever, and 73 (among children under two years of age) from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Paddington, Hampstead, Camberwell, Greenwich, Lewisham, and Woolwich; and the highest rates in Shoreditch, Stepney, Poplar, Bermondsey, and Battersea. The 103 deaths from measles were 76 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Stoke Newington, Shoreditch, Bethnal Green, Stepney, and Poplar. The 13 fatal cases of scarlet fever showed a decline of 19 from the corrected average number, and included 3 in Stepney, 2 in Hackney, and 2 in Battersea. The 35 deaths from diphtheria were slightly in excess of the corrected average number; the greatest proportional mortality from this disease was recorded in the City of Westminster, Shoreditch, Bethnal Green, Poplar, and Battersea. The 62 fatal cases of whooping-cough were 39 fewer than the corrected average; this disease was proportionally most fatal in Kensington, Hammersmith, the City of Westminster, Bermondsey, and Deptford. The 6 deaths from enteric fever showed a decline of 3 from the corrected average number, and included 2 in the City of Westminster. The 73 deaths from diarrhœa and enteritis among children under two years of age included 9 in Islington, 6 in Stepney and in Wandsworth, 5 in Kensington, and 4 each in St. Marylebone, Poplar, and Lambeth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 37·4 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon John Kirkup Robinson has been placed on the retired list, at his own request (dated July 18th, 1911).

The following appointments have been notified:—Fleet-Surgeons: E. T. P. Eames, to the *Gibraltar*, and to the *Cambrian*, on recommissioning; J. D. Hughes, to the *Devonshire;* Edward C. Ward, to the *New Zealand*, on commissioning; J. H. Stenhouse, to the *King Edward VII.*, on recommissioning; and E. C. Cridland, to the *Irresistible*, on recommissioning. Staff-Surgeons: H. H. Gill, to the *Cæsar;* K. H. Jones to the *Africa;* and E. S. Tuck, to the *Illustrious*, on recommissioning. Surgeons: M. C. Mason, to the *Gibraltar* and to the *Cambrian*, on recommissioning; F. G. Wilson, to the *Colossus*, on commissioning; G. H. S. Milln and H. B. German, to the *New Zealand*, additional, on transfer of flag; Percy F. Minett, to the *Vivid*, additional, for disposal; C. Ross, to the *Pembroke*, additional, for disposal, and to Royal Naval Hospital, Chatham, vice Wilson, on the *Colossus* commissioning; J. A. Thompson to the *Hercules*, on completing; A. T. Rivers, to the *King Edward VII.*, on recommissioning; A. H. Joy, to the *King Edward VII.*, additional, on transfer of flag, and H. H. Ormsby, to the *Crescent*, and to the *Fiora*, on recommissioning.

Fleet-Surgeon James Henry Beattie has been placed on the Retired List (dated July 24th, 1911).

ROYAL ARMY MEDICAL CORPS.

Colonel R. I. D. Hackett, senior medical officer at Pretoria, has been transferred to India and appointed Principal Medical Officer of the Karachi Brigade. Lieutenant-Colonel H. M. Sloggett, at present serving at Aldershot, has been placed under orders for a tour of service at Malta. Lieutenant-Colonel A. Dodd, in medical charge at Chester, has been selected to succeed Lieutenant-Colonel H. J. Barratt as Senior Medical Officer in the Straits Settlements. Lieutenant-Colonel J. Battersby, who recently retired under the age rule from the Royal Army Medical Corps, has been appointed a Justice of the Peace for the county Tyrone by H.E. the Lord Lieutenant of Ireland. Lieutenant-Colonel R. Kirkpatrick, in medical charge at Devonport, has been detailed for a tour of service abroad during the coming trooping season. Major C. A. Stone, lately commanding the station hospital at Bellary, Madras Presidency, has joined for duty at Cosham. Major F. Smith, D.S.O., sanitary specialist to the Second (Rawal Pindi) Division, has been transferred from Rawal Pindi to Murree. Major P. H. Collingwood, from Crownhill, has taken up duty at Devonport. Major H. M. Nicholls, from Colaba, has been appointed to the Station Hospital at Deolali. Major M. P. C. Holt, D.S.O., specialist in advanced operative surgery to the Sirhind Brigade, has been appointed to the civil medical charge of Kasauli Cantonment. Major J. J. W. Prescott, D.S.O., adjutant of the Royal Army Medical Corps School of Instruction at Newcastle, has been detailed by the War Office for a tour of service with the Southern Army in India. Major G. M. Goldsmith has arrived home on leave of absence from Maymyo, Burma. Major P. J. Probyn, D.S.O., on completion of a tour of service in China, has been appointed to the Irish Command. Major G. B. Riddick has been granted one year's extension of his tour of service in India by H.E the Commander-in-Chief. Captain A. F. Carlyon, from Devonport, has joined for duty at Okehampton. Captain C. E. Fleming, from the Royal Herbert Hospital at Woolwich, has taken up duty at the Military Hospital, Colchester. Captain H. R. Bateman has been transferred from the London District to the Shorncliffe Brigade. Captain W. F. Tyndale, C.M.G., from Dublin, has been placed in medical charge of the effective troops at Kilbride Camp. Captain J. B. Clarke, on return to duty from leave of absence, has been appointed Surgical Specialist at Colchester. Captain G. A. Kempthorne, from Piershill, has been posted to Glencorse. Captain J. H. Campbell, on return from a tour of service in India, has been attached to the Western Command. Captain L. V. Thurston, from Queenstown, has been placed in medical charge of the effective troops at Fethard. Captain G. B. Churchill has been permitted to extend his service in

India for a further period of one year by H E. the Commander-in-Chief. Captain H. W. Long has left the London District for a further period of service on the West Coast of Africa. Captain F. J. Stuart has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Fyzabad. Captain W. Mitchell, from Ambala cantonment, has taken up duty at the Military Hospital, Subathu, Simla District. The following Lieutenants have been selected by the War Office to proceed to India for duty with the Northern Army during the coming trooping season: S. S. Dykes, W. H. O'Riordan, P. S. Tomlinson, F. W. M. Cunningham, A. S. M. Winder, and V. P. Hutchinson.

INDIAN MEDICAL SERVICE.

Colonel G. W. P. Dennys has taken over the appointment of Inspector-General of Civil Hospitals in the Central Provinces. Lieutenant-Colonel A. Buchanan has taken up duty as Civil Surgeon at Amraoti. Lieutenant-Colonel C. F. Fearnside has been appointed by the Home Department of the Government of India for duty in the Madras Presidency. Lieutenant Colonel P. J. Lumsden, agency surgeon in Beluchistan, has been granted seven months' leave of absence home from India. Major J. M. Woolley has been appointed Senior Medical Officer at Port Blair. Major F. N. Windsor has been confirmed in his appointment as Chemical Examiner, Bengal Presidency, and Professor of Chemistry in the Medical College, Calcutta. Major A. T. Gage, superintendent of the Royal Botanic Gardens at Calcutta and of cinchona cultivation in Bengal Presidency, has been granted two and a half months' privilege leave of absence. Major B. H. Deare, civil surgeon at Darjeeling, has been appointed to officiate as First-class Civil Surgeon during the absence on leave of Lieutenant Colonel D. G Crawford. Captain R B. S. Sewell has been appointed Surgeon Naturalist to the Marine Survey of India. Captain C. F. Marr, medical officer of the 90th Punjabis, has been selected to officiate as Medical Storekeeper to the Government of Bombay, in succession to Major F. E. Swinton, who has been granted eight months' leave of absence home from India. Captain Denham White has joined the staff of the Presidency General Hospital at Calcutta. Captain J. H. Burgess has been appointed Specialist in Advanced Operative Surgery to the Ninth (Secunderabad) Division.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Arthur T. Falwasser to be Captain (dated June 12th, 1911).

1st Lowland Field Ambulance, Royal Army Medical Corps: Neil MacInnes to be Lieutenant (dated June 19th, 1911).

3rd North Midland Field Ambulance, Royal Army Medical Corps: Lieutenant Philip W. Turnor resigns his commission (dated July 22nd, 1911).

3rd South Midland Field Ambulance, Royal Army Medical Corps: Charles Edward Kynaston Herapath to be Lieutenant (dated April 1st, 1911).

1st Northumbrian Field Ambulance, Royal Army Medical Corps: John Hare (late Cadet Lance-Corporal, Durham University Contingent, Senior Division, Officers Training Corps) to be Lieutenant (to be supernumerary) (dated May 27th, 1911).

Yorkshire Mounted Brigade Field Ambulance, Royal Army Medical Corps: Major William K. Clayton to be Lieutenant-Colonel (dated Jan. 1st, 1911).

2nd West Riding Field Ambulance, Royal Army Medical Corps: Major William McG. Young to be Lieutenant-Colonel (dated April 1st, 1911).

THE ST. JOHN AMBULANCE BRIGADE.

The Duke of Connaught, Grand Prior of the Order of the Hospital of St. John of Jerusalem, inspected on July 22nd the members of the Prince of Wales's Corps (London District) of the St. John Ambulance Brigade in Hyde Park. The total number of all ranks on parade was 1136, including 182 nursing sisters. The Duke of Connaught, in expressing his great satisfaction at the smartness of the brigade, said that the St. John Ambulance Association, which had much increased in numbers since it was first formed, was a great asset to the nation, which owed to the officers, men, and nursing sisters a debt of gratitude for the splendid work which they were doing.

Correspondence.

"Audi alteram partem."

THE POSITION OF THE PRESENT REFORM MOVEMENT IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—With your kind permission I should like to be allowed to make a few remarks on the three letters which have recently appeared in your columns upon the above subject.

The first of these letters, from Dr. J. F. W. Silk, appeared in your issue of July 15th. All I can say in reply to such a letter is that I deeply regret to find that there is anyone of Dr. Silk's position who is so unmindful of the high character and responsibilities of the branch of practice in which he is engaged that he is content to allow that branch of practice to remain in its present unsatisfactory position and to associate himself with those ignorant and unqualified persons who at the present moment are permitted, by defects in our legislature, to render their fellow-beings unconscious by means of highly toxic drugs. None are so blind as those who will not see, and if Dr. Silk prefers to keep his shutters up and miss a sunrise which many of us hope in our declining years to look back upon with pleasure he is perhaps more to be pitied than blamed.

The second letter in your last week's issue is from the pen of my old friend, Dr. George Foy, whose contributions to the subject of anæsthesia are so well known. I mention the fact that Dr. Foy is an old friend of mine because if I do not do so someone will discover the existence of this friendship and will address a special letter to you, Sir, concerning it. Those members of the profession, however, who know Dr. Foy will realise that what he says is dictated by a desire to further a cause in which he is interested, and not by any personal considerations. I have no hesitation whatever in endorsing his contention that any seeming lack of enthusiasm in the reform under consideration is due to the fact that the passing of the measure we desire is a mere matter of time.

The third and last letter follows that of Dr. Foy in your issue of July 22nd, and is written by Mr. H. Nelson Hardy in reply to my letter in THE LANCET of July 1st. I am glad to find that Mr. Nelson Hardy admits that if there is to be legislation at all "it should commence by rendering it illegal for unqualified persons to administer such potent drugs except under the immediate supervision of a qualified medical man." The admission puts the seal, so to speak, upon the main question, for, as pointed out in your annotation of July 8th, it has already been decided by all the leading academic and professional bodies concerned that legislation in regard to anæsthetics is highly desirable in the public interest. The only outstanding difference, therefore, between Mr. Nelson Hardy and myself is in regard to methylated chloroform, and I think, perhaps, I may be able to influence Mr. Nelson Hardy in his opinions as to this particular brand by relating the following episode, particularly as those concerned in it were the very individuals upon whose dicta Mr. Nelson Hardy seems to rely. I happened to be one of those who some years ago were invited to witness (1) the administration of absolutely pure chloroform—i.e., chloroform obtained in a crystalline form by freezing methylated chloroform, and (2) the deadly effects of the resulting mother liquor. An animal—I believe a dog—was obtained, and in order that it might be subsequently subjected to the influence of the dangerous mother liquor it was anæsthetised as a preliminary by the pure chloroform. Unfortunately the animal succumbed under the influence of the pure drug, and it therefore became necessary to anæsthetise another animal. This having been done—I believe with ether—some of the highly toxic mother liquor was introduced into its circulation, in order to demonstrate the fatal results that would immediately follow. Unfortunately, however, for those responsible for the demonstration, it was found impossible to kill the animal with the mother liquor. Knowing as we do the uncertainties of demonstrations in anæsthesia, we must not, of course, attach too much importance to the incident. At the same time it is not without its significance. In the light of recent experiments it is practically certain that the first animal died from a high vapour concentration—such a concentration, in fact, as would kill in

spite of the purest drug being employed. I express no opinion as to the failure of the mother liquor to destroy the second animal. I merely quote the circumstances as observed by me on the occasion in question. In conclusion, I would submit to Mr. Nelson Hardy and to all those who hold strong views as to methylated chloroform being responsible for difficulties and accidents, that if they wish to make out a case they must be prepared to explain the fact that a large number of anæsthetists annually conduct thousands of chloroform administrations with methylated chloroform without accidents. At the same time I should welcome any inquiry that would help to settle this particular point and would gladly coöperate in any such investigation.

I am, Sir, yours faithfully,

London, July 24th, 1911. FREDERIC HEWITT.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 8th, 1911, p. 121, there appeared several replies to an article I wrote on the above subject in your issue of June 24th, p. 1691. The writers, being supporters of salvarsan, naturally tried to ignore the patent fact that the article was primarily written to vindicate the utility of mercury in the treatment of syphilis, as well as to show that the alleged superiority of salvarsan had not by any means as yet been demonstrated either on clinical grounds or on pathological tests if we accept a negative Wassermann as our test. Neisser found the test negative in only 10 per cent. of cases after salvarsan. Other workers have had somewhat similar experiences. I also agreed to differ in THE LANCET of Sept. 25th, 1909, and Jan. 8th, 1910, with Dr. Stopford-Taylor and Dr. R. W. Mackenna in supporting the superiority of inunctions over grey oil injections of mercury in the treatment of early syphilis. They now accuse me of unreasonable antipathy to injections of mercury in order to discount the views on injection of salvarsan. I still use grey oil injections, however, for *military convenience* for out-patients, but Dr. Stopford-Taylor and Dr. Mackenna, who formerly extolled mercurial injections to the sky, have abandoned their first love for salvarsan.[1] The unreasonable antipathy to mercurial injections, therefore, would not appear to rest so much with me as with the writers, who no longer use them. I have not "changed my medical politics with my coat."

From a *clinical* standpoint, my views on inunctions were expressed years before the days of Schaudinn's valuable discovery or the Wassermann-Neisser-Bruck reaction. Mr. H. W. Bayly, another of my critics, speaking of Wassermann tests, quite recently informed us "that 82 per cent. of cases treated by inunction and 35 per cent. of cases treated by injection showed some effect of treatment after only three months. As far as I have gone, therefore, my conclusion is that inunction is the best form of administration of mercury, and I gather that Mr. McDonagh's large continental experience leads him also to this opinion. Calomel injection seems much better than pill treatment, but not so good as inunction, as estimated by the Wassermann reaction. Potassium iodide and the arylarsenates have no effect on the Wassermann reaction, as far as three months' treatment is concerned."

Mr. J. E. R. McDonagh (London Lock Hospital), at the meeting of the British Medical Association in 1910, records valuable testimony when he says that a patient "should, before the disease has become generalised, receive the most active and vigorous form of treatment possible. Mercury, in the form of inunctions, is more potent in this respect than when given in any other form. ..... Working at the Wassermann reaction on the continent I found that it was *almost a rule* to obtain a '*negative*' reaction after a patient had had a course of *inunctions*, or less frequently injections." As Mr. McDonagh has applied the Wassermann test in over 5000 cases his words carry very great weight. In a series of cases at Malta in 1910 70 per cent. gave a positive reaction after a full course of 2–3 years' mercurial injections. Cases on their second, third, and fourth courses of injection were positive in 80 per cent.

I quoted only a few of the reported cases of optic neuritis and optic atrophy following the use of salvarsan. The alleged *suggestio falsi* is non-existent in my article, but apparently has originated in the inner consciousness of Dr. Stopford-Taylor and Dr. Mackenna, who, in their zeal for salvarsan, deny these recorded cases. They are vouched for, however, by persons of unimpeachable good faith and experience. The fact that Dr. Stopford-Taylor met with one or two cases of optic neuritis under mercurial treatment, presumably by injections, does not invalidate the fully recognised fact that numerous deaths and other toxic lesions have occurred under salvarsan. These have increased in numbers since I wrote my article, and there are several more deaths, bringing the number to 34 recorded cases in a year.

I think most people will also concur in the general accuracy of my statement—"that syphilis, unlike cancer, sleeping sickness, and kala-azar, is not a fatal disease." I do not think that because I hold this view I necessarily "live in a fool's paradise," as suggested by Dr. Stopford-Taylor and Dr. Mackenna. The inference should be quite clear that the above three *necessarily* fatal diseases might possibly warrant experiment with a dose of a highly poisonous drug, which, according to Dr. Stopford-Taylor and Dr. Mackenna, is capable of killing three adults, and, as in the case of chloroform, the patient commonly signs a book before taking it owing to the risk. Owing to the fact of there being at present only two cases of syphilis in hospital at Malta, and 160 performing full military duty without any signs of the disease, in a garrison of 6800 men, I am perfectly justified on the facts in vindicating to the uttermost the utility of mercury and potassium iodide in common with a vast number of other persons, if we can judge by recorded testimony in medical literature.

In reply to Mr. Bayly, who questions my views and experience on mercury and inorganic arsenic by the mouth, I reported the personally recorded observations of 18 years' specialised clinical experience without a death which enabled me to take a level-headed view of the proposition. As regards salvarsan, I quoted views and experience of other persons, as independent *primâ facie* testimony is necessarily more convincing to unprejudiced minds. I see that at a discussion on the recent position and treatment of syphilis (*Proceedings of the Royal Society of Medicine*, July, 1910), at which both Mr. Bayly and I spoke, he (Mr. Bayly) states "that he does not find Dr. Fleming's technique so reliable as Wassermann's original technique, as *modified* by me."

Mr. Boas recently lays great stress upon the importance of carrying out all Wassermann's reactions in a quantitative manner—a method which is impossible in the case of all the ordinarily suggested *modifications*. Mr. Boas obtained much better results, and stated that the Wassermann reaction has not, and *will not, obviate the necessity for clinical observation* in syphilis, but it must be undertaken by a person well versed in serological technique if the results are to be taken as being beyond reproach. In further reply to Mr. Bayly, Ehrlich insists that after an injection of "606" the patient should stay in hospital to prevent accidents, &c. In the army we ordinarily deal with very early syphilis, but how could cases ever be discharged from hospital in 24 hours, as inferred by Mr. Bayly, with unhealed chancres or contagious lesions? But admitting only 10 per cent. relapses under salvarsan is another indirect way of claiming 90 per cent. beneficial results. I conclusively showed, and others have shown, that as regards relapses the results under mercurial treatment are as good as or better than salvarsan. The small band of English workers who have dared to criticise salvarsan number three according to Mr. Bayly—namely, Mr. Ernest Lane, Mr. C. F. Marshall, and myself.

In conclusion, I will only refer to the valuable papers of Mr. Pusey and Mr. McKenna of Chicago in the *Journal of the American Medical Association*, January and March, 1911, which are instructive. Mr. Pusey states "that Ehrlich's hopes for '606' were based on animal experiments. Ehrlich recognised, as do others, that experiments on syphilised animals with the agent were not conclusive for man, and he turned over the remedy to clinicians for trial in human syphilis." He quotes Fischer, Lesser, Gaucher of Paris, and Finger of Vienna in support of his view "that salvarsan does not cure syphilis, and that we are not justified in holding out to patients any hope of cure by it, but it may prove a useful remedy, with mercury, however, as before, our chief dependence."

Mr. McKenna of Chicago states: "My own experience with

[1] THE LANCET, May 27th, 1911, p. 1412.

salvarsan and the observations I have made of this work, carried on both in this country and in Europe, lead me to the conviction that under no circumstance should salvarsan be used without also using mercury or the iodide."

John Hunter, in 1786, condemned the "ungrateful and unsettled mind of man" in his endeavour to obtain a substitute for mercury in the treatment of syphilis. He wrote: "If there is such a thing as a *specific* mercury is one for the venereal disease ..... yet mankind are in pursuit of other specifics for the disease, as if specifics were more common than diseases." His clinical observations on induration in the chancre, in my opinion, as a guide to early syphilis, is a vastly superior and more reliable sign than a *modified* Wassermann test, but even under the best auspices the margin of error with Wassermann tests is still very large, which accounts for Mr. Boas's craving for *clinical* confirmation of syphilis. I sympathise with this view, and I suggested long ago the necessity for standardising the test; at present there is a very great discrepancy in the results of various observers, and mistakes are not infrequent.

In reply to Mr. Ernest Scholl *pro* Meister, Lucius, and Brüning, Limited, who states that he writes with Ehrlich's authority, up to August, 1910, there were only 1000 cases *published* which had been treated by salvarsan. According to Mr. Bayly, Erhlich definitely stated (Oct. 5th, 1910): "I have before me the reports on over 9000 cases treated with salvarsan." Mr. Scholl says: "Salvarsan was only placed on the market generally (not only on the English market) on Dec. 15th, 1910, after 60,000 doses had been supplied free, with which about 40,000 cases were treated." Ehrlich says 9000 cases treated, but Mr. Scholl says 40,000 treated, which is a large difference. Where are the *cases* published? From August to October or even December, 1910, is a short period of time, as claimed by me. This patent preparation is registered in England under the trade name of salvarsan. The high price tends to limit criticism by precluding its more general use by medical practitioners. If, as Mr. Scholl says, 60,000 *free* doses were first given away, the fact of a free issue has possibly necessitated the present high cost, which is 7*s*. for a single dose. If humanity at large, as is claimed, is to be benefited, surely this could have been better effected by putting the preparation on the market at a much lower price.

My opinion is that mercury has been conclusively proved to be vastly superior to salvarsan in *average* cases of syphilis whether judged from a clinical standpoint or Wassermann tests. As an auxiliary drug in the treatment of syphilis, salvarsan will no doubt be useful in selected cases, but mercury comes first, and potassium iodide is a close rival.

I am, Sir, yours faithfully,

Malta, July 17th, 1911. H. C. FRENCH, Major R.A.M.C.

To the Editor of THE LANCET.

SIR,—I have read Mr. Bayly's letter in THE LANCET of July 22nd, and hasten to express my thanks to him for having designated me as an "authority of eminence" and also an eminent authority within the space of a few lines; though the vocabulary of his eulogies appears to have its limitations, I take the compliments for exactly what they are worth. In conclusion, I would merely remark that if Mr. Bayly had any genuine desire to ascertain my attitude towards salvarsan he need only have given himself the trouble to pay one visit to the Male Lock Hospital to which, as he has already informed your readers, he is the pathologist. He would then have made the surprising discovery that I had been in the habit of using salvarsan in appropriate cases ever since it was first placed on the market.

I am, Sir, yours faithfully,

Queen Anne-street, W., July 24th, 1911. J. ERNEST LANE.

INFECTIOUS DISEASE IN SCHOOLS.

To the Editor of THE LANCET.

SIR,—The regulations issued by many educational authorities with regard to the periods of exclusion of infected children and of contacts in elementary schools appear to me to be in some respects so exacting as to defeat their own object. With the amount of medical supervision at present available the duty of excluding children on account of illness falls almost entirely on the school teachers. Whilst it is no doubt our duty as school medical officers to see that the periods of exclusion are ample, and to err, if at all, on the side of safety, it is essential that we enlist the support of the head teachers in the work and that they should appreciate the necessity of the procedure. The teachers and the education authority are anxious to keep up the average attendance, and it behoves us as school medical officers to give this aspect of the question every consideration, having due regard to the health of the children.

The rules adopted by many education authorities are in some respects much more strict than the code adopted by the Medical Officers of Schools Association, who might be expected to adopt an adequate margin of safety. Thus in the trivial disease mumps the usual rule in elementary schools is to exclude an affected child for a month, whereas the Schools Association are content with a fortnight. Again, in the case of measles the corresponding periods are four weeks and two weeks respectively. In another trivial disease, German measles, an exclusion of three and four weeks is demanded, whilst the Medical Officers of Schools Association require only 10 days from the appearance of the rash. If mumps and German measles are only infectious for periods of 14 and 10 days respectively, it is obviously unnecessary to keep the children away on their account for a longer period. It is, of course, true that infants with lung complications after measles may require a full month or more before they are in a fit state to resume attendance, but older children are usually fit after a much shorter time.

I am not at all sure that it would not be better in the interests of the school under existing circumstances to do away with exclusion of contacts in the case of the non-fatal diseases—chicken-pox, German measles, and mumps. The procedure is comparatively useless when parents freely send their children to school with the diseases fully developed. So long as the teachers find children in this condition present in the assembled class, it can hardly be expected of them that they will be enthusiastic in excluding contacts in infected families for three weeks, with the consequent disastrous results to their attendance. The periods of exclusion of infected children also should in all cases be reduced to a safe minimum in order to encourage the teachers to watch for and to exclude at once the suspicious cases in the earlier stages of the disease.

I am, Sir, yours faithfully,

Guildford, July 19th, 1911. R. W. C. PIERCE.

VACCINATION IN REGARD TO LIFE ASSURANCE.

To the Editor of THE LANCET.

SIR,—The position of your correspondent, Dr. C. Killick Millard, is a little puzzling to the ordinary reader. On the one hand, he regards vaccination as a serious drawback to the detection of early cases of small-pox, and suggests that we should be better without it. On the other hand, he "regards vaccination as the greatest triumph of preventive inoculation, and would never dream of attempting to fight small-pox as a medical officer of health without its aid." He advocates vaccination of contacts, and is prepared as a *dernier ressort* to recommend the immediate vaccination of the whole community. Are not these two pronouncements somewhat inconsistent with each other? Will not the vaccination of contacts render these persons dangerous in the future? One trembles to think of what may be the result in 15 or 20 years' time of the suggested wholesale vaccination of the community. Perhaps, however, he is not serious in this and does not believe that the necessity will ever arise—at all events in Leicester. The whole tenour of his letter supports this idea. Leicester has been anti-vaccinationist for a quarter of a century and Leicester still lives. It is true there have been a few outbreaks—a few hundred cases and a few deaths—but these are mere trifles not worthy of serious consideration compared with the great cost of general vaccination and revaccination.

Well it must be admitted that Leicester has suffered less from small-pox than some of us think she deserves. One can imagine a burglar who has lived handsomely by his profession for a quarter of a century and yet who, by great wariness, combined with extraordinarily good luck, has never been convicted of anything more serious than stealing a spoon.

One can imagine also the pride he will display among his friends and the contempt he will express for the man who lives by mere work. And yet, after all, his would-be imitators often find that burglary is not the safest and most profitable of professions.

But, seriously, one would like to know what it is that Dr. Millard really wants now that the country generally has decided to follow the lead of Leicester. Does he propose to prohibit vaccination, under a penalty, except where it is recommended by a medical officer of health? Because if not (and possibly even if so) there will still be many children vaccinated who will grow up and possibly take small-pox in a mild form and consequently spread it. Dr. Millard makes much of the case of "the child, Annie L., who caused the outbreak in the Mile-End Infirmary resulting in 30 cases with eight deaths." He seems to hold this child, or those who caused her to be vaccinated, personally responsible for the outbreak! Does it not occur to him that if Annie L. *and the whole community among whom she lived* had been unvaccinated probably 50 others would have taken the disease from the source, whatever it may have been, from which she was infected? Of course, Annie L. would probably have had the disease in a more severe and recognisable form, but equally probably the whole 50 would not.

Small-pox is not *always* a severe disease even among the unvaccinated, although it is so much more frequently than among the vaccinated. The antivaccinationists of Leicester could have told Dr. Millard this. I have known cases of small-pox mistaken for chicken pox in unvaccinated children, even in the presence of an outbreak. The real reason why mild cases of small-pox are often overlooked is because what Dr. Millard regards as the obsolete system of public vaccination has rendered small-pox so rare that the great majority of people, including not a few medical men, have never seen a case. Thanks, however, to the enlightened lead of Leicester and the docile following of the whole country, this lack of experience is likely before many years to be remedied. The country will then have the opportunity of "fairly trying" the Leicester system. I sincerely hope the result may not prove more disastrous than it has been at Leicester.

I am, Sir, yours faithfully,
F. W. STANSFIELD,
Public Vaccinator, Reading.

July 22nd, 1911.

To the Editor of THE LANCET.

SIR,—In your issue of July 22nd Dr. C. K. Millard, medical officer of health, Leicester, refers to Mr. W. H. Jalland's excellent article, part of which appeared in THE LANCET on June 17th, on Vaccination in Regard to Life Assurance. Dr. Millard lays great stress on the "missed" cases of small-pox, and speaks of them as essentially a product of vaccination. His theory appears to be that infantile vaccination could be safely discarded because of these missed cases. He mentions in support of his contention that the case which caused the recent outbreak of small-pox in Mile End directly resulting in 30 cases with eight deaths *was a vaccinated case*. "Will anyone assert," he asks, "that it is probable the same unfortunate mistake would have been made if the child had been unvaccinated?" Leicester provides a distinct answer to this in the affirmative, and the results in Leicester were much more disastrous than at Mile End.

Dr. A. Warner, the resident medical officer of the isolation and small-pox hospitals, and assistant medical officer of health of the borough of Leicester, contributed an article on cases selected from the Leicester epidemics to which Dr. Millard refers, in the *Practitioner*, October, 1904, concluding as follows:—

> Personally, I do not believe that unrecognised cases in those who have previously had small-pox or who have been previously vaccinated play an important part in the spread of the disease to the unvaccinated. For if there be a severe type of the disease prevalent the modification by passage through a single resistant person is not sufficient to make the disease appear very mild in the unvaccinated person. Therefore it is recognised and measures for its control adopted. But when the disease is of a very mild type it may be equally well unrecognised in the unvaccinated, for the mildness is then not so much due to increased resistance as to an attenuated infection. Indeed, the epidemic of 1903 was started simultaneously by two unvaccinated girls having unrecognised attacks, since when many similar cases have occurred.

Dr. Millard advocates drastic changes on the so-called experience of Leicester; he himself admits that the type of the epidemics there has been singularly mild and that the good fortune of Leicester under those circumstances might not have been secured under different conditions. If epidemics followed by hundreds of cases, as in Leicester, can occur, started by "missed" unvaccinated cases, where is the advantage of dropping infantile vaccination because of "missed" cases?

I am, Sir, yours faithfully,
ARTHUR DRURY, M.B., C.M. Edin.

Halifax, July 24th, 1911.

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—I should be glad if I might, through your courtesy, be permitted to state that a copy of the letter which was published from me in your last issue is being sent to all the Members of both Houses of Parliament. The following statement has been added to it by way of introduction, as they could hardly be expected to gauge without further explanation the extent of the infliction with which we are menaced. Even within our own ranks too few seem to realise the danger threatening the higher interests of the profession, or to understand that the great position to which she has earned every claim can only be secured for her by faithfulness to her own high standards.

THE NATIONAL INSURANCE BILL AND THE PROFESSION OF MEDICINE.

The other side of the question, the hearing of which should always precede legislation, has not been referred to in the Bill and has not yet been stated by any of its critics or even of its threatened victims: it has not been placed before our legislators. The Bill and all the discussions thereon have considered exclusively the development of the medical advantage to be obtained for the insurers and for the State, and the "*lowest figure*" at which State medical service could be exacted from the profession short of actual spoliation and sweating. But the advantage and the development which ought to be secured for the other contracting party under any even-handed State contract have not yet been even mentioned. They are in danger of being overlooked in a settlement affecting for an indefinite period the vital interests of the profession, and therefore of the nation. The letter in THE LANCET of July 22nd (p. 250) sets forth that part of the case for the profession which has been passed *sub silentio*. It calls attention to the solid acquired claims of the profession to "treatment with honour" far above those level terms of "equivalent advantage," which are now also being denied it under the clause of "the lowest figure." The only consistent attitude for the profession is "*Dedi ut des.*"

I am, Sir, yours faithfully,
WILLIAM EWART.

Upper Brook-street, W., July 25th, 1911.

A MEMORIAL TO DR. C. W. LONG.

To the Editor of THE LANCET.

SIR,—A letter just received from the eldest daughter of Dr. C. W. Long tells me that the University of Pennsylvania, of which Dr. C. W. Long was a graduate, proposes to place in its medical school a bronze memorial medallion of her father. The unveiling ceremony is to take place on March 30th, 1912. The Provost of the University (Dr. Smith) "believes that for the purpose in mind, that of accentuating our recognition of Dr. Long's achievement, the anniversary of the first use of ether in surgery (March 30th) will be the most suitable date."

The plaster model of the medallion, which is much admired, is the work of a medical graduate of the University, Dr. R. Tait McKenzie, who enjoys more than a local reputation as a sculptor.—I am, Sir, yours faithfully,

July 24th, 1911. GEORGE FOY.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—I desire to raise an interesting point which has recently presented itself to me, and to obtain an expression of opinion from the profession generally. To state the matter shortly, a man, who has an epileptic son 12 years of age, desired to have the lad sterilised to prevent him from having children if he should live to a marriageable age. The method of sterilisation is not the question—whether by castration, vasectomy, or X rays—but the legal and moral aspect of the case. Has a father the right to have his son sterilised, and is a surgeon legally and morally justified in carrying it out? I am, Sir, yours faithfully,

July 18th, 1911. M.S.

*** We leave these questions to our readers, in accordance with the writer's request.—ED. L.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Visit to Edinburgh.

DURING the stay of Their Majesties at Holyrood, the King and Queen paid a private visit to Edinburgh Royal Infirmary on July 19th. They were received at the entrance by the Lord Provost of Edinburgh, the superintendent, Colonel W. P. Warburton, C.S I., I.M.S. (retired), and the treasurer, Mr. W. S. Caw. As the visit was a private one no guests were invited, but there was a large gathering of the managers and medical staff. The King and Queen visited Ward 7 on the surgical side, where Lord Pentland presented Professor F. M. Caird, the surgeon-in-charge of the ward. The King named this ward "The King George Ward." On the medical side Ward 30 was visited, this ward and Ward 7 (surgical) being the only two unnamed wards in the infirmary. Dr. Byrom Bramwell and Dr. G. A. Gibson, the physicians-in-charge of the ward, were presented to Their Majesties, and the Queen before leaving named the ward "The Queen Mary Ward." Afterwards the King and Queen paid a visit to the kitchen and before leaving the institution they signed their names in the visitors' book. After leaving the infirmary Their Majesties drove along Teviot-place and halted at the steps of the Students' Union, where an address of loyalty was presented by the President of the Union. At Bruntsfield Hospital on the previous day Her Majesty the Queen had declared open the new wing of the hospital. At both institutions Their Majesties most kindly endeavoured to notice individually by a smile or bow or kind word every patient in the wards through which they passed, and at Bruntsfield Hospital Queen Mary, after having passed along the side of one ward and out through the verandah expressed a wish to return to the ward, as she had omitted to notice the patients on the other side. At the door of the hospital there was stationed a guard of honour of the Scottish Women's First Aid Corps The Queen, during her passage through the hospital, shook hands with the lady practitioners and other officials who were stationed in the various wards.

Honours to Edinburgh Medical Men.

Before the conclusion of the Edinburgh visit His Majesty conferred the honour of knighthood on Dr. Thomas Smith Clouston and Dr. James Ormiston Affleck, honours which, as the profession in Edinburgh know, are well deserved. Sir Thomas Clouston, who had a distinguished career as a student, early turned his attention to asylum work, and after holding for ten years the post of medical superintendent of the Cumberland and Westmorland Asylum, Carlisle, was appointed superintendent of the Royal Asylum for the Insane, Edinburgh, from which post he retired in 1908. During his tenure of office at the Royal Asylum he brought about great improvements in the treatment, nursing, and housing of the insane, perhaps the most outstanding achievement being the completion of Craig House about 21 years ago. During his administration the revenue derived from the better class of private patients increased from £8000 to £35,000 per annum. Three weeks ago he received the degree of LL.D. from the University of Edinburgh. The University of Aberdeen had already conferred on him a similar honour in 1907. He has held the offices of President of the Medico-Psychological Association, President of the Edinburgh Medico-Chirurgical Society, and President of the Royal College of Physicians of Edinburgh. Among his writings perhaps the best known are "Clinical Lectures on Mental Diseases" and "The Hygiene of the Mind." For a time he acted as editor of the *Journal of Mental Science*. He formerly held the post of lecturer on mental diseases at the University of Edinburgh. Sir James O. Affleck is well known in Edinburgh as a practitioner and consultant. He graduated as Doctor of Medicine in the University of Edinburgh in 1869. He later became lecturer on practice of medicine at Surgeons' Hall, and was appointed assistant physician to the Royal Infirmary. In 1885 he became full physician and lecturer on clinical medicine in the infirmary. He was thrice appointed examiner in medicine and clinical medicine at the University of Edinburgh, and for many years acted as examiner in medicine for the Royal College of Physicians. In 1908 he received the degree of LL.D. from the University of Edinburgh. He holds the post of consulting physician to the Edinburgh Royal Infirmary, to the City Hospital for Infectious Diseases, and to the Royal Maternity Hospital. He has for some time acted as one of the medical members of the board of management of the Royal Infirmary, and his interest in that institution and in the improvement of the equipment and of the work of the nursing staff has been of great value to the infirmary.

New Victoria Dispensary for Consumption.

As the result of the Coronation appeal for £12,000 to erect a new Victoria Dispensary for Consumption in Edinburgh, the first list of subscriptions, published on July 19th, showed that a sum of £3593 had been already subscribed.

Edinburgh Royal Infirmary: Presentation to Colonel Warburton.

At a meeting of the managers of Edinburgh Royal Infirmary held on July 24th a silver cup was presented to Colonel W. P. Warburton, I.M.S., C.S.I., on the occasion of his retiring from the position of superintendent of the infirmary. The presentation was made by the Lord Provost on behalf of the subscribers, past and present members of the board of management.

Occurrence of Phthisis in Glasgow.

The statistics for last year relating to phthisis in Glasgow are now available. Such statistics, however imperfect at present, are rendered possible by the fact that phthisis became compulsorily notifiable in Glasgow on Jan. 1st, 1910. During the year 3205 primary notifications were received, of which 1308 were from practitioners in private practice and 1897 from medical men in public practice. Other 385 cases were registered on information contained in the hospital admission and dismissal sheets of the Glasgow and Govan Parish Councils, and from the death registers, making in all a total of 3590 cases for the year, which is equal to an attack-rate of 4508 per million. The deaths registered during the same period numbered 1033, representing a death-rate of 1297 per million persons. In connexion with this it is interesting to note the examination of milk samples collected by the veterinary surgeon of the corporation during the year, for investigation with reference to the presence of tubercle bacilli. Of 675 samples of milk examined 466 were from country byres, 163 from town byres, and 46 from byres whence milk is supplied to the city fever hospitals. Of the samples from country byres, 6, or 1·29 per cent., were found to be tuberculous, while from town byres 2, or 1·23 per cent., were affected. Both rates are considerably below those of former years, but the authorities state that it would probably be erroneous to assume that this indicates a sudden and striking reduction in the prevalence of tuberculosis among cattle.

Small-pox Accommodation in Glasgow.

In the course of an exhaustive memorandum bearing on the requirements of Glasgow in regard to hospital accommodation, the medical officer of health for the city states that the most urgent demand is for small-pox accommodation because of the proved unsuitability of the present small-pox hospital site. During the past 40 years a permanent provision of 150 beds proved sufficient to meet all the requirements of the limited outbreaks of small-pox which occurred between the major prevalences of the early "seventies" and 1901. The population of those years, however, was better protected by infantile vaccination than is now the case, owing to the operation of the Vaccination Act of 1907. The proportion of children certified as successfully vaccinated in infancy reached on an average 86 per cent. during the "eighties" decade and 84·5 per cent. during the "nineties." As the result of the passing of the Vaccination (Scotland) Act of 1907, however, the proportion of children successfully vaccinated fell to 75 per cent., the numbers exempted through conscientious objection on the part of the parents being 2183 in 1908 and 2653 in 1909. Making allowances for increase of population during the next 20 years a present provision of 200 beds is required, but on a plan which will admit of rapid extension to 600 beds when occasion arises.

July 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Bill.

ON July 19th, at a meeting in Dublin of the members of the combined Irish Medical and British Medical Association Committee, it was decided to appoint a deputation to wait upon the Chancellor of the Exchequer and to assure him that they would prefer to be treated in the National Insurance Bill in the same way as their English and Scotch medical colleagues; but that if it was decided to eliminate medical benefits from the Bill, then, of course, they had nothing more to say. It is stated that in Ireland both the Trades Councils and the Friendly Societies (which are branches of the corresponding English institutions) are totally opposed to leaving out medical benefits, and, indeed, if this is done, it will lead to endless confusion. Suppose a worker under the scheme wants a certificate that he is unable to work, no one but a medical man can give this, and if the worker says he cannot afford to pay for it, who is to come to his assistance? Further, as the Friendly Societies are enquiring, if a tradesman who is under the scheme in England or Scotland comes to reside in Ireland, does he cease to be able to avail himself of medical benefits? One could understand the position of those who recommended that the Bill should not apply to Ireland at all; but to try to make it applicable, and yet, at the same time, to leave out the medical benefits, shows little constructive ability in legislation, or even knowledge of public health; because, though matters are improving, Ireland has still a high death-rate from tuberculosis, and hence has great need for sanatoriums. Yet if medical benefits are excluded, so will sanatoriums be also.

New Labour Ward for the Rotunda Hospital.

The governors of the Rotunda Hospital have issued a special appeal for funds to complete a new labour ward in the hospital without drawing on their ordinary funds. In the last 20 years the number of patients has increased from 1599 to 2596 in the year. It is proposed to equip as two labour wards a large ward formerly used as a nurses' dormitory at a cost of about £1400. The Master suggests that benefactors might make themselves individually responsible for special parts of the work.

Congress of the Royal Sanitary Institute.

The twenty-sixth annual Congress of the Royal Sanitary Institute was opened in Belfast on July 24th, some 700 being in attendance. There was a reception and luncheon, at which the Lord Mayor presided. The Lord Lieutenant of Ireland, the Earl of Aberdeen, spoke at the luncheon, opened the Health Exhibition, and in the evening installed Lord Dunleath as President, who gave a most interesting address on Sanitary Reform. Sir Lauder Brunton, who was to have presided in the Section of Sanitary Science and Preventive Medicine, was unavoidably absent. In his address, which was read by Professor Letts, he pointed out the progress in the prevention of infectious disease due to discovering sources of infection and isolating the infected. Plague, leprosy, and typhus had been all but abolished in this way. He feared that small-pox was not extinct but only dormant, and the increasing disregard of vaccination might result in a serious epidemic. Tuberculosis he expected to become in a few years as rare as leprosy. He referred to the close connexion between mental defect and tuberculosis, the nature of which demanded investigation. The fresh-air cult was sometimes carried to extremes. He endorsed the idea of a pure milk Bill, and urged caution before embarking on the expenditure of a lot of money on sanatoriums. In the section on Hygiene of Childhood Sir John W. Byers, in his presidential address, considered the national importance of bettering child hygiene demonstrated by the large proportion of the total number of deaths that occurred during infancy and the early years of life; by the fact that places having high infant mortalities continued to suffer a high mortality-rate during the first 20 years of life. He said that the amount of sickness in any place varied approximately with the number of deaths, and that a high infant mortality-rate denoted also a high infant deterioration. Hence, efforts to secure the best child hygiene would result not only in a lowered infant death-rate, but in increased physique and higher mental development of children, lessened sickness, and lessened mortality up to adult life. The influences causing wastage of infant life he classified as (1) those due to the habits and homes of the people; and (2) those due to maternal ignorance. It has been found at Belfast, even among bottle-fed babies, that in the most unhealthy districts the amount of infant mortality was far less among mothers who were intelligent, who realised their parental responsibility, and who were stimulated in their efforts by regular visits and instruction at babies' clubs. He asserted the necessity for cultivating the public "sanitary conscience," and urged the health authorities to increased efforts towards proper housing, abolition of overcrowding, provision of open-air spaces, good water-supply, adequate sewerage, pure food and milk, and proper measures against infectious diseases. He advocated also the training of women for the duties of maternity and housewifery, the improving of the education of midwives, and the establishment of babies' clubs and child-welfare exhibitions. Lord Aberdeen also addressed this section.

Guardians and Private Practice.

On many occasions the Local Government Board has incited boards of guardians to attempt to come to some arrangement with their medical officers as to the fees that should be charged in private practice. In nearly every case medical men have declined to discuss their private practices with the guardians. A vacancy recently occurred in the Swinford Union for a dispensary medical officer, and a committee of the guardians was appointed to draw up a scale of fees for the government of private practice. Each candidate was asked to sign an agreement to abide by this scale, and of the two candidates who came forward one consented and was elected. It is now for the Local Government Board to decide whether the guardians acted legally in demanding agreement to the scale.

Payment of Substitute for Dispensary Medical Officer after Accident.

In the case of Mr. H. Moorhead, medical officer of the Moate Dispensary District in the Athlone Union, who met with an accident while riding in a point-to-point race which incapacitated him for duty, the Local Government Board, in accordance with the dispensary rules, has sanctioned the deduction from Mr. Moorhead's salary of the sum paid by the guardians to his substitute. The Local Government Board states that "medical officers who for their own amusement engage in a highly dangerous form of sport, such as steeplechase riding, cannot, if injured, insist upon the guardians providing substitutes for them during their temporary incapacity at the cost of the ratepayers."

July 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The General Association of French Medical Men.

SOME notable changes have recently been made in the leading officials of the old-established mutual aid society known under the name of the General Association of French Medical Men. Although associations of this description are increasing in number at the present time, the one in question occupied what might almost be called an official position, for its principal officers and the members of the committee of management were selected exclusively from the higher ranks of the profession, being members of the Academy of Medicine, professors of the Faculty of Medicine, and hospital physicians and surgeons. Its reputation was of the best, but it was nevertheless the object of unfavourable criticism by general practitioners, who complained that although created for the benefit of their less fortunate brethren, it was entirely in the hands of the *élite* of the profession—men who in their high position could not realise the hardships and difficulties incidental to some branches of practice. Many unfortunate individuals who had applied to the society for assistance were met by refusals based on an unduly strict interpretation of the rules, and, moved partly by the new spirit of unionism which prevails throughout the whole industrial population of France, certain medical men have for a long time entertained the idea of attacking the system followed by the committee of the General Association. The committee had, in fact, been to some extent imprudent. Its *Bulletin* is sent to every medical man in France, and

by making an attempt to transform this *Bulletin* into a scientific journal it fell into disfavour with the whole French medical press which would have been a loser by such a proceeding. Finally, in refusing to admit certain new members it seemed to cast aspersions on their professional character, raising against them the objection that they were already members of another medical benevolent society whose statutes allowed the reserve funds to be invested in commercial enterprises, especially in pharmaceutical businesses. The majority of the members of the General Association thought that in this matter the committee assumed the right of pronouncing judgment on disputed professional questions without having any authority to do so. At the last election of officers the new candidates supported by the dissentient party were successful, and those who had managed the affairs of the association for many years had to make room for newcomers, younger men for the most part actively engaged in practice. The position of President, which had for a long time been filled by M. Bucquoy, formerly President of the Academy of Medicine, has been bestowed on a provincial medical man, Dr. Lande of Bordeaux, president of the Union of the Medical Syndicates of France. Dr. Darras, the treasurer, is the only one of the former officers who retains his position. This little revolution has caused quite a sensation in French medical circles.

The Treatment of Fractures.

Several of the recent meetings of the Surgical Society have been devoted to an important discussion on the treatment of fractures, and most of the surgeons who take a special interest in this subject were among the speakers. It must be admitted that much diversity of opinion existed. The methods at present in favour among French surgeons are early mobilisation and massage as recommended by M. Lucas-Championnière, Lambret's *appareil à broches* modified by M. Quénu, Hennequin's constant traction apparatus, and suture of the bones. In the discussion M. Thierry, speaking chiefly with reference to fractures of the tibia attended with displacement, had much to say in favour of Lambret's apparatus, although he considered that the insertion of the pins was always a severe proceeding; he therefore preferred suture of the bones, using for this purpose copper wire rather than silver wire; in his opinion suturing prevented the formation of callus, which was undesirable and a deformity. The majority of the members of the society allowed it to be seen that they were not in favour of suturing or in a general way of operations involving loss of blood. M. Rochard recommended Hennequin's constant traction apparatus, which, although it required some dexterity for its application, did not involve any danger and gave very satisfactory results. M. Routier expressed a similar opinion, adding that Professor Delbet's various forms of ambulant apparatus promoted bony union and encouraged the normal action of the joints. M. Picqué spoke in favour of ambulant methods and against suturing of the bones, as he had known it to produce serious infections. M. Sébilleau also condemned suturing. M. Walther expressed his preference for the older methods—namely, the plaster-of-Paris splint or Hennequin's apparatus, according to circumstances; he was also very well satisfied with Delbet's ambulant apparatus; he reserved suturing for cases in which reduction could not possibly be accomplished by means of any apparatus, and in these he obtained immediate coaptation by catgut sutures, afterwards applying a plaster-of-Paris splint with subsequent careful observation. To recapitulate, the majority of the members of the society were opposed to suturing the bones, all of them except M. Thierry reserving it for exceptional cases.

July 24th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Professor von Noorden's Valedictory Lecture in the Old Medical Clinic.

IN the middle of July Professor von Noorden concluded the summer term by delivering to his students an address in which he bade farewell to the old wards in the Vienna Allgemeines Krankenhaus. In a couple of weeks the clinic, of which he is director, will be transferred to the fine new building which has been erected for this purpose a few hundred yards away from the old hospital, and in which the two gynæcological clinics are already accommodated. Professor von Noorden, in the course of his remarks, outlined the history of the old clinic, which he said had occupied its present place since 1846, but was no longer adequate for the requirements of modern medical practice. When in the period from 1846 to 1872 that renowned physician Professor Skoda was head of the clinic, it sufficed for the scientific needs of the time, and even his successor Professor Duchek raised no objection to delivering lectures to the students at the bedside. After Professor Nothnagel was appointed to the clinic in 1882 a lecture-hall and laboratories were erected; since then nothing of the nature of a modern equipment could be had for this clinic, but nevertheless that famous physician's wards and lecture-room were thronged with students. When in 1905 von Noorden was asked to take over the vacant professorship, he accepted it only on condition that a modern institute should be provided for him within a reasonable time. He had to wait over five years, however, and only now will he receive an up-to-date clinic with all the equipment required for the modern investigation and treatment of disease. Patients eligible for admission are no longer received in the old wards, but are sent directly to the new building, whilst the old patients are being dismissed or will be carried to their new beds. The space hitherto occupied by the clinic will be divided up amongst the other clinics still waiting their turn to move into a new and modern house. When all are in the new hospital, the old one will be converted into streets and gardens.

The Disciplinary Control of Medical Men.

The duties of the Medical Councils of this country include the infliction of several kinds of disciplinary correction on medical men infringing the regulations laid down in the Medical Act (*Aerzte Ordnung*). The severest punishment is the imposition of a fine not exceeding 400 kronen (£16) and the refusal of eligibility for an officer of the Council. These penalties are not severe enough, and, in fact, this kind of punishment has no deterrent effect upon delinquents. A certain proportion of the officers of the Councils therefore recommend that a Council should be empowered to remove the name of an offender from the Medical Register for a period not exceeding one year, thereby debarring him from practice for that length of time, and that this penalty should be inflicted by a court of honour (*Ehrengerichtshof*) for serious offences against medical ethics or against the rules of the Council. The proposal has been discussed by several of our medical unions, and has been nearly everywhere rejected, a court of honour not being credited with the necessary impartiality for imposing such a punishment, which would be likely to ruin its victim. Even the regular courts do not strike off the name of a practitioner from the list except in cases of serious crime, because a medical man restrained from practising his profession is generally unable to earn a living by any other means. For this reason it is held that such extensive powers over a medical man ought not to be handed over to a body of fellow-practitioners, and the general feeling of the profession is absolutely against the proposal in question. The prevalence of racial, religious, and national prejudices in Austria makes it inadvisable to entrust so much authority to a few hands.

Medical Men in Parliament.

The new Parliament, which was elected a few weeks ago, contains only a small proportion of doctors of medicine—nine out of 510, or less than 2 per cent., but the support of some 14 other Members may be counted upon in all matters relating closely to our profession. The new House will have several measures to deal with which will have an important influence upon things medical, the question of national insurance, being, as in England, a fruitful source of divergence of opinion between medical men, the Government, and the Krankencassa. The profession has several times shown its determination not to accept for beneficiaries under the Act any higher wage limit than £100 (2400 kronen) per annum. The medical men in Parliament will have to do their utmost to avert the threatening danger from their professional brethren, and to convince the legislature that the Act will be futile if the majority of medical practitioners are opposed to it.

July 24th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Mr. Dugald Christie, C.M.G.

MEDICAL men in China are pleased at the inclusion of Mr. Christie's name in the Coronation honours list. He is one of the senior medical missionaries of the Far East and has had a fine career at Mukden in Manchuria, where he has remained since his arrival in China close on 30 years ago. In 1884 his first hospital was burnt down accidentally, but was soon replaced by a larger and better building, which in turn was destroyed during the Boxer outbreak. In no way daunted Mr. Christie again rebuilt his hospital, and during the Russo-Japanese war this institution was filled by wounded soldiers of both sides, as well as Chinese, whom Mr. Christie collected from the battlefield. Though rendered unobtrusively, his services were recognised by the Czar and the Emperor of Japan, who both sent him decorations and letters of thanks. Throughout the recent plague epidemic this courageous medical missionary was the right hand of the Viceroy Hsi Liang and his staff, and was rewarded for the heavy work entailed by the implicit trust the Chinese authorities put in him and the way they followed out his advice. At present he is working hard to establish a medical school in the historic capital of Manchuria, and it is expected that the college will be completed next October. Not only the foreign community in North China, but the Chinese as well appreciate very much the official recognition he has received from the King.

Health of Shanghai.

During the past three years I have sent you an annual summary of the health report of Shanghai, as it gives a fair indication of sanitation in Treaty Ports in China, though, notwithstanding the large extent of its foreign settlement, the public health of Shanghai is better managed than in any of the other ports. This city is fortunate in the possession of an able and energetic medical officer of health, Dr. A. Stanley, who, with his staff of four inspectors and 20 assistant inspectors and the help of Dr. A. Moore and Dr. C. Noel Davis, keeps up a systematic examination of the whole settlement, and is able to carry out prophylactic measures in a way which is reflected satisfactorily in the low mortality rate compared with that of other large ports. In a population of 13 536 foreigners and 488,005 Chinese the death-rate from all causes was 20·2 per 1000 foreigners and 17·5 per 1000 Chinese. Last year there were six human cases of plague which were ascribed to the increase of rat infection in a sanitary subdistrict which borders on a pestiferous district under Chinese control, where no precautions are taken. The incidence of small-pox was considerable. 46 cases were notified among the resident foreign community, of which 13 were fatal. Among Chinese there were 304 deaths from small-pox, as compared with 143 and 863 the preceding two years. There were many cases of choleraic diarrhœa, but no case of true cholera was found where the diagnosis was confirmed by the laboratory. Typhoid fever remains an important sanitary factor in Shanghai; there were 23 cases of it, with 16 deaths. In nearly all the cases where the origin was investigated obvious breaches of the rules of health as laid down in the public health notice were observed. There were no deaths registered from Mediterranean fever, and the case mortality from diphtheria is steadily diminishing, probably owing to a more general use of antitoxin, which is now one of the staple products of the laboratory and is issued free to any indigent patient.

Scarlet fever, which is practically unknown in the tropics, now appears to have come to Shanghai to stay since its introduction by foreign immigrants in 1900 As would be expected with a recently introduced disease against which evolution has afforded no natural immunity, scarlet fever has been of a virulent type among the Chinese. It is probable that the passage of the disease through the susceptible Chinese has led to an intensification of the virus, so that it is more fatal to foreigners also. There were 32 cases among foreigners, and a case mortality of 21 8 per cent. The prevalence of tuberculosis remains at the same high level, and the heavy death-rate (669 deaths in all) from this disease is significant of local conditions of overcrowding, against which at present there is no legislation. Indiscriminate spitting and deficient air space are factors which prevail in every town and village throughout the empire and demand a heavy toll, heavier no doubt than the figures indicate, as dislike of disinfection measures results in many deaths being hidden or intentionally returned from other causes. Quite a number of cases of malarial fever, mostly of the benign tertian type, are contracted in and around Shanghai. Beri-beri has diminished, 16 cases as against 78 last year, and this improvement is held to be attributable to the measures of disinfection of body vermin among the prisoners in gaol. Dysentery, with liver abscess as a not infrequent sequel, continued prevalent. It would appear that, unlike the type of dysentery in Japan, which is bacillar in origin, of relatively greater frequency, and unattended by liver abscess, that which occurs in Shanghai is mostly amœbic in origin and prone to liver abscess.

Ten persons were bitten by dogs and underwent the Pasteur treatment. The virus of rabies in Shanghai is of an exceptionally intense character, the period of incubation being shorter than the rabies met with in dogs in Europe. Cattle plague severely affected the dairies during the year. Immunisation by Koch's gall method was offered to all the Chinese dairies but almost invariably refused. The public health laboratory appears to be a busy institution. 20,599 specimens were examined during the year for pathological diagnosis, including 19,559 rats, of which 249 were found plague infected. Over 17,000 glycerinated calf vaccine tubes were sent out during the year.

Peking, June 26th.

Obituary.

HERBERT TIMBRELL BULSTRODE, M.A., M.D. CANTAB., L R C.P. LOND , M.R.C S ENG., D.P H.,

MEDICAL INSPECTOR TO THE LOCAL GOVERNMENT BOARD, AND LECTURER ON PREVENTIVE MEDICINE AT CHARING CROSS HOSPITAL MEDICAL SCHOOL.

WE deeply regret to record the sudden death of Dr. Herbert Timbrell Bulstrode, which occurred on Friday morning last, July 21st, at his house in Palace Gardens-terrace, Kensington. He was the son of the Rev. George Bulstrode, a well-known clergyman, rector of St. Mary Stoke, Ipswich, and Canon of Ely, and was born at Gatcombe, in the Isle of Wight, where his father was rector at the time. He was educated at Emmanuel College, Cambridge, and at the medical school of St. Thomas's Hospital. At Cambridge Bulstrode could only have revealed to his more intimate friends the capacities for great work that lay in him, for he contented himself with filling the ordinary curriculum of a medical student, taking the degree in Arts and later in Medicine with no difficulty, but with no marked distinction. He was, however, already known to his personal friends as being singularly interested, far more than men of his years generally are, in large questions. He read quite outside the ordinary professional line the works of great men, with the deliberate intention to find out the pith of their teaching, and thus acquired, even while a student, a judgment which is unusual in what with all well-educated young people is essentially the cocksure period of existence. At St. Thomas's Hospital he again made no special effort to distinguish himself in examinations If he had applied himself to work for them more directly there is no doubt he would have come out near the top, but success in examinations did not appeal to him, and he passed through his medical course without carrying off any prizes, qualifying at the Colleges in 1886 and 1887, proceeding to his medical degree in the latter year, and obtaining the M.D. in 1890. But he was recognised among his fellow students as a man of more than ordinary ability. He was seen to be one who could not only talk but think, and while he formed strong opinions he was able to give expression to them clearly and to defend them forcibly and fearlessly. His readiness to put forward his views, to defend them, and to attack and cross examine on the views of others sometimes conveyed the false impression that he was self-opinionated. He really preserved a most open mind, and his main object in debate or conversation was to get at the truth and to stimulate his friends to think for themselves and to give reasons for the beliefs which they held and the opinions which they voiced.

Although he gained no class distinctions his merits did not pass unnoticed at St. Thomas's, for he was duly appointed house physician under the late Dr. J. F. Payne, with whom he remained a fast friend in after years.

In 1892 he was appointed to be one of the medical inspectors of the Local Government Board. The enormous increase of sanitary administration that was just developing gave a man like Bulstrode an unequalled opportunity. His industry was reinforced by the judgment which he had been so careful to educate, and from the first it became clear that the department would have in him a thoroughly capable administrator. For the first few years of office he carried on the routine duties of a medical inspector, in the course of which he was engaged in many interesting investigations, the results of which will be found in the Government reports and in many instances in our own columns. But later his name became more particularly associated with two branches of State medicine—namely, the prevention of tuberculosis and the protection of the populace from the evils of a vitiated fish-supply. In 1901 the British Congress on Tuberculosis brought together in this country some remarkable and variable masses of opinion with regard to the prevalence of tuberculosis, its relation to certain social factors, the reasons for its spread and also for its decrease. Sharp diversities of view in respect alike to its origin and spread helped to interest both medical men and public in what is at the present moment one of our greatest public health problems. Sir William Henry Power, at that time medical officer of the Local Government Board, had begun to publish in his reports, under the heading of auxiliary scientific investigations, inquiries which could hardly be attempted by any observer in the absence of facilities given by a Government department; and Bulstrode was told off to inquire on behalf of the Board into the various aspects of the tuberculosis question. The first fruit of his arduous and valuable work was the Milroy lectures delivered before the Royal College of Physicians of London in 1903 on the Causes, Prevalence, and Control of Pulmonary Tuberculosis. These lectures, which were printed in full in THE LANCET, showed how exhaustive Bulstrode's investigations had been during the intervening time, how painstaking his consultation of authorities, and how thorough his visits to various localities before feeling himself at liberty to make any definite pronouncement from the preventive point of view. For reasons which are clearly set out in the lectures he came to the conclusion that pulmonary tuberculosis is an infectious malady, possessing a communicability of a low order, and he set out his arguments in exactly the way to counteract the mischief which had been done by the public belief that consumption is catching like small-pox or whooping-cough. With regard to the virtues of notification of tuberculosis Bulstrode was not in the first instance very much convinced of the great good to be obtained in this manner; indeed, his original idea was that it would be well to limit notification to those cases of tuberculosis which, owing to their domestic conditions, were sources of danger to people about them, a suggestion which amounted to saying that the general sanitary surroundings of such persons should be notified to the medical officer of health rather than the disease. As his experiences of the value of notification grew Bulstrode modified this view, but he was the least bureaucratic of officials, and always maintained that notification of tuberculosis, unless conducted with great care, or if possible on some largely voluntary principle, might trespass upon the freedom of the subject. Education of children in the principles of health, compulsory insurance against sickness, the provision of sanatoriums, and lastly, the better housing and improvement of the conditions of employment of the working classes, were the factors upon which Bulstrode was prepared to rely in 1903 for an organised struggle by the State against the ravages of tuberculosis, and of the fortunate end of such a struggle he had no doubt.

Bulstrode was next commissioned to make special inquiry into the sanatorium treatment of tuberculosis, and during the following five years, in the intervals of his regular employment as an inspector, he visited most of the important sanatoriums for the treatment of tuberculosis at home and abroad, the result being the volume entitled "Sanatoria for Consumption," a standard work which was published by the Local Government Board. In this work will be found a mass of important facts derived from personal investigation of the various aspects of tuberculosis, from discussions with medical officers of health wherever special lines of attacking the various problems of prevention had been developed, and from detailed information obtained on the spot as to the prevalence of tuberculosis in foreign countries and the ways of dealing with it. Bulstrode satisfied himself, from the evidence which he had thus collected and collated, that sanatorium treatment in a sufficiently early stage gives a chance of curative results; while the isolation of potentially infectious persons from the community, and the education that such persons under a sanatorium *régime* receive in the method to be taken against the spread of infection must, he asserted, prove of pre-eminent value to the community. His study of the behaviour of tuberculosis in the German Empire, especially in relation to the improvement of the social position of the working class, is one of the most instructive portions of the volume, and has been found of particular significance just now by all men, medical or lay, who have grappled with the proposals of the National Insurance Bill.

The second important subject with which Bulstrode's name will be associated in preventive medicine is the spread of disease by shell-fish. He had written as early as 1895 on the possible spread of disease by the eating of shell-fish living in impure waters, a subject to which great attention had been called by Dr. Arthur Newsholme, the present medical officer of the Local Government Board, at that time medical officer of health of Brighton. Bulstrode was appointed by the Board to make an investigation of the serious outbreaks of typhoid fever in 1902 at Portsmouth, Southampton, and Winchester, in the latter two cases the outbreaks following public banquets. The outbreaks showed that in spite of the issue of several Local Government Board reports but little change had been made in those sewerage systems, to the effects of which the specific pollution of oyster-beds could clearly be traced, while the sanitary authority in the existing state of the law appeared to be helpless, there being no legal power vested in the authority by which the sale of oysters from contaminated sources could be prevented. Bulstrode made important reports on these outbreaks, and following upon them the hands of the local authorities were strengthened and throughout the country the risks from the sale of contaminated shell-fish were much abated. He continued to carry on and supervise such work at the Local Government Board, and as recently as last April made to the Board a comprehensive and highly instructive report on the relation of enteric fever and gastro-enteritis to the consumption of shell-fish. From this report it became easy to see that under existing conditions it is possible for large sums to be expended upon sewage purification works and yet for the effluent to contain enormous numbers of sewage bacteria, while the difficulty of periodic outflows of untreated, though highly diluted, sewage through the storm overflows remains. Bulstrode in this report took his readers upon an instructive journey around the English and Welsh littoral, and showed by means of maps and descriptions in the text the actual conditions which obtain in every place of importance, with respect to the position of the shell-fish and to the methods adopted for storing and cleansing them prior to consumption. The revelations made were decidedly disquieting, and there is no shadow of doubt left as to the necessity for legislative action.

Bulstrode's excellent scientific and administrative work was fully recognised by his colleagues and the medical world at large. He was the British delegate to the International Congress on Tuberculosis in 1905 at Paris; he on more than one occasion represented the Royal College of Surgeons of England at conferences of hygiene; he was a member of the Departmental Committee on Food Preservatives; and contributed articles on these subjects to the great medical systems and journals. He was also chairman of the Board of Studies of Hygiene of the University of London, lecturer on preventive medicine at Charing Cross Hospital, president of the Epidemiological Section of the Royal Society of Medicine, and examiner in hygiene for more than one well-known medical faculty.

We deeply regret that this valuable and busy life should have been terminated so suddenly and by an untimely death, for Dr. Bulstrode was only 52 years of age. He did work that will bear fruit for long periods to come, and both

PROFESSOR CARLO REYMOND.

pine school has lost one of its most brilliant
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THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-NINTH ANNUAL MEETING IN BIRMINGHAM.

THIS year's Annual Meeting of the British Medical Association, which is still in progress as we go to press, is the fifth that has been held in the capital of the Midlands. Previous meetings at Birmingham took place in 1834, in 1856, in 1872, and in 1890. The arrangements for the present gathering have been admirably organised, and the whole affair has already proved itself to be a great success. Birmingham is particularly well suited for a meeting of this sort, because the main buildings of the city, which lend themselves appropriately to the scientific and social functions of the Association, are concentrated for the most part within a small area.

Although surrounded by densely populated manufacturing areas Birmingham is a clean city, thanks to its elevated situation. Even within the precincts of the city there is abundant evidence of its great association with the manufacture of iron and steel, but the offensive emanations of the great foundries, alkali and acid works in the adjoining "Black Country," do not appear to reach Birmingham.

One of the first impressions forced upon the visitor who is addicted to the frequent use of soap and water is the luxury of a soft water-supply. Birmingham long ago realised the necessity of going far outside its own resources of rivers with an uncertain flow, and of wells with a doubtful endurance, and closed promptly with the proposal to secure an unlimited supply of soft water from the Welsh hills. The scheme was realised in 1908, and there is now available from the watershed of the Elan and Claerwen a supply of water amounting to 72,000,000 gallons daily. Luckily it is not a moorland acid water, but is faintly alkaline and without action upon lead.

With equally commendable perspicacity the sanitary authorities grasped early the meaning of the developments of biological experiments in regard to the disposal of sewage. The whole of the sewage of Birmingham, representing a population of over 500,000, is now treated by means of bacteria beds, and one of the most interesting demonstrations offered to the visitors was the complete resolution of a nuisance and source of evil into simple innocuous materials by a biological process the success of which is due to careful engineering in able hands.

The Exhibition of Surgical Instruments, Drugs, and Foods was held in the Bingley Hall, a place of meeting which has associations with great political movements and prize agricultural stock. The Bingley Hall, in fact, is the Agricultural Hall of Birmingham. It covers a large area, but only about one-third of its space was allocated to the "annual museum." There was an obvious falling off in the number of exhibitors on this occasion, the list being a comparatively small one. It was not easy, moreover, to find a stall presenting exhibits of a really novel kind, or an array of materials which were not already familiar to the regular attendant at this annual event, though novelties were to be seen, as we indicate elsewhere. There was little to be seen that was of real scientific interest, apart, that is to say, from an obvious commercial motive. It was most gratifying, however, to note how lively is the interest taken nowadays by manufacturers of fine products in the scientific side of their work. The standardisation of drugs, both physiological and chemical, furnishes an illustration of this excellent attitude. The exhibitors were well supported by the organising authorities, who did their best to make the attendance a satisfactory one. The exhibition was opened on Tuesday, July 25th, by the President-elect, who was accompanied by the President and the Lord Mayor of Birmingham. We commence this week in another column a review of the more important exhibits shown, following the same classification of them which we have adopted on previous occasions.

The representative meeting began on Friday of last week, July 21st, in the large theatre of the Midland Institute, next door to the town-hall, which had been converted into a general reception room for all those attending the annual meeting. Immediately behind the institute and the town-hall is the large University building in Edmund-street, and this has been devoted to the work of the 16 scientific sections.

The sittings of the representatives ended on Tuesday morning, July 25th, and were followed that afternoon by the annual general meeting, which always marks the commencement of what may be called the annual meeting proper. The religious services were followed by successful garden parties by Lady Lodge and by Mrs. Saundby, wife of the President-elect of the Associaton; and on the same evening, in the Grand Hall of the University of Birmingham, at Bournbrook (some four miles from the heart of the city), Sir Henry Butlin, the retiring President, vacated the chair for Professor Saundby, whose Presidential address is printed in another part of this issue of THE LANCET. The first day's programme ended with a pleasant smoking concert in the Drill Hall, organised by the Birmingham and District General Medical Practitioners' Union, and presided over by Dr. H. W. Langley Browne.

At the annual general meeting on Tuesday afternoon Sir Henry Butlin resigned his office as President, and in a few felicitous words introduced his successor and placed the presidential badge of office around Professor Saundby's neck. Both the retiring President and the President-elect were received with great enthusiasm and were welcomed by graceful speeches from Professor J. T. J. Morrison and Dr. Bruce Gough. The vote of thanks to Sir Henry Butlin for his distinguished services to the Association and to the medical profession was carried with loud and prolonged acclamation, every member present rising from his seat and cheering warmly. The tributes paid to the retiring President were applauded in a very striking manner, which showed the esteem and affection in which he is held by all members of the Association.

On Tuesday afternoon a service was held for the members of the Association at the Pro-Cathedral when the Bishop of Birmingham, Dr. Gore, preached the sermon. There was a good attendance and, as on previous occasions, the collection was divided between the British Medical Benevolent Fund and Epsom College. Dr. Gore made an excellent appeal on behalf of these institutions. A service was also held at the Church of the Oratory of St. Philip Neri, Edgbaston, the sermon being preached by Monsignor Henry Parkinson, Rector of Oscott College.

Before Professor Saundby delivered his Presidential Address on Tuesday evening, at the University at Bournbrook, the foreign guests of the Association were formally introduced to him, and he offered a welcome to the delegates from the Oversea Dominions. A certificate of honorary membership was then presented to the Right Honourable Joseph Chamberlain in recognition of his great services to tropical medicine,

and this was received and acknowledged on his father's behalf by Mr. Neville Chamberlain. After this the Middlemore prize of the Association was presented to Dr. C. W. Gordon Bryan, for his essay on "Serum and Vaccine Therapy in connexion with Diseases of the Eye." The Presidential Address was attended by a large gathering of members and ladies, and academical dress (as at the religious services and the Lord Mayor's reception) was worn by a considerable number of those present. The new President was supported by the Lord Mayor and the Vice-Chancellor of the University. Over 720 members had registered their names by Tuesday afternoon as attending the annual meeting, and a large proportion were accompanied on their visit by ladies.

A concise and instructive pathological museum has been organised under the superintendence of Professor R. F. C. Leith, in the Pathological and Brewing Laboratories of the University College in Edmund-street, in close proximity to the meeting-rooms of the various scientific sections. Praise is due to Mr. A. W. Nuthall, the honorary secretary of the museum, and to the various honorary secretaries and curators of the ten constituent sections of the museum. The exhibition is excellent. Special subjects are selected for illustration in the divisions of medicine, surgery, gynæcology, ophthalmology, and radiology; and there are many beautiful casts and wax models illustrating diseases of the skin. More than 80 microscopes have been lent by the University to the Museum Committee for this occasion.

The more strictly scientific work of the meeting began on Wednesday, July 26th, when the various sections sat from 10 to 1 o'clock in the classrooms of the University building. The Address in Medicine was delivered at 12.30 on Wednesday in the Midland Institute, and the Address in Surgery on Thursday at the same place and time. Both are printed in this issue of THE LANCET. The handy situation of the institute enabled many of those members who had been engaged in the morning's work of the sections to listen to these two instructive addresses. The most important social and academical events on Wednesday and Thursday were the Lord Mayor's reception, the Degree Congregation, the annual dinner, and a garden party given by Mrs. Gilbert Barling.

It was announced during the course of the meeting that the next annual meeting of the Association would be held in 1912 in Liverpool, and that the President on that occasion would be Sir James Barr, consulting physician to the Liverpool Royal Infirmary.

THE BRITISH MEDICAL ASSOCIATION AND THE NATIONAL INSURANCE BILL.

The Representative Meeting of the British Medical Association, which began its sittings in committee on Friday, July 21st, came on Tuesday last to a definite declaration of policy with regard to the National Insurance Bill, and as a result resolutions were passed as instructions to the Council of the Association, by which body they will be transmitted to the Chancellor of the Exchequer. The demands which reached their definite shape under six headings at the meeting of representatives held in London at the end of May are all maintained. The six headings of these demands are:—

1. An income limit of £2 a week for those entitled to medical benefit. 2. Free choice of doctor by the patient subject only to the consent of the doctor to attend him. 3. Medical and maternity benefits to be administered by Local Health Committees and not by Friendly Societies. 4. The method of remuneration of medical practitioners adopted by each Local Health Committee to be according to the preference of the majority of the medical profession of the district of that committee. 5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service. 6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Local Health Committees; and statutory recognition of a local Medical Committee representative of the profession in the district of each Health Committee.[1]

[1] THE LANCET, June 10th, 1911, p. 1616; July 15th, 1911, p. 194.

The proceedings of the committee were *in camerâ*, and only the resolutions finally arrived at by it were placed before the representative body, which confirmed them all. The demand, however, for a maximum income limit of £2 per week in respect of medical benefits to apply throughout the country was confirmed, with the proviso that in any district in which the local profession considers that the circumstances justify fixing a lower limit than this it should have the support of the Association in so doing. The meeting approved the new suggestion—based to some extent upon a hint given by Mr. Ramsay Macdonald in his speech on the second reading debate—that persons might receive their medical benefit in the form of a contribution to the cost of their medical attendance under private arrangements made by them with medical men of their own selection, instead of in the form of medical attendance arranged by the Local Insurance Authority. Persons whose income is above the statutory or locally agreed limit would take their benefit in the form of a contribution to the cost of their attendance. Persons below the limit would have the option, subject to the approval of the Local Authority, which should consult with the Local Medical Committee, to be appointed in accordance with an amendment placed by the Chancellor of the Exchequer on an Order Paper of the House of Commons on July 25th. The Council was instructed to take every means in its power to carry out the policy of the Association above described, and to ensure a continuance of the efforts already made, with a view to obtaining a statutory fixation of the £2 per week income limit in respect of medical benefits.

THE ANNUAL EXHIBITION.

AN inaugural ceremony has not hitherto been the rule in connexion with the annual exhibition of surgical appliances, drugs, special foods, and so forth, but this year the authorities decided to give the exhibition a fair start with a formal opening by the Lord Mayor of Birmingham, who was supported by the ex-President and President of the Association. The Lord Mayor was given a very hearty vote of thanks by the audience, which comprised a good many of the interested exhibitors. This departure was successful; it introduced at once a large attendance of medical men to the scene, which soon became a busy one. The display of surgical instruments and hospital appliances attracted perhaps the most interest, and on the whole this section of the exhibition enjoyed a larger representation than any other. In magnitude the exhibition could not, of course, compare with the exhibition in London last year, which was officially stated to be the largest collection of exhibits ever brought together under the auspices of the Association. Though, however, the exhibits were not so numerous as before, there was decided evidence of their interesting character, and the exhibitors found plenty to do in pointing out to the visitors the special features of the foodstuffs, drugs, or surgical and hospital appliances which were presented to view. It is true there were many familiar objects shown, but there were also quite a large number of exhibits which attracted interest because they were new.

As on previous occasions, we present again a rapid review of the more important exhibits in the following order: (1) Surgical Instruments and Appliances; (2) Drugs; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages; (6) Publications; and (7) Exhibits of a Miscellaneous Character.

I.—SURGICAL INSTRUMENTS AND APPLIANCES.

It is difficult to do justice to this section owing to the large number of instruments and appliances which were shown. All the well-known makers were represented and the stalls of each displayed a profusion of new appliances of the greatest interest to those engaged in advanced medical and surgical practice. There were up-to-date appliances for treatment by radiant heat, light, and electricity, illustrations of the application of radium in disease, and besides there was shown a great number of improvements in the various instruments employed in surgical operations. Invalid beds and hospital furniture were also a feature of this section of the exhibition. It was noticeable that a good many firms who hitherto have confined their attention to the preparation of pure drugs or organo-therapeutic remedies have added to their specialities certain medical and surgical appliances. Messrs. Siemens Bros. and Co., Limited,

of Caxton House, Westminster, were well to the fore with their electric apparatus, and their "oscillothermex," a combined apparatus for diathermic, high frequency, and X ray treatment with oscillating discharges, was inspected with considerable interest. The exhibit included also an admirably designed universal electro-medical apparatus for the application of galvanisation, faradisation, cataphoresis, cautery, and so on. Amongst the exhibits also were some instruments made of tantalum, which in dental use prevents the discolouration of the fillings. The same metal is used in evaporating dishes, forceps, and injection needles. Lastly should be mentioned their demonstration of radium salts, applicators, and other radioactive appurtenances. Close by, the well-known surgical instrument makers, Messrs. Down Bros., of 21 and 23, St. Thomas's-street, London, S.E., showed a very interesting collection of modern surgical instruments conforming to the design of experienced surgeons, while the exhibit included examples of aseptic hospital furniture, operation tables, and so on, which were generally admired. Local skill was represented in the surgical dressings' exhibit of Messrs. Southall Brothers and Barclay of Lower Priory, Dalton-street, and Dale End, Birmingham, who gave illustrations of the different stages of manufacture, from raw material to finished cloth, of gauzes and lints and antiseptic and aseptic dressings. The exhibit of Radium, Limited, of 4, Albert-square, Manchester, served to turn attention to this new development of treatment. This firm provides an apparatus for rendering water radio-active and they also prepare artificial radio-active earths of guaranteed efficiency for local applications. There was shown also a recently designed apparatus for the inhalation of radium emanations combined with oxygen and fountain distributers for the distribution of radium emanations in the air for simple inhalation treatment. Messrs. Chas. Hearson and Co., Limited, of 235, Regent-street, London, W., exhibited their new anhydric electric incubators, and an electric high-speed centrifuge was shown working at a speed of 9000 revolutions per minute. A well-known local firm, Messrs. Philip Harris and Co., Limited, of Edmund-street, Birmingham, gave special prominence to the hospital aseptic furniture of their manufacture. It included a portable operating-table made under the suggestion of Mr. Bernard J. Ward, which can be made adjustable with great ease for the Trendelenburg, lithotomy, and horizontal positions. There was demonstrated at this stall also a special snow apparatus producing solid carbon dioxide in cones for producing anæsthesia for minor operations. Besides special foods and an interesting series of pharmaceutical products, Messrs. James Woolley, Sons, and Co., Limited, of Manchester, exhibited their all-glass aseptic sprays and syringes, and an adjustable truss which offers decided advantages. An interesting exhibit was that of Messrs Spencer, Heath, and George, Limited, of 48 and 52, Goswell-road, London, E C., which comprised some well-thought-out medical and anthropometric apparatus. Amongst the objects shown were plinths, massage tables, booms, rib-stools, and an ingenious "stationary cycle exerciser" for orthopædic gymnastics, providing a frame for lady's or gentleman's use. Messrs. J. Nesbit-Evans and Co., of Floodgate-street, Birmingham, deserve a word of praise for their hospital bedsteads and accessories, including an anti-accident children's cot, an anti-sagging lunatic patient bedstead, a spring wire side epileptic bedstead, a bedside table, and aseptic bed-screen. The Skeffington patent recumbent invalid lifters (address of manufacturers, 49, Ulundi-road, Blackheath, S.E.) received considerable attention, and naturally enough, having regard to the extreme comfort which they offer to the patient in bed and to the convenience which they afford to the medical attendant. The "Skeffington" prevents a weak patient from slipping towards the foot of the bed, maintaining the patient in the sitting posture without any exertion on his part; a patient may be lifted in the sheet bodily so that the bed can be re-made underneath while the patient is still recumbent, and the bedpan can be applied in an easy and undisturbed way. With similar admirable objects in view the apparatus have been made known respectively as the "Anastasia," the "Catharios" (for lifting the patient's sacrum only), and the "Skeffington cushion," a pneumatic cushion which when deflated can be easily withdrawn from the patient's back, and when inflated by a pump gently lifts the sacrum only.

The surgeon found much to interest him in the large assortment of up-to-date surgical instruments presented by the Holborn Surgical Instrument Company, Limited, of Holborn-circus, London, E.C. The Holborn £25 set of instruments adapted for the surgeon commencing to practise makes a very suitable article for presentation. Specimens of hot-air chambers and suction glasses for Bier's treatment were shown by this firm. Mr. G. H Zeal, of 82, Turnmill-street, London, E.C., exhibited many variants of his "Repello" thermometer, an ingenious and accurate instrument which does not require shaking to reset. There were many appliances worth studying at the stall of Messrs. Reiner and Keeler, Limited, of 9, Vere-street, Cavendish-square, London, W. There were, for example, the Edridge-Green colour perception lantern and the same author's classification test and pocket test, and besides an amblyoscope and exophthalmometer.

Messrs. Pocock Brothers, of 235, Southwark Bridge-road, London, S.E., exhibited sections illustrating the material used in padded rooms, besides an indiarubber bed and hospital sheeting with enduring qualities. The stand of Messrs. Mayer and Meltzer (71, Great Portland-street, London, W.) received close attention from surgeons, the instruments shown bearing in so many cases, and quite rightly, the description of "latest." The firm drew attention in particular to an improved aseptic guillotine designed by Mr. Hugh Jones, but we saw many instruments displayed that have been described fully in our columns by their makers. The "Wassmuth's Sanum" Company, of 5, Sloane-street, London, S.W., exhibited a new antiseptic which is described as superior to all other antiseptics on account of its "greater efficacy and harmlessness." Chemically, it is "liquor natrii chloro-borosi." What was correctly described as "an exhibit of the newest ideas in surgical instruments and medical appliances" formed the attraction of Messrs. John Weiss and Son's stall (287, Oxford-street, London, W.). Here was shown "606" apparatus both for intravenous and intramuscular injection. The exhibit included some modern forms of spinal analgesia syringes, saline infusion apparatus, carbon-dioxide snow apparatus, and an ophthalmological section comprising the Edridge-Green lamp for colour test, examination lamps for retinoscopy, and other instruments of value in advanced ophthalmological practice. Messrs. Fassett and Johnson, of 86, Clerkenwell-road, London, E.C., exhibited the well-known and approved standard gauzes, aseptic ligatures, medicinal and surgical plasters of Messrs Seabury and Johnson. Among the exhibits of Messrs. Walton and Curtis, of 190, Broadhurst-gardens, West Hampstead, London, N.W., was the "Curtis" abdominal support, designed by Mr. Arbuthnot Lane, which is found to give direct antero-posterior support without pressure on the hips and to retain its position without the use of perineal straps regardless of posture. The exhibit included a hydrostatic cupper and aspirator invented by Dr. H. Macnaughton-Jones. Surgical dressings were well represented at the stall of the Liverpool Lint Company of Mark Street Mills, Netherfield-road North, Liverpool, two features of the exhibit being their "Vulnoplast" material, which affords a complete dressing with self-adhesive edges, composed of several layers of gauze treated with approved antiseptics. The dressing does away with bandaging or pinning. "Impermiettes" should be mentioned also among the exhibits of this firm. They present advantages over ordinary rubber-coated sheetings owing to their durability. They can be sterilised and cleansed without injuring the fabric. The personal demonstration by Mr. C. A. Hoefftcke (of 21, Woodstock-street, Oxford-street, London, W.) of his extension appliances drew the attention of a good many visitors, and excellent evidence of the value of these appliances in the treatment of tuberculous joints was furnished in a series of skiagrams. The exhibit included an appliance for obtaining extension of the spine in the treatment of scoliosis and caries or injuries to the spine, appliances for fractures, a corset for lateral curvature, and artificial legs made on the same principle as Hoefftcke's appliances for joint disease. The exhibit of Messrs. Reynolds and Branson of Leeds contained many new departures in medical and surgical apparatus. There were apparatus for the injection of salvarsan, for the local application of solid carbon dioxide, for the administration of oxygen alone or with alcohol, for saline infusion, and so forth. There was a profusion also of instruments for minor surgical operations, all well made

and in many cases owing their inspiration to well-known surgeons. Messrs. T. Holland and Son, of 46, South Audley-street, London, W., showed specimens of their well-known instep supports for flat-foot and metatarsalgia, as well as their natural shape boots. The study which this firm has given to the question of a comfortable boot deserves recognition. There were some useful surgical appliances to be seen at the stall of Messrs. Anderson and Dodds, of 11, Broad-street Corner, Birmingham, including a watch-spring pessary introduced by Dr. N. Spriggs, and a device which obviates the inconvenience attaching to the wearing of elastic thigh stockings, by keeping the stocking in its place and preventing it from slipping down the thigh. Much ingenuity marked the appliances shown by Mr. Harry Brook, of 25, Brackenbed-lane, Halifax, which are designed to palliate disfigurements of the face. There were shown here artificial noses, ears, chins, fingers, all designed with the object of concealing loss of feature through disease or accident, and as far as illusion is possible in such cases, these inventions would create it.

Messrs. Claudius Ash, Sons, and Co., Limited, of 5 to 12, Broad-street, Golden-square, London, W., made anæsthetics and anæsthetic apparatus the special feature of their exhibit, which included nitrous oxide gas outfits, and outfits with nitrous oxide gas and oxygen and the appurtenances incidental to the administration of general and local anæsthetics. Messrs. Hawksley and Son of 357, Oxford-street, W., showed a collection of blood-pressure apparatus designed by well-recognised authorities. The exhibit included, amongst other novel appliances, the new portable mercurial hæmometer of Dr. George Oliver, which, apart from being compact, possesses a vacuum chamber which renders temperature effects upon the readings nugatory, and a clinical recording apparatus.

There can be little doubt that this section of the Annual Exhibition grows increasingly interesting each succeeding year, and the present occasion shows that surgical and hospital appliances claim a very big share of the exhibits introduced to the notice of the visitors.

(To be continued.)

Medical News.

UNIVERSITY OF LONDON.—At examinations held in July the following candidates were successful:—

M.D. EXAMINATION.

Medicine.—Phirozshaw Cooverji Bharucha, B.S., University College Hospital; John Webster Bride, B.S., Victoria University of Manchester; Manchersha Dhanjibhai Dorabji Gilder, B.S., University College Hospital; Alexander Edward Gow, B.S., St. Bartholomew's Hospital; Frederick William Higgs, B.S., St. George's Hospital; Ernest Williams Jones, University of Birmingham; David Judah, B.S., and Clement Lovell, B.S., University College Hospital; and Geoffrey Viner, B.S., and Arthur Lowndes Yates, B.S., St. Bartholomew's Hospital.

Midwifery and Diseases of Women.—Elsie Mary Chubb, B.S., London (Royal Free Hospital) School of Medicine for Women; Joseph Bernard Dawson, B.S., University of Birmingham and St. Bartholomew's Hospital; William Poole Henley Munden, B.S., Guy's Hospital; John Hobart Nixon, B.S., St. Mary's Hospital; Alfred Howard Parkinson, B.S., B.Sc., University of Leeds; and Robert Evans Thomas, B.S., University of Bristol.

State Medicine.—Alfred Ball, B.S., and Walter Francis Corfield, B.S., University College Hospital; Matilda Hunt, B.S., London (Royal Free Hospital) School of Medicine for Women and Royal Institute of Public Health; James Jenkins Paterson, B.S., B.Sc., University of Liverpool; Alfred Charles Foster Turner, B.S., St. Thomas's Hospital; Thomas Williams Wade, B.S., University College, Cardiff, and Charing Cross Hospital; and Cuthbert Ferguson Walker, B.S., St. Mary's Hospital and Victoria University of Manchester.

Tropical Medicine.—Daniel Elie Anderson, B.A., B.Sc., London School of Tropical Medicine; Francis Victor Owen Beit, St. Bartholomew's Hospital and London School of Tropical Medicine; Friedrich Grönе, St. Bartholomew's Hospital; John Hanna Murray, University College Hospital and London School of Tropical Medicine; and Charles Cecil Connock Shaw, B.S., St. Mary's Hospital, London School of Tropical Medicine, and Post-Graduate College West London Hospital.

M.S. EXAMINATION.

Surgery.—Cecil Augustus Joll, B.Sc., University of Bristol and University College Hospital; and Edward Leslie Martyn Lobb, Guy's Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—C. B. Hawthorne (Sections I. and II.), Cambridge and Birmingham; J. S. H. Lewis (Section I.), University College Hospital; F. G. Norbury (Section I.), Glasgow; E. H. Roberts (Sections I. and II.), University College Hospital; and W. H. Watson (Sections I. and II.) and R. M. Wingent (Section I.), Guy's Hospital.

Medicine.—N. S. Adler (Section II.), Berlin; A. de Luyck (Section II.), Brussels; A. E. L. Devonald (Sections I. and II.), St. George's Hospital; P. McGinnis (Section I.), Dublin; and E. H. Roberts (Sections I. and II.), University College Hospital.

Forensic Medicine.—E. H. Roberts, University College Hospital.

Midwifery.—A. E. L. Devonald, St. George's Hospital; J. S. H. Lewis, University College Hospital; C. C. Messiter, St. Bartholomew's Hospital; P. J. Montgomery, Middlesex Hospital; C. E. Reckitt, Guy's Hospital; and E. H. Roberts, University College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—N. S. Adler, C. B. Hawthorne, A. de Luyck, and E. H. Roberts.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following students at the school were successful at the examination closing the thirty-sixth session (May–July, 1911):—

*Captain D. Heron, I.M.S., M.B., Ch.B. Edin.; F. Grone, M.B., D.P.H.; E. C. Braithwaite, M.B., B.S. (Colonial Service); L. W. Davies, M.D. (Colonial Service); J. T. Wigham, M.D., D.P.H.; R. E. Drake-Brockman, M.R.C.S., L.R.C.P. (Colonial Service); Major A. Moorhead, I.M.S., M.B., C.M.; N. S. Messiha, Cairo School of Medicine; D. Duff, M.B., B.Ch. (Colonial Service); G. O. Teichmann, M.B., B.S., M.R.C.S., L.R.C.P.; C. A. Crichlow, M.B., Ch.B.; A. T. Ozzard, M.R.C.S., L.S.A. (Colonial Service); W. I. M. Clark, M.B., Ch.B. (Colonial Service); M. W. Fraser, M.B., Ch.B. (Colonial Service); H. R. M. Ferguson, M.B., B.Ch. (Colonial Service); J. Y. Wood, M.B., Ch.B. (Colonial Service); H. S. Gettings, L.R.C.S., L.R.C.P., D.P.H.; S. P. Proctor, M.B., Ch.B.; R. O. Sibley, M.B., L.R.C.S., L.R.C.P.; G. C. Winchester, M.B., C.M.; R. Bury, L.R.C.P., F.R.C.S. (Colonial Service); B. J. Courtney, M.D. (Colonial Service); W. H. Bomford, L.R.C.P. & S.I. (Colonial Service); and J. Bruce Bays, M.D., M.B., M.R.C.S.

* With distinction.

The following students also obtained the M.D. Lond. in Tropical Medicine (Branch VI.):—

D. E. Anderson, M.D. Paris, M.B. Lond.; F. V. O. Beit, Captain I.M.S., M.B. Lond.; F. Grone, M.B. Lond., D.P.H.; J. H. Murray, Captain I.M.S., M.B. Lond., M.R.C.S., L.R.C.P.; and C. C. C. Shaw, Captain I.M.S., M.B., B.S. Lond.

UNIVERSITY OF DURHAM.—At examinations held recently the following candidates were successful:—

DEGREE OF BACHELOR OF MEDICINE.—THIRD EXAMINATION.

Arthur Butterfield, Garfield Carse, Cyril Duncan, Walter Armstrong Elliott, Sarah Louisa Green, Nora Murphy, William Somerville Murray, Charles O'Hagan, and Carina Augusta Barry O'Neill, College of Medicine, Newcastle-upon-Tyne; Lionel Glover Pearson, University of Leeds; and Evelyn Ritson (First-class Honours), Charles Henry Robson, Cedric Overton Shackleton, Arthur Sutcliffe, and Gordon Stewart Woodman, College of Medicine, Newcastle-upon-Tyne.

SECOND EXAMINATION.

Cyril Armstrong, William John Bowden, and Geoffrey Bede Egerton, College of Medicine, Newcastle-upon-Tyne; Henry Hawes Elliot, College of Medicine, Newcastle-upon-Tyne, and Guy's Hospital; Charles Norman Gover, Philip Gunn, Frank Wilson Harlow, and Cyril Jacobs, College of Medicine, Newcastle-upon-Tyne; David Rees Jones, College of Medicine, Newcastle-upon-Tyne, and Guy's Hospital; Robert Rutherford Lishman, Francis Metcalfe, Ernest Charles Gilchrist Parker, and Jane Penman (Second-Class Honours), College of Medicine, Newcastle-upon-Tyne; Hugh Ley Puxon Peregrine, College of Medicine, Newcastle-upon-Tyne, and Guy's Hospital; Home Alexander Playfair Robertson, College of Medicine, Newcastle-upon-Tyne; Eric Knowles Ryan, College of Medicine, Newcastle-upon-Tyne, and University of Sheffield; Philip Savage, Guy's Hospital; Kirton Ivor Seager Smith, College of Medicine, Newcastle-upon-Tyne; Charles Rees Smith, Guy's Hospital; and James Calvert Spence, College of Medicine, Newcastle-upon-Tyne.

FIRST EXAMINATION.

Elementary Anatomy and Biology, Chemistry, and Physics.—Henry Evers (First-Class Honours), College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—John Alexander Charles, Ethne Haigh, George Irving, Hubert Ransome Markham, John Eric Measham, William McDonald Pettigrew, Bertram Sergeant, Alfred Smirthwaite, and Reginald Leslie Wright, College of Medicine, Newcastle-upon-Tyne.

Elementary Anatomy and Biology.—George Gordon Baty, College of Medicine, Newcastle-upon-Tyne; John Francis Carter Braine and Cyril Charles Herbert Cuff, Guy's Hospital; Lionel Basil Frere, College of Medicine, Newcastle-upon-Tyne; Leonard Wilfred Hearn, Sheffield University; Cecil Neild Joseph and Frederick Lisle Newstead, College of Medicine, Newcastle-upon-Tyne; and Douglas Oliver Richards, Guy's Hospital.

Elementary Anatomy.—Harold Kingston Graham Hodgson, St. Thomas's Hospital.

DIPLOMA IN DENTAL SURGERY (L.D.S.).—FIRST EXAMINATION.

Chemistry and Physics.—John Thomas Smith (First-Class Honours) College of Medicine, Newcastle-upon-Tyne; and George Galloway Robertson (Second-Class Honours), College of Medicine, Newcastle-upon-Tyne.

At the Convocation held on July 22nd the following degrees and diploma were conferred:—

Doctor of Medicine.—Edwin Gilbert Emerson Arnold, Richard Henry Bellwood, Henry Glendinning Davison, Horsley Drummond, Patrick Albert Galpin, Charles Westland Greene, Robert William Nevin, and John Ralph Prior.

Doctor of Medicine for Practitioners of 15 Years' Standing.—James Moore Bennett, Richard Dagger, Patrick Joseph Flanagan, Edward Palmer Stewart Gane, William James Hoyten, Henry Percival Johnson, Arthur Edwin Joscelyne, Frederick Charles Langford, William Henry Payne, and Frederick George Meynell Philps.

Doctor of Hygiene (D.Hy.).—Robert Samuel Trotter.

Master of Surgery (M.S.).—Charlotte Purnell.

Bachelor of Medicine (M.B.).—Oscar Frederick Don Airth and John Hamilton Barclay, College of Medicine, Newcastle-upon-Tyne; Richard Murray Barrow, St. Bartholomew's Hospital; Michael Brennan, Joseph Jopling Brown, Eric Lawrence Hancock, Thomas Albert Hindmarsh, and William Hudson, College of Medicine, Newcastle-upon-Tyne; William Hughes, Edinburgh School of Medicine; Frank Hutchinson Kennedy, John Lumb, and Benjamin Bell Noble, College of Medicine, Newcastle-upon-Tyne; John Howard Owen, Guy's Hospital; Elliot Jessie Ramsbotham, London School of Medicine for Women; Felix Stephens Rood, University College, London; Madeline Rosa Shearburn, London School of Medicine for Women; and Eleanor Walkinshaw and Arthur Hyde Wear, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Surgery (B.S.).—John Hamilton Barclay, College of Medicine, Newcastle-upon-Tyne; Richard Murray Barrow, St. Bartholomew's Hospital; Michael Brennan, Joseph Jopling Brown, Eric Lawrence Hancock, Thomas Albert Hindmarsh, William Hudson, Frank Hutchinson Kennedy, John Lumb, and Benjamin Bell Noble, College of Medicine, Newcastle-upon-Tyne; John Howard Owen, Guy's Hospital; Elliot Jessie Ramsbotham, London School of Medicine for Women; Felix Stephens Rood, University College, London; Joseph Albert Sacco, College of Medicine, Newcastle-upon-Tyne; Madeline Rosa Shearburn, London School of Medicine for Women; and Alfred Tulloch Thompson, Eleanor Walkinshaw, and Arthur Hyde Wear, College of Medicine, Newcastle-upon-Tyne.

Degree of Bachelor of Hygiene (B.Hy.).—Helen Grace Clark.

Diploma in Public Health (D.P.H.).—Helen Grace Clark.

UNIVERSITY OF BRISTOL.

At examinations held recently the following candidates were successful:—

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.

Pass-list.—Ernest Edgar Davies, Claude Alfred Heath Gee, Edmund Fairfield Thomas, and Arthur John Ormsby Wigmore.

Passed in Part I.—Maurice Charles Barber, Edwin Vincent Foss, Adolph Gottlob Hieber, Basil John Francis Jackson Taylor, and Colston Wintle.

Passed in Part II. (completing the examination).—Stuart Hardy Kingston.

SECOND EXAMINATION FOR THE DEGREES OF M.B., CH.B.

Richard Irving Dacre, Claude Jocelyn Delubere May, and Arthur Geoffrey Morris.

FINAL EXAMINATION FOR THE DEGREE OF B.D.S.

William John Lennox.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS.

At the recent examinations held in Glasgow the following were successful:

First Professional Examination.—Devendra Bharadwaja, India; Thomas Pennington Bremner, Liverpool; Thomas Weir Drummond, Greenock; George Melven Harley, Glasgow; David Andrew Imrie, Glasgow; Charles Clouston Irvine, Arran; Mary Gray Jones, Motherwell; William M'Alpine, Wishaw; James M'Farlane, Paisley; Charles Reade, Glasgow; John Mellon Smeaton, Glasgow; William Templeton, Glasgow; and Thomas Robert Wilson, Garelochhead.

Second Professional Examination.—Andrew Crawford, Glasgow; Verdon Charles Hubert Dearden, Sheffield; John Ramsay Fleming, Airdrie; John Gilchrist, Hamilton; Madeline MacWilliam, Stranraer; Fred. Miller Murray, Glasgow; Alamu Ojo Olaribigbe, Sierra Leone; and Valentine Hutchinson Wardle, Bishop Auckland.

Third Professional Examination.—George Logan Clark, Glasgow; Hariharnath Hukku, Agra; James Grant Morrin, Glasgow; William Nevill Pennant Williams, Wales; James Noonan, Ireland; Evan Edward Owens, Wales; Alexander Morton Robertson, Glasgow; and John Watt, Glasgow.

Final Examination.—Diwan Jai Chand, India; Husain Buksh, Punjab; Harry Joseph Burke, Ireland; Robert Miller Danks, Coatbridge; Colin Hunter, Glasgow; John Boyd Michie, Alva; Francis Patrick Quirk, New South Wales; Morris William Rees, North Wales; William Wood Shorten, Ireland; Abraham Hertz Silverman, Russia; Gulab Singh, Punjab; William Minnis Thomson, Ireland; and James MacMurchy Watson, Glasgow.

FOREIGN UNIVERSITY INTELLIGENCE.

Copenhagen: Dr. Valdemar Henriques has been appointed to the chair of Physiology, in succession to Dr. Ch. Bohr, deceased.—*Kiel:* Dr. Hentze, who has charge of the Dental Clinic, has been granted the title of Professor.—*Jena:* Dr. Roessle of Munich has been appointed Professor of Pathological Anatomy in succession to Dr. Dürck.—*Königsberg:* Dr. Ernst Sachs has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Lausanne:* Professor Askenazi of Geneva has been offered the chair vacated by the death of Professor Stilling.—*Leyden:* Dr. J. P. H. van Kerchoff has been appointed Lecturer on Dermatology.—*Marburg:* Dr. Otto Veit has been recognised as *privat-docent* of Anatomy.—*Philadelphia (University of Pennsylvania):* Dr. John B. Deaver has been appointed to the chair of Clinical Surgery in succession to Dr. E. Martin.—*Naples:* Dr. Michele Pellegrino has been recognised as *privat-docent* of Medical Pathology.—*Sassari:* Dr. Tommaso Casoni has been recognised as *privat-docent* of Internal Pathology.—*St. Petersburg (Military Medical Academy):* Dr. G. W. Fleischer has been recognised as *privat-docent* of Infectious Diseases and Bacteriology.—*Vienna:* An Institute of Experimental Psychology is to be established under the direction of Professor August Stöhr.—*Würzburg:* Dr. Gerhardt, professor in Basle, has been appointed to the chair of Clinical Medicine in succession to Dr. von Leube, who is retiring.

AN AMENDE.

Our attention has been called by Dr. F. G. Clemow, British delegate on the Constantinople Board of Health, to the fact that in an article published in THE LANCET of April 29th, written by Dr. G. Douglas Gray and entitled "A Report on the Plague Outbreak in Manchuria and North China," a passage on p. 1155 is a quotation from an article communicated to THE LANCET two years ago by Dr. Clemow entitled "Some Hitherto Unknown Centres of Plague in the Kirghiz Steppes." We are sure that Dr. Gray would like to make this acknowledgment to Dr. Clemow, while our readers can see that when the quotation occurred the author believed himself to be reciting a passage in an editorial article. We regret that specific reference to the work of the British delegate should have been omitted.

CORONATION MEDALS FOR AMBULANCE WORK.

The King has conferred silver Coronation medals upon the following officers of the St. John Ambulance Brigade in recognition of their valuable services on ambulance duty during the time of the Coronation festivities:—The Chief Commissioner (Colonel Sir James Clark, Bart., C.B.), the Medical Officer-in-Chief (Mr. Edmund Owen), the Lady Superintendent-in-Chief of Nursing Corps and Divisions (Lady Perrott); the following Deputy Commissioners of Districts—Colonel C. J. Trimble, C.M.G., Mr. S. C. Wardell, Colonel G. S. Elliston, C.B., Mr. J. S. Griffiths, Colonel E. Cureton, Lieutenant-Colonel Lees Hall, Lieutenant C. B. Palmer; and the Assistant Commissioner of the Metropolitan or Prince of Wales's Corps (Mr. W. H. Morgan).

LITERARY INTELLIGENCE.

The Oxford University Press announces the immediate publication of a historical treatise on "The King's Evil," by Dr. Raymond Crawford. The volume contains a number of curious illustrations.—The managing committee of the Sleeping Sickness Bureau, Royal Society, Burlington House, London, W., has decided to publish a Quarterly Bulletin dealing with the *Leishmania* group of diseases. Dr. C. M. Wenyon, Protozoologist to the London School of Tropical Medicine, will undertake this part of the work. A list of references is now in preparation and will form the first number. Application for copies of the work should be made to the director, who asks that other publications bearing on the subject may be sent to the Bureau library.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The following is the prize list of the summer session, 1911:—Barker Anatomical Prize, £31 10*s.*, Miss Eleanor Taylor; Special Prize, £15 15*s.*, T. Mulcahy. Carmichael Scholarship, £15, E Connell. Mayne Scholarship, £8, J. T. Duncan. Medals in Operative Surgery, J. T. Duncan, gold medal; H. J. Burke, silver medal. Stoney Memorial Gold Medal in Anatomy, M. Shipsey. Practical Histology: G. M. C. Powell, first prize (£2) and medal; W. P. Cooney, second prize (£1) and certificate. Practical Chemistry: V. A. Power, first prize (£2) and medal; M. Moran, second prize (£1) and certificate. Public Health and Forensic Medicine: G. N. N. Smyth, first prize (£2) and medal; G. E. Pepper, second prize (£1) and certificate. Materia Medica: G. N. Smyth, first prize (£2) and medal; E. Connell, second prize (£1) and certificate. Biology: N. E. Stephens, first prize (£2) and medal; K. Elms and L. M. Rowlett (equal), second prize (£1) and certificate.—The Barker anatomical prize for 1912 (of £21 for a Dissection of the Phrenic Nerve) is offered for competition and is open to any student whose name is on the anatomical class-list of any school in the United Kingdom.

The preparations entered must be placed in charge of the curator of the Museum, Royal College of Surgeons in Ireland, Dublin, on or before April 30th, 1912. The dissection for which a prize is awarded will become the property of the College. Those competitors who enter dissections for which prizes are not awarded, but which show sufficient merit, may be refunded such amount of the cost of production as the examiners deem fit. Full particulars can be obtained from the curator of the museum.

THE WANDSWORTH MORTUARY.—The condition of the Wandsworth mortuary was against referred to in the course of an inquest last week. The body in question was so badly decomposed that the father of the deceased had been advised not to see it. This state of affairs has on several occasions been the subject of protests by medical men. At the last meeting of the Wandsworth borough council a communication was received from an association of ratepayers asking what steps were being taken with regard to mortuary provision. To the proposal that the association should be informed that the matter was under consideration, a councillor moved that it should be added that the matter had been under consideration for 19 years. The council's consciousness of municipal dignity prevented this from being carried. It is understood that the council is waiting for the re-apportionment of the coroners' districts within the borough of Wandsworth.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on July 12th. Dr. W. Rigden, Vice-President, took the chair, in the absence of the President. Three gentlemen were elected members of the society and the death of a member was reported. The sum of £1371 was voted for the payment of the half-yearly grants to the annuitants of the charity—namely, 48 widows and 16 orphans. Relief is only granted to the widows and orphans of deceased members, and since the last court five letters had been received from widows of medical men asking for relief, but this had to be refused, as their husbands had not been members of the society. The invested funds of the society now amount to £101,600. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20 mile radius of Charing Cross. The annual subscription is 2 guineas, special rates for life membership varying with the age of the applicant. The next election of members will be on Oct. 11th, and application forms must be sent to the secretary on or before Sept 20th; these may be obtained, together with further particulars, on application to the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W.

ASSOCIATION OF INFANT CONSULTATIONS AND SCHOOLS FOR MOTHERS.—A general meeting of the Society of Infant Consultations was held recently at the Marylebone Dispensary, when Dr. Eric Pritchard explained that the object of the meeting was to consider the proposed scheme of amalgamation with the Department of Schools for Mothers of the National League for Physical Education and Improvement. The new organisation would be called the Association of Infant Consultations and Schools for Mothers, and would have a much wider field of usefulness than under the present conditions. The secretarial duties would in future be carried on by the permanent staff of the League. The new scheme, which was proposed by Dr. F. Langmead and seconded by Miss FitzGerald, was unanimously adopted by the meeting. The aims and objects of the new association are to bring into closer relationship all who are engaged or interested in the work of infant consultations, schools for mothers, and similar institutions; to promote the establishment of such institutions and to advise as to their organisation; to organise conferences and other meetings; to record the experience gained by individuals engaged in the work, and collect literature, statistics, and reports bearing on the subject; to supply such institutions with literature, charts, diagrams, &c.; and to promote coöperation with all societies working for infant welfare. The medical subcommittee will continue the work of the present Society of Infant Consultations and the educational subcommittee that of the Department of Schools for Mothers. The secretaries of the medical subcommittee will have the right, *ex officio*, to attend the meetings of the educational subcommittee, and *vice-versâ*.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Bill Amendments.

MORE than a dozen pages of amendments to Clause 14 of the National Insurance Bill are now down on the notice paper of the House of Commons. The Chancellor of the Exchequer has slightly altered the terms of his amendment, of which notice was given more than a week ago. It now reads: "The regulations made by the Insurance Commissioners shall provide for the arrangements made being subject to the approval of the Insurance Commissioners and being such as to secure that insured persons shall, save as hereinafter provided, receive adequate medical attendance and treatment from the medical practitioners with whom arrangements are so made," &c. The words "save as hereinafter provided" are new.

Sir PHILIP MAGNUS, Dr. HILLIER, Mr. CAVE, Mr. LESLIE SCOTT, and Sir HENRY CRAIK have given notice of their intention to move the insertion of the following provisions in this clause, which deals with the administration of medical benefit: "Every insured person whose income from all sources exceeds one hundred and four pounds a year and who has become entitled to medical benefit shall be entitled, in lieu of medical attendance and treatment (including medicines), to receive an equivalent pecuniary allowance towards the expenses of medical attendance and treatment (including medicines) to be calculated and paid to or for him in accordance with regulations made by the Insurance Commissioners, and any insured person whose income from all sources does not exceed one hundred and four pounds a year, and who has become entitled to medical benefit, shall be entitled to elect in lieu of medical attendance and treatment (including medicines) to receive such equivalent pecuniary allowance as above mentioned. For the purposes of this section the income of an insured person shall be deemed to exceed one hundred and four pounds a year if his income during the calendar year preceding the date when he becomes entitled to medical benefit exceeded that sum, and any question as to the amount of such income shall be determined by the Local Health Committee."

Dr. ADDISON will move the insertion of the following provision: "Subject to regulations by the Insurance Commissioners, an approved society or Local Health Committee by which medical benefit is administered may allow any persons, and may, on the ground of means, require any persons, in lieu of receiving medical treatment and attendance, including medicines and appliances under such arrangements as aforesaid, to make their own arrangements for receiving such medical treatment and attendance, including medicines and appliances, and shall in respect of all persons who have so made their own arrangements contribute towards the cost of their medical treatment and attendance, including medicine and appliances, sums not exceeding in the aggregate the cost which the society or committee would otherwise have incurred in providing medical benefit for them."

Mr. LLOYD GEORGE this week has placed amendments on the notice paper which, if adopted, would make Subsection 3 of Clause 14 read as follows:—

"*A Local Health Committee shall, on the request of any approved society, take over* the administration of medical benefit among such members of the society entitled thereto as may be resident in the county or county borough for which the committee is established, *on such terms as failing agreement may be determined by the Insurance Commissioners;* and *where any such committee has so taken* over such administration there shall in each year be paid out of moneys credited to the society such sum in respect of every member of the society entitled to the benefit and resident in the county or county borough as may *have been so agreed or determined.*"

The alterations which the Chancellor of the Exchequer proposes to make are printed in italics.

An amendment is also tabled by the Chancellor of the Exchequer to make it apparent that the powers of councils of a county or county borough with respect to excess expenditure are optional.

Mr. LLOYD GEORGE has given notice to move the insertion of the following subsection in Clause 47 (erection of sanatoria, &c.):—

"A Local Health Committee may, with the consent of the Insurance Commissioners, enter into agreements with any person or authority that, in consideration of such person or authority providing treatment in a sanatorium or other institution as aforesaid for insured persons recommended by the committee for sanatorium treatment as may be agreed, the committee will contribute out of the funds available for sanatorium benefit towards the maintenance of the institution such annual or other payment, and subject to such conditions and for such period as may be agreed, and any such agreement shall be binding on the committee and their successors, and any sums payable by the committee thereunder may be paid by the Insurance Commissioners, and deducted from the sums payable to the committee for the purposes of sanatorium benefit."

The right honourable gentleman has placed on the notice paper the following new clause in respect to Local Medical Committees:—

"Where a local medical committee has been formed for any county or county borough, and the Insurance Commissioners are satisfied that such committee is representative of the duly qualified medical practitioners resident in the county or county borough, they shall recognise such committee, and where a Local Medical Committee has been so recognised it shall, subject to regulations made by the Insurance Commissioners, be consulted by the Local Health Committee on all general questions affecting the administration of medical benefit, including the arrangements made with medical practitioners giving attendance and treatment to insured persons, and shall perform such other duties, and shall exercise such powers as may be determined by the Insurance Commissioners."

Medical Officers of Health Superannuation Bill.

Dr. HILLIER has introduced into the House of Commons a Bill "to provide for superannuation allowances to medical officers of health employed by local authorities and for contributions towards such allowances by those officers, and to make other relative provisions." It was read a first time. The Bill has the support of Mr. HENRY FORSTER, Sir CLEMENT HILL, Colonel HICKMAN, Mr. JOHN ROBERTSON, and Mr. BARNES.

Pure Flour Bill.

Sir JOHN LONSDALE has introduced a Pure Flour Bill in the House of Commons, and it has been read a first time. Its object is "to prohibit the artificial bleaching of flour, whether by chemical processes of manufacture or by the addition of chemical or other substances."

Experiments on Living Animals.

The Home Office return showing the number of experiments on living animals during the year 1910 under licences granted under the Act 39 & 40 Vict., c. 77, distinguishing the nature of the experiments, has been published. The report is signed by Professor G. D. THANE, and sets forth that nine new places were registered for the performance of experiments, and three places were removed from the register during the year. The total number of licensees was 542. The number of experiments conducted under anæsthetics was 4939. Inoculations, hypodermic injections, and a few other proceedings without anæsthetics numbered 90,792. The total number of experiments was thus 95,731. The returns show that 49,662 experiments were performed by 27 licensees working at eight institutions in the course of cancer investigations. Sir W. THORNLEY STOKER makes the report in regard to Ireland, where 254 experiments were conducted during the year.

Effect of National Insurance on Hospitals.

A deputation representing the British Hospitals Association, the Hospital Saturday Fund for London, and the Central Hospitals' Council of London was received by Mr. LLOYD GEORGE on Tuesday, July 25th, in order that the members of it might put before him their views on the effect of the National Insurance Bill on hospitals. The general view expressed by the spokesmen of the deputation was a fear that the contributions of workmen and employers should be diverted from hospitals, and the work of these institutions restricted and crippled. The Chancellor of the Exchequer declined to regard the anticipations of the deputationists as likely to be realised. Their apprehensions, he thought, would not be justified by results. After the momentary agitation had passed people would do their duty towards hospitals in the same way as in the past. He pointed out that approved societies under the National Insurance Bill were empowered to contribute to hospitals. The right honourable gentleman emphasised the voluntary character of these institutions and suggested that State assistance might bring with it a certain amount of State control. In conclusion he threw out the suggestion that the hospital authorities should confer with the medical profession on the subject, and then they should come to him with some sort of arrangement with respect to those cases which came to hospitals and were taken off the hands of medical men.

HOUSE OF COMMONS.

WEDNESDAY, JULY 19TH.

National Insurance and Maternity Benefits.

Mr. WORTHINGTON-EVANS asked the Chancellor of the Exchequer whether a member of a Friendly Society granting a 30*s.* maternity benefit would, if he continued to subscribe for such benefit, be also entitled to receive the 30*s.* maternity benefit under the National Insurance Bill; and whether the limitation that sickness benefits should not exceed the total wages would interfere with the additional 30*s.* maternity benefit if the sickness benefits already assured equalled the wages.—Mr. ILLINGWORTH (on behalf of Mr LLOYD GEORGE) replied: The right of an insured person to receive maternity benefit under the National Health Insurance will be unaffected by his having effected an insurance for an additional maternity benefit outside the national scheme. The limitation of sickness benefits to total wages does not apply to maternity benefit.

Medical Referees and the Workmen's Compensation Act.

Mr. GILL asked the Secretary of State for the Home Department whether he had further considered the question of appointing a few medical referees who would devote the whole of their time to their duties under the Workmen's Compensation Act; and what decision he had come to in the matter.—Mr. CHURCHILL answered: There would be considerable difficulties in connexion with the appointment of whole-time medical referees. Under the present system referees are appointed for particular county court circuits, the main part of their duties being to advise in cases in which the judges require their assistance, and the work in any circuit would not be sufficient to occupy a referee's whole time. If the referees were to be whole-time officers, the area for which they would have to be appointed would be so large that a great deal of time would be taken up and expense incurred in travelling, and the arrangement would also be much less convenient to the workmen in the cases where they have to attend on the referee. Another important point is that it is the practice to select the referees as far as possible from doctors engaged in active surgical work, the experience gained in which is of great advantage in deciding on the difficult questions referred to them as referees, and I am doubtful whether I should be able to secure medical men of the same high standing if they were required to give their whole time. I fully agree that the question is one which should be considered, but I think it must stand over till the general inquiry into the Act or possibly the somewhat similar inquiry into the appointment and duties of certifying surgeons is set on foot.

Medical Inspection of School Children.

Mr. CHARLES BATHURST asked the President of the Board of Education whether, in view of the repeated assurances on the part of the Government that adequate grants would be made by Parliament towards the cost entailed by the medical inspection of school children under the Education (Administrative Provisions) Act, 1907, and of the fact that during the last two years the expenditure under this head had been steadily increasing and was already in many cases double the amount originally estimated, and the further fact that the object of medical inspection was of national importance, he would take steps to relieve the local education authorities of part of the increasing burden thrown upon them for this purpose.—Mr. RUNCIMAN said in reply: I have constantly stated in this House and elsewhere that the provision of additional funds from Imperial sources in aid of local expenditure on medical inspection can only be dealt with in connexion with the general question of the relations between Imperial and local taxation which are being considered by a Departmental Committee.

Report of Royal Commission on Tuberculosis.

Sir JOHN LONSDALE asked the President of the Local Government Board what action he proposed to take to give effect to the recommendations of the Royal Commission on Tuberculosis.—Mr. BURNS replied: The report of the Royal Commission, which has just been issued, is receiving my consideration.

Sir JOHN LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the Final Report of the Royal Commission on Tuberculosis, and whether he intended to take any action in Ireland to give effect to the recommendations of the Commission.—Mr. REDMOND BARRY (on behalf of Mr. BIRRELL) replied: There has not yet been time to consider fully the Final Report of the Royal Commission on Tuberculosis with a view to seeing how far its recommendations are applicable to Ireland.

Vaccination and Small-pox.

Mr. BENTHAM asked the President of the Local Government Board whether the increase in the number of children exempted from vaccination through the operation of the Vaccination Acts of 1898 and 1907, and especially since the Act of 1907 came into force, had been accompanied by any noticeable increase in the number of deaths from small-pox in children under 10 years of age.—Mr. BURNS said in reply: There has been but little small-pox in this country since 1907, and up to the end of 1910 no noticeable increase in the deaths of children under 10 from this disease. Figures for 1911 are not yet available.

Mr. ALBERT SMITH asked whether the right honourable gentleman would state the number of cases of small-pox reported in Bury, Stalybridge, Wallasey, and Birmingham this year, with the vaccinal condition of the patients, also the number of deaths, and the vaccinal condition of the victims.—Mr. BURNS answered: In Bury 30 cases of small-pox had occurred, of which none were fatal. The age incidence of these patients cannot be given at present. Eleven of the patients are known to have been unvaccinated, and 16 had been vaccinated in infancy. The Board has no information on the vaccinal condition of the three remaining cases. The Wallasey and Birmingham outbreaks are so recent that no precise information is as yet available. There were 14 cases of small-pox at Stalybridge, of which none were fatal. Of these cases, six were unvaccinated, seven were vaccinated, and one was said to have had a previous attack of small-pox. All the cases under 20 years of age were unvaccinated.

THURSDAY, JULY 20TH.

Milk and Tuberculosis.

Mr. CHARLES BATHURST asked the Parliamentary Secretary to the Board of Agriculture whether, in the light of the final report of the Royal Commission on Human and Animal Tuberculosis, the Board would, as in some continental countries, make it compulsory for all cattle whose milk was sold to the public to be examined periodically to ascertain their freedom from transferable tuberculosis as evidenced by emaciation or visibly tuberculous udders without necessarily employing the sometimes misleading tuberculin test, and thus produce a national register of sound cattle the milk of which could be purchased with confidence by the public.—Sir EDWARD STRACHEY replied: In view of the fact that there are over two million cows in milk in Great Britain the proposal made by the honourable Member is one which might impose a heavy charge upon the local rates and therefore requires a very careful consideration.

National Insurance and Voluntary Hospitals.

Mr. EVELYN CECIL asked the Chancellor of the Exchequer whether he could give any information as to the extent to which members of friendly societies had in the past had medical attendance at voluntary hospitals instead of, or in addition to that of, their club doctor, and whether such claims upon hospitals were likely to be reduced or increased by the National Insurance Bill.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) answered: I fear no such information is available. I think the honourable Member is in as good a position as my right honourable friend to estimate the probable effect of the Bill in the direction indicated.

MONDAY, JULY 24TH.

Sleeping Sickness in Uganda.

Mr. MITCHELL THOMSON asked the Secretary of State for the Colonies whether any further report on the measures adopted for the suppression of sleeping sickness in Uganda was in course of preparation, and, if so, when it would be presented; whether the report of the Government entomologist for Uganda, 1909-10, had yet been printed; and, if so, whether he would lay it before Parliament.—Mr. L. HARCOURT replied: No further report is being prepared for presentation to Parliament, as information on all matters in connexion with sleeping sickness is now made accessible to the public through the bulletin which is issued monthly by the Sleeping Sickness Bureau. The report of the Government entomologist for Uganda, 1909-10, has been printed in the Protectorate, and I shall be glad to send a copy of it to the library of the House.

National Insurance Bill Topics.

Mr. HOUSTON asked the Chancellor of the Exchequer whether he was aware that in most of the Continental countries it was illegal for medical practitioners to dispense and for chemists to prescribe; and whether he proposed to adopt the Continental system in the National Insurance Bill.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) replied: I do not think an amendment of the law in the direction suggested would be in place in an Insurance Bill.

Mr. HOUSTON asked whether the right honourable gentleman had official information as to the effect of the Sickness Insurance Act of Germany upon the interests of German doctors owing to the small pay or fees they received under it, and showing that the medical treatment given to the insured was thereby prejudicially affected; and, if so, whether he would publish the same; and, if not, whether he would arrange for a Commission of British doctors to be sent to Germany to inquire into, and report upon, the working of the Insurance Act in that country.—Mr. HOBHOUSE answered: The German sickness insurance societies have had their own disputes with the doctor, and as a result are now paying higher fees than formerly, but there is no evidence to show that the medical treatment given to the insured is now unsatisfactory. No doubt the medical service is most efficient where the sickness societies and the doctor are satisfied with the contracts under which it is given.

Indian Medical Service.

Mr. KELLY asked the Under Secretary of State for India whether any posts in the higher grade of the medical service of India, hitherto reserved for military doctors, were now set apart for Indian civil doctors; if so, how many of them had been actually filled so far; and for what reasons were the other posts still closed to Indian medical practitioners.—Mr. MONTAGU replied: The answer to the first part of the question is No; the rest therefore does not arise.

Mr. KELLY asked whether the honourable gentleman was yet able to state the annual cost to the Indian Treasury for the upkeep and education of Europeans and Eurasians for the military assistant surgeon grade; and whether these ranks were still closed to Indian doctors with university and registrable qualifications obtained at their own cost.—Mr. MONTAGU said in reply: The answer to the first part of the question is No, and to the second part Yes.

TUESDAY, JULY 25TH.

Tuberculosis and Milk.

Captain FABER asked the President of the Local Government Board to state whether he could propose legislation to prevent people suffering from consumption from being employed in the milk trade.—Mr. BURNS answered: The subject is under my consideration, but I am not at present prepared to state what action will be taken.

Captain FABER further asked the right honourable gentleman whether he could state, seeing that the Royal Commission on Tuberculosis had reported on the dangers of impure milk, what milk, if any, was coming in from abroad; and whether steps would be taken to closely examine such milk; and what such steps were.—Mr. BURNS said in reply: The importation of fresh milk from abroad has not yet been resumed. When this occurs further series of samples will be taken by the Board's inspectors and will be examined for the presence of impurities, including the tubercle bacillus.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BAINBRIDGE, F. A., M.D., D.P.H. Cantab., has been appointed Professor of Physiology in the University of Durham.

BARTON, G. H., M.R.C.S., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Market Rasen District of the county of Lincoln.

BRENTNALL, J. C., M.R.C.S., L.R.C.P., has been appointed House Physician to the Manchester Royal Infirmary.

BROWN, A. MIDDLETON, M.B., Ch.B. Aberd., has been appointed Resident Medical Officer at the Aberdeen Royal Infirmary.

DONALDSON, ROBERT, D.P.H., has been appointed Demonstrator of Pathology in the University of Bristol.

FISHER, A. G. T., L.R.C.P., M.R.C.S., has been appointed Demonstrator of Anatomy in the University of Bristol.

HILL, E. FALKNER, M.B., Ch.B. Vict., has been reappointed Anæsthetist to the Manchester Royal Infirmary.

JEFFERSON, G., F.R.C.S. Eng., has been reappointed Anæsthetist to the Manchester Royal Infirmary.

MOIR, EDWARD, L.S.A. Lond., has been reappointed Anæsthetist to the Manchester Royal Infirmary.

MURRAY, JAMES R., M.B., Ch.B. Aberd., has been appointed Resident Medical Officer at the Aberdeen Royal Infirmary.

RAMSBOTTOM, A., M.D. Vict., has been reappointed an Assistant Director of the Clinical Laboratory at the Manchester Royal Infirmary.

RAY, J. HOWSON, F.R.C.S. Eng., has been appointed Honorary Surgeon to the Manchester Royal Infirmary.

REID, PETER, M.B., Ch.B. Aberd., has been appointed Resident Medical Officer at the Aberdeen Royal Infirmary.

STEELL, GRAHAM, M.D., C.M. Edin., F.R.C.P. Lond., has been appointed Honorary Consulting Physician to the Manchester Royal Infirmary.

WILLIAMSON, R. T., M.D. Lond., F.R.C.P. Lond., has been appointed Honorary Physician to the Manchester Royal Infirmary.

WORMALD, T. L., M.D., B.Hy., D.P.H. Durh., has been appointed Whole-time Medical Officer and Public Vaccinator to the Darlington Union.

WRIGHT, G. A., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board and residence.

BIRMINGHAM GENERAL HOSPITAL.—House Physician for six months. Salary £50 per annum, with residence, board, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, attendance, &c.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Physician.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUMFRIES, CRICHTON ROYAL INSTITUTION.—Pathologist and Clinical Pathologist. Salary £250 per annum, with quarters, board, and laundry.

GLAMORGAN COUNTY COUNCIL.—Medical Officer (female). Salary £250 per annum.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Locum Tenens Assistant Medical Officer for about six weeks. Salary 4 guineas a week, with board, lodging, washing, and attendance.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER EDUCATION COMMITTEE. — Assistant School Medical Officer. Salary £250 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing. Also Assistant House Surgeon for six months. Salary at rate of £105 per annum.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM, Parkside.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and laundry.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Locum Tenens, unmarried, for six to eight weeks. Salary 4 guineas per week, with apartments, board, &c.

MANCHESTER ROYAL INFIRMARY.—Assistant Surgical Officer. Salary £35 per annum.

MIDDLESBROUGH, NORTH RIDING INFIRMARY. — Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

OCHILTREE PARISH COUNCIL, Ayrshire.—Medical Officer. Salary £40 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician. Salary £50 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

ST. GEORGE'S UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer. Salary £130 per annum, with board, residence, and washing.

ST. MARY'S INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer. Salary at rate of £100 per annum, with board and residence.

ST. PANCRAS INFIRMARY (SOUTH) AND WORKHOUSE.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer. Salary at rate of £135 per annum.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, attendance, and rations.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £60 each per annum, with board, lodging, and washing.

SHREWSBURY, SALOP AND WENLOCK ASYLUM.—Junior Male Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing. Also Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, laundry, &c.

THROAT HOSPITAL, Golden-square, W.—Surgical Registrar.

WALTHAMSTOW, LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, rooms, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WEST HAM UNION WORKHOUSE, Union-road, Leytonstone, N.E.—First Assistant Resident Medical Officer. Salary £150 per annum, with usual allowances.

WESTMINSTER HOSPITAL.—Assistant House Surgeon for two months. Board provided. Also Resident Obstetric Assistant for six months. Board and lodging provided.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer, unmarried. Salary £140 per annum and all found.

Births, Marriages, and Deaths.

BIRTHS.

COOPER.—On July 20th, at "Lansdowne," Hampton-on-Thames, the wife of Harold Merriman Cooper, M.B. Lond., of a son.

RIDGE.—On July 20th, at Carlton House, Enfield, the wife of R. Leslie Ridge, M.B., B.S. Lond., of a daughter.

SAWYER.—On July 21st, at Farquhar-road, Edgbaston, Birmingham, the wife of James E. H. Sawyer, M.A., M.D., of a son.

MARRIAGES.

KIDD—CURRY.—On July 15th, at St. Lawrence Church, Isle of Wight, Walter Shirley Kidd, M.B., B.S. Lond., M.R.C.S., L.R.C.P., to Philippa Olive, third daughter of Mr. and Mrs. Curry.

DEATHS.

BULSTRODE.—On July 21st, very suddenly, Herbert Timbrell Bulstrode, M.A., M.D. Cantab., D.P.H., &c., Medical Inspector, H.M. Local Government Board.

RIDLEY.—On July 23rd, at The Asylum, Portsmouth, Edward Hope Ridley, M.D. Edin., aged 45 years, Medical Officer at the Asylum.

ROBERTS.—On July 19th, at Chung-King, China, Surgeon R. P. Middleton Roberts, H.M.S. *Teal*. (By Admiralty cable.)

STILES.—On July 19th, at Spalding, Lincolnshire, Henry Tournay Stiles, M.D. St. And., J.P. Holland Division, Lincolnshire, aged 83 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DEATH FROM ANTHRAX IN A LABORATORY.

UNDER the Workmen's Compensation Act, 1897, a death from anthrax poisoning was first held to be due to an "accident," entitling the dependents of the deceased to compensation, in the case of Brintons, Limited, *v.* Turvey (1905 A.C. 30), when the idea that this could be so was a novel one, and was strongly opposed by Lord Robertson, who delivered a dissentient judgment, expressing disapproval of the view that the inception of any disease could be regarded as due to an "accident." Since then, however, the Act of 1906, which now regulates workmen's compensation, has formally recognised certain industrial diseases as fitting subjects for compensation, and anthrax heads the list in Schedule III., which specifies the diseases and the processes to which the Act applies. The decision in Brintons, Limited, *v.* Turvey benefited workmen to a very limited extent only. The other diseases mentioned in the schedule, such as lead poisoning and ankylostomiasis, had formed the subject of judicial decisions before the Act of 1906 was passed, and it had been held that infection with them was not an accident. A distinction was drawn between anthrax commencing with infection through an abrasion of the skin, a disease attacking its victim with suddenness, and for the first inroad of which a date might be fixed, and diseases the onset of which was gradual, and their inception not to be assigned to a particular date. Anthrax, looked at from this point of view, was an accident; beat knee and conditions due to accumulated doses of lead were not; consequently, one worker's "disease" was a subject for compensation, and that of his neighbour in another equally dangerous process was not. The Act of 1906, however, now removes the unequal conditions created by its predecessor and by the House of Lords' decision, so far as the infection of workmen when engaged upon the specified processes is concerned.

HEALTH AND SANITATION IN WEI-HAI-WEI: OPIUM AND ALCOHOL.

THERE are several points of interest in the report for the year 1910 just received at the Colonial Office from Sir J. H. Stewart Lockhart, K.C.M.G., the Commissioner for the territory of Wei-hai-Wei. This territory, it may be recalled, was leased to Great Britain by China by a convention made on July 1st, 1898. It lies in latitude 37·30 N., longitude 122·10 E. It is in the Chinese province of Shantung, and comprises the island of Liu Kung, all the islands in the Bay of Wei-hai-Wei, and a belt of land ten English miles wide along the entire coast-line, with a total area of 285 square miles. Wei-hai-Wei is a port of call for steamers running to and from the North of China, and there is regular steam communication with the port of Shanghai. The Commissioner records that the general health during the year among both Europeans and Chinese was very good. There was an outbreak of measles on the island and mainland during the spring among the Chinese, but the type was of a mild nature, and few cases proved fatal. There were two cases of scarlet fever, probably imported from Chefoo, and one case of enteric fever. Dysentery was not at all prevalent. One European child died from that disease; all the other cases were of a mild form. Two cases of small-pox occurred. The general vaccination of the inhabitants of the Territory, which is carried out every year throughout the villages, may account to a great extent for the small number of cases of small-pox. The outbreak of plague in Manchuria caused much anxiety towards the end of the year, as many Chinese who emigrate from Wei-hai-Wei to Manchuria are in the habit of returning to their homes to celebrate the Chinese New Year, and it was feared that infection might be introduced through them. As the Territory has a land frontier extending over 34 miles and a coast line over 60 miles in length, to effectively prevent the introduction of disease would require a much larger staff than the Government possesses, and would necessitate the employment of many craft afloat, which are not available. But every precaution under the circumstances was taken, and though the disease spread to Chefoo, distant from Wei-hei-Wei 60 miles by land and 40 miles by sea, and reached other towns between the Territory and Chefoo, Wei-hai-Wei has up to the present time been fortunate to escape with only one case, which was imported and which proved fatal. The patient was nursed by the Lady Superior of the Franciscan Sisters, who all bravely and nobly volunteered their services as nurses in the event of an outbreak of plague. A campaign has been instituted against rats, but to judge from the number caught—only 1200 up to date—it seems that rats are not plentiful in the Territory. All those examined microscopically have been found free from the plague bacillus.

The sanitary condition of Port Edward and the Island continues to be satisfactory. The wells at Port Edward have been covered and fitted with pumps. The Chinese did not at first take kindly to the

pumps, but they now appreciate their convenience. The dairies and abattoir have been carefully inspected, and conservancy arrangements have worked well and been carried out efficiently. The highest monthly barometrical average was that of December, 30·626, and the lowest that of August, 29·354. The highest temperature recorded was 91° for June and July, and the lowest 2° in January and February. Rain and snow fell on 74 days, the annual rainfall being 36·18 in. July was the wettest month, with a rainfall of 10·63 in. In-patients treated during the year in the hospital on the island numbered 16, as compared with 23 in 1909, whilst the out-patients totalled 2277 as compared with 2635 in 1909. At the Port Edward Hospital there were 97 in-patients as compared with 112 in 1909 and 3063 out-patients as compared with 2826 in 1909. There were 123 operations.

During the past year the importation, sale, and smoking of opium were discouraged in every possible way. In 1909 the number of licensed smokers was reduced from 220 to 110, and during 1910 the number was still further reduced to 50. During 1909 the admissions to the refuge established by the Government for those desirous of abandoning the opium habit amounted to 31, whilst during last year they rose to 70, the ages of those admitted ranging from 24 to 74. The police were very active in discovering the illicit smoking and sale of opium, there having been during the year 135 convictions for breaches of the Opium Ordinance. This activity on the part of the police was naturally unpopular among those who have been accustomed to smoke opium, and led to the publication in certain Chinese newspapers printed in Manchuria, Chefoo, and Shanghai of serious libellous charges against the Government. No opium was imported under licence during the year and only one shop was licensed to sell opium. It may be impossible to prevent entirely the smuggling of opium into the Territory across the border or along the coast, but as every step possible is being taken to discourage the use of opium, and as public opinion among the Chinese of Wei-hai-Wei is, if anything, more than ever firmly set against the opium habit, there seems every reason to hope that opium smoking will become even a rarer habit than it is at present. But the diminution in the use of opium seems to be leading to an excessive use of alcohol, and though drunkenness cannot yet be said to be a prevalent vice cases of intoxication are undoubtedly more numerous than in previous years.

The total strength of the police force was three European inspectors, three Chinese sergeants, and 52 constables. The population of the Territory is estimated at 150,000, mostly Chinese, who inhabit 300 villages spread over an area of 285 square miles, so that there is about an average of one policeman to 3000 of the population. The Territory possesses no other local force, with the exception of a few marines, on which it could depend in the case of an emergency. The fact that such a small force is found sufficient for ordinary requirements shows how orderly and well-behaved the inhabitants of the Territory are. Attention has been called to the fact that in the Territory 90 per cent. of the persons who destroy themselves are females, and that as a rule no case of suicide among young people occurs, whilst such cases are said to be increasing in the West. The suicides last year, however, showed a larger proportion of males than usual, and among them was the suicide of a boy aged 15. He appears to have run away from home, but was brought back before he had gone very far. The loss of face caused by his failure to effect his object and the ridicule poured upon him by the village urchins, on account of his enforced return, drove him to hang himself. This case is an illustration of the slight causes which will induce Chinese to take their own lives.

ELECTRO-THERAPEUTIC APPARATUS.

Messrs. W. Watson and Sons of 313, High Holborn, London, W.C., have forwarded us their latest list of apparatus for electro-therapy and diagnosis, which an inspection shows is replete with all modern appliances and appurtenances. Many of the apparatus are made to the design of medical authorities upon the various methods of application. The list includes apparatus for static and sinusoidal currents, radiotherapy, thermotherapy, vibration, electrolysis, radioscopy, faradism, and so forth. The makers themselves have invented some ingenious and useful appliances for treatment.

PROGRESS OF DAVOS.

ACCORDING to the report received at the Foreign Office from Mr. W. R. Huggard, H.M. Consul, the number of British visitors recorded at Davos in 1910 was over 2500, as compared with 2140 in 1909. The numbers of such visitors had previously declined from 3000 in 1899 to about 2000 in 1908. During those same years a marked increase took place in the arrivals from all the other chief nations of Europe. The increase in the number of representatives from other nations is easy to understand. Owing to the excellence of its arrangements Davos offers special advantages both for invalids and for persons in search of outdoor winter sports. Consequent on the compulsory disinfection of rooms that have been occupied by persons suffering from tuberculosis, the danger of tuberculous infection is immensely reduced in Davos, especially in comparison with places where invalids are said not to be taken, but where no precautions are enforced. On this point, which seems to be grasped elsewhere, much misapprehension appears to exist at home. The majority of British subjects resident in the district came to Davos in the first in ance on account of health—their own or that of immediate relatives. A small proportion only earn their livelihood in business or professional occupations. The young Englishman, by his ignorance of languages, is at a disadvantage in obtaining local employment in comparison with the young Swiss or German. The Queen Alexandra Sanatorium, which completed the first year of its active life in November, 1910, is proving of great value for the class for whom it is intended—people of small means affected with curable forms of pulmonary tuberculosis.

Gland.—The sufferer is recommended to consult his medical man. We do not give medical advice.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for July and August, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 24th–August 2nd (Belfast).—Health Exhibition in connexion with above Congress.
,, 26th–29th (London).—Universal Races Congress.
,, 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 26th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 20	30·21	S.W.	...	132	84	63	62	68	Cloudy
,, 21	30·22	S.	...	137	92	67	68	75	Fine
,, 22	30·20	S.W.	...	137	93	68	66	77	Fine
,, 23	30·19	E.	...	122	78	62	64	70	Cloudy
,, 24	30·15	E.	...	121	80	60	62	67	Fine
,, 25	29·92	S.W.	0·05	129	83	65	65	69	Cloudy
,, 26	29·84	S.W.	0·42	119	78	62	61	62	Raining

The following journals, magazines, &c., have been received:—Hospital Assistant, Canadian Practitioner, Philippine Journal of Science, Annales des Maladies des Organes Génito-urinaires, Revista Médica del Uruguay, Archives de L'Institut Pasteur de Tunis, Klinik für Psychische und Nervöse Krankheiten, Peru To-day, British Journal of Dermatology, Yale Medical Journal, L'Hygiène, Albany Medical Annals, American Medicine, Medical Times, Encyclopédie Médicale, Revue d'Hygiène, Interstate Medical Journal, Canadian Medical Association Journal, Annali di Medicina Navale e Coloniale.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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ABSTRACT OF

The Edward Jenner Lecture

ON

SCHOOL HEALTH.

Delivered at the Medical School of St. George's Hospital (University of London),

BY F. E. FREMANTLE, M.B. OXON., F.R.C.P. LOND., F.R.C.S. ENG., D.P.H.,
COUNTY MEDICAL OFFICER FOR HERTFORDSHIRE.

[AFTER pointing out that school children are entrusted to the State for a large part of their malleable life and that consequently the State has both a responsibility and an opportunity of moulding its future citizens in accordance with the rules of health and medical experience; that the science of public health has changed its position, enlarged its field of view and scope of action; and epitomising the history of the rise of school medicine, Mr. Fremantle continued:]

It was in Wiesbaden that our English system of attention to school health had its origin, attention being there focussed on the child rather than on its surroundings, and provision being made for thorough physical examination of every child on admission and in the third, fifth, and eighth years of school life, as well as for the detection of infectious disease and the inspection of premises. In 1898 this method was adopted in the towns throughout Germany, and by the time it was transplanted to Great Britain medical inspection had been established in most civilised countries of the world, including North and South American States, and since 1898 as a complete system in Japan.

The duty of inspecting all children in English public elementary schools was enacted by the Education (Administrative Provisions) Bill, 1907, which gave education authorities also the power to provide treatment of defects. The Board of Education is responsible for supervising the work. The principles of action that guide the Board are in a less formal way described in the annual report of Sir George Newman, chief medical officer to the Board, which is published towards the end of every year. I would strongly advise your expending 8½*d.* on the report for 1908, which contains the circulars of the Board and the provisions of the Code relating to this subject, in addition to an attractive account of the first reports of the work from all parts of the country.

OBJECTS AND PRINCIPLES OF MEDICAL INSPECTION.

In these circulars the Board lays it down that it aims not at an anthropometric survey but at the physical improvement, and as a corollary at the mental and moral improvement, of future generations. The broad requirements of a healthy life are few and elementary, but essential and economical, both to the individual and to the community, by reason of the consequent decrease of inefficiency and of destitution in after life. It was shown that the health of school and of home go together, and that in this matter the local education and the local sanitary authorities should coöperate.

The system thus inaugurated has been criticised as providing only for inspection of defects without providing for their cure. This, however, is sound. The first need is a knowledge of the nature and extent of the defects to be met; the second need is the distribution of such information to the parents, on whom the direct responsibility should continue to rest; the third need is the stimulation of charity and of every existing agency to undertake the treatment of these defects; the fourth need is a knowledge of the cases remaining untreated and the reasons for such neglect. Then, and then only, will it be possible to present a case for providing means of treatment; and then it will be far better to proceed by an extension of existing methods and principles of medical provision rather than to inaugurate a new system of school clinics, as they are called, for this particular purpose.

Medical inspection, then, is the basis of the system, a routine inspection at certain stated periods in every child's life and a further periodic inspection whenever the school doctor or the teacher thinks it advisable. But this inspection is only the framework. On it must be built up the whole system of physical education, interwoven as it must be with the existing system of moral and mental education. The school teacher, therefore, must be trained and accustomed to consider the bodily health in every detail of school life; and the school doctor must hold himself responsible that due attention is paid to the rules and conditions and habits of health at every turn of the educational machine. It is no mere inspector that is required, but a family doctor to the school, with a "cure" of the bodies comparable to the "cure" of souls for which his clerical brother is responsible.

The main objects, then, are three:—1. The health and future ability of each child. 2. The healthy influence of each child on its neighbour. 3. A statistical record by which to compare the health of different schools and communities or of different years and periods, and so to arrive at the effect of different social conditions in promoting or retarding health.

The main principles to be observed are therefore as follows:—1. The gradual installation of the school doctor as the general and responsible guardian of the school health. 2. The gradual installation of the school teacher as the daily inspector of the children's health, and as the prime agent in the inculcation, both by reason and habit, of school hygiene. 3. Continuity of medical inspection and record throughout the school life of each child. 4. A high degree of clinical experience, public spirit, and personal authority in the medical inspector. 5. Intimate connexion between those in charge of the child's health at school (the head-teacher and medical inspector) and those at home (parents and sanitary authority). 6. Sufficient participation by those in charge of school health in the whole work of the educational machine. 7. Accuracy, a uniform common-sense standard, and an efficient method of recording the facts observed; care in their compilation; caution in the deduction of results, and wisdom in the presentation both of facts and conclusions to the authority and to the public.

ORGANISATION OF MEDICAL INSPECTION.

By the end of 1908, 307 out of 328 local education authorities in England and Wales had already appointed school medical officers officially recognised by the Board of Education; 224 were medical officers of health. The Board, however, will recognise only one titular school medical officer for each local education area. The question, especially for counties, was then how to organise the work. Considerable difference must obviously be made between urban and rural areas. The intensity and the publicity of the problem and of the results in towns attract attention; but in this, as in every branch of public health work, it is in the villages that the causes of any condition can be traced to their sources and most easily remedied.

The special characteristics of rural conditions in this respect are:—1. The greater distances, allowing less work to be done in any one particular day. 2. The existence of fewer medical men, the only specialists among them being those that hold whole-time appointments as medical officers of health; while, on the other hand, the general medical practitioners have wider general interests and experience than their colleagues in the towns; they are a more permanent and integral part of the community, and their view is nearer to that of the intelligent laymen. 3. The school teachers are as a rule less highly trained, but know their children, parents, homes, and surroundings more intimately, and retain their influence over them after they have left the school. 4. The rural schools are smaller. 5 The village nurse, with her year's training in midwifery and sick nursing, is becoming as integral a part of rural life as the schoolmaster, doctor, or priest.

The methods actually adopted for the work in areas where the (chief) school medical officer requires assistance are: (*a*) By whole-time inspectors *ad hoc*, at a salary of £250 a year; these, however, if satisfactory, will be constantly changing; they are mere inspectors, unconnected with the Public Health Service, and narrowed by the very special nature and strict limits of their work. (*b*) By unofficial general practitioners, as in London, where quarter-time assistants are engaged. They, too, are unconnected with the Public Health Services, and are strangers to all concerned.

(*c*) In rural areas by the Poor-law doctors. They are conversant with the homes of the people and offer the great advantage of combining the work of prevention and cure. But they are as yet unconnected with the Public Health Service; they include many of the least competent practitioners, and their number intensifies the difficulty of administration. (*d*) By the district medical officers of health. This is the system adopted in Hertfordshire; against certain minor drawbacks it combines the advantages of local knowledge, permanence, broad interests, and full connexion with the Public Health Service.

The payment in the Hertfordshire system depends on several factors as follows:—(1) 1*s*. 6*d*. for each child inspected in due course, on receipt of a copy of the record-card at the county office. (2) Capitation fee of 3*d*. a year for every child on the books, in return for other work inevitably involved. (3) Travelling fee of 5*s*. a visit, up to four visits in the year, to schools outside the towns in which the officers reside. (4) Postage fee of 1*s*. a year for each school. This payment appears to be fair and satisfactory both to the officers and to the authority, and may be recommended for general adoption.

It is necessary to emphasise the importance of thus uniting the public health and school health services; for in the greater part of the country this ideal, laid down as we have seen by the Inter-Departmental Committee and by the Board of Education, has become a dead letter, and the separation of the services, except for the nominal supervision of the school medical officer, has been condoned and even commended by the Board. Before long it may be that the councils of county boroughs and counties will be the sole local authorities for all purposes. Then, it is to be hoped, there will be no difficulty in uniting the various local public medical services into one comprehensive system under a single chief medical officer. Then the duties should be so distributed that, as far as possible, the school work coincides with the public health work of every area.

DUTIES OF SCHOOL DOCTORS.

Let us, then, briefly run through the duties of the schoo doctor, as I prefer to call him, rather than use the cold, formal title of medical officer. The actual system in force in Hertfordshire will serve as a type, recognising that the details depend on a variety of circumstances and a variety of personalities, corporate and individual. Each area has to work out its own salvation, within the prescribed limits, as it thinks best. No one system can be adopted ready-made in every particular, in any other area than that in which it has developed.

1. *Routine inspections.*—Every child is inspected on admission and in the eighth and eleventh years after the year of its birth. Children are therefore inspected at 3–5 (or later), 7–9, and 10–12. The assistant school medical officer sends a postcard to the head teacher, giving a week's notice of his intended visit; and the teacher sends notice to the parents of children not previously inspected, inviting their presence. This also gives them the opportunity of sending a written refusal to allow inspection. Of nearly 14,000 children due for inspection last year, the parents of 44, or 0·3 per cent., refused inspection. Under the Children Act, 1908, however, the doctor has power, even in these cases, to inspect the cleanliness of person and clothing, and I have delegated similar powers to the school nurses. The inspection must take place in school hours—i.e., generally between 9 and 12 or 2 and 4, and on school premises unless special sanction of the Board is obtained for the use of other premises close by. A schoolroom has generally to be used for the purpose and the children from that room are crowded into another room or turned out into the playground. The apparatus consists of a good steel-yard weighing-machine, a measuring standard fixed usually for the occasion to the wall, and test-type at a distance of 6 metres (21 feet), with the doctor's own stethoscope and tongue-depressor. For this he often brings a packet of wooden gardeners' labels, using one end for each mouth, and throws them into the fire after use. It is not a detailed clinical examination, but a physiological inspection to find out the chief defects. Results are recorded on cards kept at the school, copies being sent to the county medical office.

2. *Special inspections* are at the same time made, either of children previously inspected and kept under observation or of children to whom attention is drawn by the teacher.

3. *The apparatus* is in general charge of the doctor, to whom the teacher is responsible for its care, the two county inspectors of weights and measures being held responsible for the condition of the weighing machines.

4. *The sanitary condition of premises* has to be observed and defects noted on a sheet form provided for each school, on which are printed all the items of structure and fittings throughout the premises, and columns are left for notes of defects and improvement year after year. Here it is of first importance to note the signs of cleanliness and proper use of every part—e.g., the opening of windows, the supply of drinking water, the use made of closets.

5. *The teachers*, and especially the head teachers, must be encouraged to pay attention to health and physical development at every turn of school life; and, as most of them have received no instruction in the subject, it rests with the school doctor to show them in what way the principles are to be attained. At every visit the doctor should find an opportunity to discuss some health question with the head teacher without appearing to offer instruction.

6. *The whole curriculum* should be surveyed by the doctor with a view to its bearing on school health. More especially will his attention be directed to the teaching of hygiene, to physical drill, to mental strain; but his influence may, and should, eventually reach to the full extent of the curriculum.

7. Much *correspondence* and many personal interviews are involved by every phase of this work—with parents, teachers, and attendance officers; with school managers and subcommittees; with the education, sanitary, and Poor-law authorities; and with charitable persons and agencies. The more that this can be done in person rather than by post the better; tact is of first importance, and the district medical officer of health is in a far better position to carry out these duties, and so influence the general population in the way of health, than the whole-time inspector for the country school.

8. *Cases should be followed up* to their homes in order that home conditions, which are often mainly responsible for defects, may be discovered, parents interested, and the children assisted to secure treatment.

9. Once every year the school doctors must supply an account of their work done during the year *for the annual report*, which the chief school medical officer has to prepare for the information of his authority and of the Board of Education.

RECORDS OF MEDICAL INSPECTION.

It is impossible here to indicate the results obtained from these records. They provide, it is obvious, for a complete physiological survey of the whole elementary school population of the country, and the results, carefully handled, should be of national importance.

So far our figures of height and weight suggest that the town children belong to a better physical stock, although greater physical development occurs in the villages than in the towns; and that in increased degree the physical stock of Hertfordshire is less good than that of London, but that by the age of 12 the Hertfordshire children have passed those of London both in height and weight. Equally interesting figures—likely to be of the utmost profit to social reformers—are those derived in the comparison of clothing and footgear, nutrition, and cleanliness; while more specifically medical problems are suggested by the fewer defects of the teeth and of vision in rural areas at the later ages.

It is sufficient, finally, to refer to the total figures which show that only 6 per cent. of the children have perfect teeth; that 12 per cent. appear to have adenoids, 13 per cent. have defective vision, 13 per cent. have unclean or verminous heads, 44 per cent. are defectively vaccinated, while only 0·2 per cent. are found suffering in any way from tuberculosis.

The greatest possible care must be taken in the collection, recording, and analysing of these records, still more in deducing the causes and cure of the defects set forth. With such care the study is likely to be the essential and inevitable forerunner of measures to enhance very greatly the national physique.

SYSTEMS OF TREATMENT.

What are these measures to be? In the first place, there are the absolute mental or physical cripples, the blind and

deaf, the imbecile and the mentally defective. For these cases London and the other large towns have special schools, both residential and day. They also have special schools or classes for tuberculous, paralysed, and other crippled children, who are taken there in a special ambulance carriage. Special open-air schools are also provided in the London suburbs, to which anæmic and ill-nourished children are sent for a season. For the defectives, in county areas reliance has usually to be put on residential schools belonging to private charities, to which the education authorities subscribe for so many beds. Many authorities now have, or are building, their own homes for the mentally defective and for the epileptic, who, however, must be educated in separate institutions from one another. The parents' consent is necessary, and a weekly parental contribution, where means will allow, is usually required.

For the treatment of curable defects the authority is allowed, subject to the sanction of the Board of Education, but is not obliged, to undertake treatment. The following are the alternatives:—

1. *School clinics*, or out-patient hospitals, established for the purpose. Eleven of these were sanctioned for the year 1909–10, including the purely dental clinic at Cambridge. For dental work there is need of some such institution. But merely for the treatment of skin and eye diseases and of adenoids it is difficult to justify such an establishment, if it is to be decently equipped and arranged. Occasionally, as at Hampstead, Wandsworth, and Norwood, such a clinic is provided by the medical profession in the locality, who together contract with the authority to staff and maintain it.

2. *Use of existing hospitals*, either voluntary or in return for a subsidy. London has such arrangements with three voluntary and 14 subsidised hospitals, adequate payment being made for the clinical assistants and for all expenses incurred. This arrangement is not generally approved by the medical profession, as it increases hospital practice and the privileged practice of the staff; it is not wholly satisfactory to the County Council, as the hospitals stipulate for complete freedom of action. Nevertheless, where the hospital almoners play their part well and refuse treatment to children whose parents can pay, the advantages of this method for the time being are obvious.

3. *Recognised surgeries* are proposed by the British Medical Association for county areas, in which a scale of fees would be payable to most medical men in these areas, after official appointment, for treatment of defects in their surgeries.

4. *School nurses only.*—In contrast to other suggestions the authority may decline to establish a new scheme of treatment. Parents should secure treatment, they may say, under present conditions at the hands of medical practitioners or charitable hospitals, the Poor-law having provided for medical treatment out of the rates for those who cannot afford payment. All that is then necessary is a system of nursing to persuade the parents of what is necessary and to see that it is carried out. In county districts, at least, this should be effected by a subsidy to local nursing associations for the employment of the existing village nurses, preferably through the medium of a county nursing association, which can supply the supervision and instruction necessary. Coördination of nursing in a single system for each county is thus also promoted.

This last system of coping with the physical defects of school-life is certainly at present inadequate. The Poor-law has not yet provided out-patient departments for this kind of work. But reform of the State medical services is at hand, and rather than create new institutions it is best for us to make the utmost use of existing institutions, and so show the need, in reforming the Poor-law or developing the system of State insurance, of creating machinery to deal with these cases of minor ailment in school children as an essential duty of a comprehensive and unified State medical service.

I hope, gentlemen, you will throw yourselves into this school work with zest. It is a fundamental factor in the public health and offers a prospect of immense benefit to national prosperity and happiness, which are primarily dependent on the national health, especially in the rising generation, and especially, therefore, in the public elementary schools.

ON CANCER.

CANCER REGARDED AS AN ADAPTIVE RESPONSE ON THE PART OF CERTAIN CELLS OR CELL GROUPS TO ENVIRONMENTAL CHANGE, AND AS THE RESULT OF A PROCESS OF VARIATION AND SELECTION OF AN "INTER-" OR "INTRA-" CELLULAR KIND.

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THE object of the following inquiry is to analyse, as far as they are known, the conditions under which the new cell characters which we associate with cancer arise in somatic cells; to inquire whether the three conditions which accompany variation and selection among other organisms are also concerned in the evolution of cancer. These are: (1) struggle for existence among cells; (2) cell proliferation; and (3) cell destruction.

We must start with the fundamental truth that every adaptive response made by cells to environmental change is the outcome of the interaction of two factors—environmental stimulus on the one hand and cell potentiality on the other. The response may be "direct"—that is to say, the conditions under which the reaction occurs may be comparatively simple, and the new cell character may arise in direct response to the changed conditions. Or the conditions of the response may be so complex as to elude analysis, and the new characters may appear to arise just as the so-called spontaneous variations arise in germ cells without any direct reference to the environmental change. In both cases alike, however—in the "direct" form of use acquirement and in the "indirect" form of innate variation—the process is essentially the same. It is one of variation and selection among individual units exposed to changed conditions. These units may be individual cells or they may be represented by the physiologically differentiated parts which compose the cells. In the one case selection will be on an *inter*-cellular, in the other on an *intra*-cellular plane.

Any consideration of the cancer problem must therefore include a consideration of the conditions under which certain cells (as the result of the interaction of environmental stimulus with cell potentiality) exhibit certain characters which enable them to live and multiply more freely under changed surroundings. In this sense, therefore, cancer may be regarded as an adaptive response, and it becomes important to ascertain the conditions under which the response is made.

If we recall the different varieties of cells which together form the individual soma of any multi-cellular organism belonging to one of the higher types, we shall recognise that, from the point of view of cell environment, they may be divided into two great groups: The connective tissue or hylic group (Adami) on the one hand, and the epithelial or lepidic group (Adami) on the other; or from the "adaptation" point of view the group without, and the group with external world relationships. As regards the individual cells of the first or hylic group the cell environment is a dual one; it is made up of the nutrient medium and the activities of neighbouring cells, and in a remoter degree of all the remaining cells which compose the organism. But for the epithelial cell the environment is a threefold one. In addition to the nutrient medium and the activities of neighbouring cells, it embraces also the stimuli of the external world or that portion of it with which the cell is brought into more immediate relationship.

Even those cell aggregates which, by downgrowth or outgrowth from the surface layers, form the glandular organs, although they have lost touch with many external stimuli, they still remain in potential or actual communication with the outside world. For even in their case the mucous channels, the ducts by which their secretions reach the surfaces of the body, serve as channels of communication between these cells and the exterior, and the temporary stasis of contents which frequently and intermittently occurs in these ducts, associated as it is with backward mucous currents, acquires additional importance from our present point of view.[1] The internal secretion of the ductless glands like the thyroid is in reality an external secretion retained under pressure and

[1] Address in Surgery, Bond, THE LANCET, July 29th, 1905, p. 275.

re-absorbed, and is associated with a primary origin of these glands from the epithelial or lepidic cell group having external world relationships.

The endothelial and mesothelial cells, connecting as they do the hylic with the lepidic group, stand in an intermediate position. They line the blood-containing and the lymph-containing spaces and body cavities, and their environment comprises the nutrient medium, blood or lymph, the activities of neighbouring and other cells, and such external influences as reach them from the outside world in the shape of food material, micro-organisms, and chemical substances contained in the blood or lymph streams.

The germ cells form another group having peculiar environmental relations. By virtue of their normal capacity for migration and their abnormal liability to prenatal displacement at different periods of their life-history they establish relations with different kinds of body cells, with body cavities, and with the outside world, and, like the somatic cells of different types among which they grow, they give rise to tumours of a special kind, the teratomata, which include also malignant and benign types.

Thus we can divide the body cells, and the blastomata which spring from them, into two large groups: those in which the external world forms an actual or potential factor in the cell environment, and those in which the environment is limited to the nutrient medium bathing the cells, and the activities of neighbouring cells and those which compose the rest of organism. The latter factor will, of course, be reversed in the two groups. In the case of the epithelial cell it will primarily consist of mesoblastic cells, and in the connective tissue group it will consist of epithelial cells or mesoblastic cells of another subtype.

In thus classifying cells and the new growths which arise from them according to their environmental relationships we must remember that only the ordinary environmental factors normal to the cell in each case are thus included. Under abnormal conditions many outside influences may affect the cells of both groups, both those normally exposed to, and those normally excluded from, contact with the exterior of the body. For instance, wounds, solutions of continuity of surface of all kinds, allow contact with, and the entrance of, foreign substances in the shape of micro-organisms and their secretions. The physical stimuli of light, heat, sound, contact, X ray vibrations, radio-active substances, all these and many other agencies may, under special circumstances, bring about environmental changes and exercise an influence on all kinds of body cells.

Bearing these facts in mind, we are now in a position to examine the conditions under which, as far as they are known, the cells of both groups originate those new characters which are associated with tumour formation, malignant and benign. It is evident that any attempt to explain the cancer problem, as an adaptive reaction if it is to be satisfactory, and any attempt to classify the diversified types of blastomata, if it is to be complete, must include a detailed description of the effect of every environmental factor in relation to each normal and abnormal cell potentiality, hereditary and acquired, in the cell group in which the new characters arise. Such a proceeding is manifestly impossible. But this fact does not render useless a partial analysis of the conditions under which cancer occurs in one—for instance, the epithelial—group of cells. Such an inquiry if conducted on sound principles may throw light on the larger problem.

Following out this conception of the threefold nature of the environment of the normal epithelial cell, the cancer problem will mean for us a consideration of the conditions under which the cancer characters arise in epithelial cells in response to some change in one or all of these three environmental factors. Moreover, a careful study of the differences which distinguish the cancerous from the normal epithelial cell shows that these differences can also be grouped in relation to these same three environmental factors.

I. *Nutritional Factor.*

Let us take the nutritional factor first. The epithelial cancer cell exhibits a greater capacity for absorbing and assimilating nutrient material than the normal epithelial cell. Not only so, but in proportion as the normal cell approximates to the cancer type, in such proportion it acquires a larger cytoplasmic surface area capable of assimilating nutrient material. This fact will become apparent when we remember that the fully grown functionally active epithelial cell which covers the skin surface, or lines a mucous cavity, or gland acinus, or gland duct, presents a free cytoplasmic surface to the exterior. It is by this surface that the external secretion which it elaborates reaches the exterior. This surface is not available for the assimilation of nourishment from the blood or lymph stream. It is only available for the ingestion of such nutrient material or foreign substances as may reach the cell from the outside world.

Now in proportion as the cancer cell grows away from its normal relationship to the external world, in proportion as it tends to lead an independent existence, and to grow and multiply amongst the neighbouring mesoblastic cells, in proportion, moreover, as it ceases to pour out external secretion and to carry on normal functions, in such proportion it ceases to exhibit the normal differentiation of cytoplasmic substance into absorbing and secreting surfaces, and develops assimilative and absorbing capacities over its whole cell surface. Moreover, as we should expect, this retrogressive change is most marked in the peripherally placed cells of primary and the cells of secondary growths.

This disturbance of the normal relationship between secreting and absorbing surfaces is characteristic of cancer of the epithelial type, but, as we shall see later, it is not characteristic of cancer of the connective-tissue type. This is probably due to the fact that the normal connective-tissue cell has no external world factor in its environment, consequently the blastomata which originate from these cells do not exhibit changes in reference to it, while coincidently with this distinction we find, also, that external stimuli are more closely associated with the origin of cancer than with the origin of sarcoma.

It is interesting to note that cancers of the breast of the colloid type present only a slight degree of malignancy, and the question arises whether the low degree of malignancy may not be associated with the retention on the part of the epithelial cells which form such growths of some capacity of forming an external secretion which, under the conditions of retention present, brings about the degeneration of the cells.

But whatever may be the nature of the secretory change which distinguishes the cancer from the normal epithelial cell, it is certain that a greatly increased capacity for vegetative growth is one of the distinguishing features of the cancer cell. Vegetative growth means increased assimilation of nourishment, and this in the large epithelial cancer cell means increase in area of cytoplasmic surface capable of assimilation. Moreover, the rapidly recurring cell division characteristic of the cancer cell is closely associated with this recurring alteration of relationship between bulk of cell substance and area of assimilating surface.

There are certain facts which suggest that this increased assimilative capacity in the cancer cell is a further development of a capacity possessed in lesser degree by the normal epithelial cell. Thus, Fischer found that the subcutaneous injection of Scharlach R in olive oil beneath the corium of the rabbit's ear stimulated the epithelial cells of the epidermis, and produced in them a downward growth in the direction of the substance so injected. This experiment demonstrates the influence of an environmental change of a nutritional kind in initiating an adaptive response on the part of epithelial cells exposed to it. In this case the chemiotactic capacity displayed lies within the normal limits of epithelial cell potentiality, while in the case of the cancer cell it extends beyond these limits.

II. *Neighbouring Cell Factor.*

We must now consider the second factor in the environment of the epithelial cell: the physical and chemical activities of the neighbouring cells and of the cells which compose the organism. In response to this "other cell" influence the epithelial cancer cell exhibits capacities of an adaptive kind, of a kind which favours its own vegetative growth and cell division at the expense of the growth and functional activity of the neighbouring cells of different type. The aim (if we may so express it) of the epithelial cancer cell is to stimulate the surrounding mesoblastic cells to a reactionary growth, sufficiently active to provide the necessary vascular support, but not so active or so fully organised as to threaten by fibrous encapsulation the nutrition of the cancer cells. This growth relationship between cell-groups of different structural and functional types (which in normal

development is so delicately balanced) is disturbed by the great vegetative activity of the cancer cell.

As I suggested[2] in 1886, the capsule of any glandular epithelial organ may be regarded as the expression of a reactionary growth on the part of mesoblastic cells to the encroachments made upon them by the growth of cells or cell-groups of a different germ layer origin. The growth limit of any glandular organ is determined, within certain hereditary limits, by the opposition offered by neighbouring mesoblastic cells to the growth of the epithelial cells which compose the organ. The capsule is the result of this adaptive reaction on the part of the mesoblast cells, and the exact stage in ontological development at which a supporting and nourishing stroma becomes a limiting fibrous capsule is a matter of mutual adjustment between the hereditary capacity of epithelial cell growth and division, and the hereditary capacity of connective-tissue cell growth and division. It is only in some such process of mutual adjustment between the activities of cell-groups of different types that we can conceive of the orderly development of the organs and tissues of the multicellular organism as rendered possible.

We may extend this conception of the relationship between supporting stroma and enveloping capsule to the problem of the growth of neoplasms, malignant and benign. The growth of a benign tumour of the lepidic and hylic type is limited by a fibrous investment of connective-tissue growth analogous to the capsule of a normal organ. It is formed by the surrounding cells of different type or sub-type. In this case, also, the stroma, which serves as a support and nourishing medium for the cells of the tumour, becomes at its surface a more fully developed fibrous capsule. The cells of the definitely benign growth exercise the activities of normal tissue cells of corresponding type towards the surrounding mesoblast cells, and the reaction made by the mesoblast cells resembles that made to normal tissue cells.

It is very different with the cells of the malignant growth. The balance of mutual growth resistance has been disturbed. Having lost the capacity for normal cell division, conformable with the exercise of normal function, and the interests of the surrounding tissues and the body as a whole, the cancer cell has gained power to undergo cell division irrespective of the interests of the surrounding tissues and the body as a whole, and conformable only with the fullest exercise of its own vegetative activity. And this adaptive process requires the exercise of a very delicate influence on the part of a cancer cell over the growth activities of the surrounding mesoblast cells. Stimulation above or below the right level results in the development of a limiting and protective capsule on the one hand, or an inadequate nutritive stroma formation on the other. Further, the exercise of this specific influence by the cancer cell induces in the mesoblast cells abnormal growth along the same direction as that in which the cancer cell has itself varied away from the normal epithelial cell. And this result is brought about probably by a bio-chemical rather than by any sperm-like influence on the part of the cancer cell.

The process of stroma formation is a lowly organised phase of the same process of cell division and cell organisation by which, when carried to a higher level of tissue development, the mesoblast cells are enabled to resist the encroaching growth of the cancer cells. Thus Ehrlich and Bashford have shown that under certain conditions of repeated transplantation, the epithelial cells of mouse cancer may evolve a capacity to influence the reactionary growth of the mesoblast cells and reduce it to even a lower level of tissue development. These observers have found that under such conditions the portion of mammary cancer so transplanted may induce in the connective tissue in which it is embedded a low-grade growth indistinguishable histologically from sarcoma. These facts confirm the suggestion that the capacity of the epithelial cancer cell to influence the growth of mesoblastic cells in abnormal directions is an excess variation of a capacity normally possessed in a lesser degree by epithelial cells.

III. *External World Factor.*

We may now consider the third or external world factor in the epithelial cell environment, and try to ascertain in what way, in regard to it, the cancer cell has varied away from the normal epithelial cell.

The two chief adaptations exhibited by epithelial and gland cells in relation to external world stimuli are (1) elaboration of external secretions and (2) deposition of formed material of a protective kind. The epithelial cancer cell shows a diminished capacity for the elaboration and discharge of the secretions formed by normal cells of the type to which it belongs. This peculiarity, as in the case of other cancer characters, is a relative change. Thus the cells of malignant adenomata secrete some mucus. Müller long ago detected casein in the cells of mammary cancer; Waring has found pepsin in gastric, and trypsin in pancreatic cancer tumours. Other observers have detected bile in the metastatic growths formed by liver cancer.

Allowing, however, for these observations, the fact remains that the external secretions elaborated by cancer cells differ quantitatively and qualitatively from the secretions formed by normal epithelial cells of a corresponding type. In fact, the degree to which the cancer cell has lost the power to elaborate normal external secretion is a direct index of its malignancy, and with this decreased capacity in one direction goes increased capacity for vegetative growth, and the point that I particularly wish to emphasise is the desirability of considering this peculiar loss of functional capacity in relation with the special factor in the environment (the external stimuli) with which it is under normal conditions associated.

But besides elaborating external secretions, epithelial surface cells react to the influences of the external world in another way, and that is by the formation and deposition, either within the limits of the growing cell or outside these limits, of material of a protective kind. Thus the surface cells of epidermal tissues undergo keratinous change. And other examples of cytoplasmic differentiation of a similar kind could be mentioned. Now the cells of a squamous-celled epithelioma do not present the same degree of keratinisation as that shown by normal squamous epithelial cells. This is especially noticeable in the cells composing the secondary deposits formed by squamous epithelioma. Neither do such cells present the regular cogwheel interdigitations found in normal cells. It would be interesting to know whether cilia are present in cancer cells arising in ciliated epithelium, and, if so, whether they are found in the cells forming the metastatic deposits found in such tumours.

We may recapitulate this enumeration of the adaptive characters shown by epithelial cancer cells to the three primary factors of epithelial cell environment by saying that the characters associated with the cancer habit indicate diminished or defective adaptation to the external world factor, and increased adaptation to the nutritional factor, and to the activities of other cells. A fully developed and functionally active epithelial cell flourishes with one cell surface attached to the underlying cells and bathed with nutrient lymph, while the other surface is free and exposed to external influences, whereas the epithelial cancer cell grows best with all its surfaces brought into relationship with the activities of neighbouring cells, and bathed in nutrient material of a lymph-like nature. Such, then, is the cancer process viewed as an adaptive response on the part of epithelial cancer cells.

Effect of Bodily Conditions.

Let us now consider epithelial cancer from the standpoint of the individual organism and consider the bodily conditions which are supposed to favour its origin.

Age of individual.—Individual age on closer analysis means relative senility of the different epithelial tissues of different types in the same individual. Cancer tends to originate in epithelial tissues that are growing old. But age means physiologically, number of previous generations passed through by the cells composing the particular tissue in question. And tissues which are nearing, or have reached, the hereditary limit of capacity for normal function and normal metabolism have, as a rule, passed through a larger number of cell generations than tissues which are still active functionally.

The question, therefore, is, What are the external or internal influences (apart from the length of life of the individual as a whole) which tend to induce abnormally rapid cell division in, and consequently ageing of, epithelial tissues? Among such influences we must include mechanical and chemical irritation, X rays, alcohol, soot, arsenic, betel nut, tobacco, clay pipes: all these are chronic irritants. And in so far as chronic irritation acts as a predisposing

[2] Transactions of the Leicester Medical Society, 1886.

cause of epithelial cancer, it does so by disturbing the nutrition of the epithelial cell and by causing rapid cell division, and in this way by bringing about cell senility.

The same senile influence is exerted on epithelial tissue by the frequently repeated exercise under special abnormal conditions of otherwise normal physiological functions. Thus cancer is more frequent in the uterus and mammæ of women who have borne and suckled children than in women whose organs have not passed through such cycles of increased and diminished cell growth, cell division, and cell destruction. These last three processes are the three conditions which favour the occurrence of variation and selection among organisms exposed to them, and of the abnormal conditions associated with their exercise, stasis of secretion and sudden arrest of function seem to be the most important.

Joining these facts together we find that cancer characters tend to appear in epithelial tissues which are nearing, or which have reached, the hereditarily fixed limits of functional capacity—that is to say, among cells which exhibit diminished capacity for cytoplasmic function and increased capacity for nuclear division of an abnormal kind. We use the word *among*, and not in, advisedly, because there is no reason to suppose that the worn-out, senile, epithelial cells themselves become cancer cells. We must rather suppose that these worn-out cells, which are ill adapted to the changes in the environment associated with the origin of cancer, perish, and are removed, and that their place is taken by younger undifferentiated cells, and that among these younger cells some possess capacities of vegetative growth which are of great value in enabling them to survive under the altered conditions, and during the struggle for room and nourishment going on with neighbouring cells. Of these abnormal characters, diminished capacity for cytoplasmic function and increased capacity for nuclear division seem to go hand in hand. As cytoplasmic function decreases assimilation increases, and as the nucleus ceases to direct cytoplasmic activity along functional lines, it tends to be exercised in initiating rapid and disorderly cell division.

Having thus indicated some of the main features which distinguish the cancer cell from the normal epithelial cell, having associated the different bodily conditions and the external influences found during the origin of cancer with one common factor, disturbance of nutrition, we are now in a position to ask whether the conditions, under which these new cancer characters appear in cells, suggest a "variational and selectional" or a "use acquirement" origin in the case of epithelial cancer.

We wish to ascertain, in other words, whether the older epithelial cells which have been exposed to the disturbed nutrition, to the mechanical or chemical irritation, to the abnormal activities of other cells, or to abnormal influences, reaching them from the body as a whole, or to the influences, whatever they may be, which predispose to cancer, we wish to ascertain whether these cells themselves become cancer cells, or whether during the struggle for existence, room, and nourishment, the increased cell proliferation, and the destruction of cells of less vegetative capacity, variations occur among the younger generations of epithelial cells exposed to the environmental change, some of which, being more adapted to live and multiply under the new conditions, survive as cancer cells.

If we analyse the changes which occur in epithelial tissues during the so-called pre-cancerous stage, we find new characters in some only and not in all the epithelial cells exposed to the changed conditions. Cancer seems, in some cases at least, to originate in a very small cell group, or even in a single cell, as we should expect if it originates in variation and not in use acquirement. In the second place, cancer is associated with the death and removal of large numbers of epithelial cells. Destruction of epithelial cells is constantly associated with all kinds of chronic irritation of epithelial tissues—in X ray dermatitis, in ulceration of epithelial surfaces due to microbic infection, in leucoplakia of the labial, buccal, and lingual mucous membrane, induced by alcohol, tobacco, syphilis, and the clay pipe, in the erosion of the os uteri the result of septic uterine discharges, in the involutionary changes which accompany chronic inflammation of glandular organs, such, for instance, as chronic mastitis. All these changes, which make up what we know as the pre-cancerous stage, are associated with the atrophy, death, and removal of large numbers of epithelial cells.

These facts strongly suggest that the cancer character originates in the younger actively proliferating cell layer rather than in the older more highly differentiated layer of epithelial cells which constantly perish and are removed. They suggest also that the cancer character arises among these younger epithelial cells as a variation rather than as an acquirement. In this sense the cancer response is the "indirect" rather than the "direct" result of some environmental change.

Such, then, in brief outline, is our conception of the cancer process as it originates in epithelial tissues.

Cancer of the Connective-tissue Type.

We now come to the consideration of the connective-tissue or mesoblastic cell, and the blastomata which arise in connexion with it. In the first place, the mesoblastic cell only responds to two environmental factors, the nutrient medium, the blood- or lymph-stream on the one hand, and the activities of other cells, epithelial or mesoblastic, on the other.

I. *External World Factor.*

Unlike epithelial cells, the connective-tissue cell has no relationship with the outside world; consequently, it does not, as a rule, show any differentiation of cytoplasmic substance into free and attached, or assimilating and secreting surfaces. The whole cell surface is bathed by the nutrient medium. It does not elaborate any external secretion because it has no free surface from which it can discharge mucus or enzymes on to the exterior of the body.

Even when it elaborates and deposits formed and inert material, such deposition occurs for the most part symmetrically, unless the irregular incidence of the stimuli interferes and brings about a corresponding inequality of deposition. This occurs in response to the unequal environmental influences of contact, pressure, and strain, as well as chemical stimuli. Even in such circumstances, the unequal stimulus which causes the unequal response is the outcome of the activities of an internal, cellular, and not an external outside world environment.

It is true that the endothelial and mesothelial cells line tubes and cavities which contain blood and lymph, but these nutritional streams exert upon the cells the influences of a nutritional and not an outside world influence, subject, of course, to alterations in the blood and lymph due to the addition of nutritive or chemical substances which reach it from the outside world.

II. *Neighbouring Cell Factor.*

When we come to the next environmental factor, the stimuli supplied by the activities of neighbouring and other cells, we find that the mesoblastic cell is peculiarly sensitive to such influences, especially to the activities of cells of the epithelial type.

Observations made during the experimental inoculation of cancer in mice show that such inoculation in any susceptible animal is followed by three definite phases: an early phase during which successful inoculation may still be practised on the same animal, an intermediate phase during which such inoculations regularly fail, and a terminal phase in which re-inoculation is again successful, and in which auto-inoculation and metastatic deposits occur. These alternating phases of susceptibility and resistance to the growth of the epithelial cancer cell on the part of mesoblastic cells afford clear evidence of an attempt on the part of the connective tissues to form a defensive reactionary growth which is ultimately overcome by the increasing growth and activity of the cancer cells. They suggest the evolution of a capacity of adaptive response on the part of cells of both groups, the invading cancer cells on the one hand, and the invaded mesoblastic cells on the other, of the same kind but of a more specific nature and with less successful result, as that made by the phagocytes to the microbes of disease.

The fact that secondary growths are less completely limited by fibrous investment than primary growths suggests either increased malignancy on the part of cancer cells which compose these metastases or of enfeebled resistance on the part of the connective tissues which surround them. In connexion with the occurrence of metastasis it is interesting to note that the quality of the resistance made by the mesoblast cells depends on specific, racial, and hereditarily transmitted characters. It is increased by age, and it can be diminished and eventually overcome by the continued

presence and growth in the tissues of a primary cancerous tumour.

Moreover, it is possible, as Bashford has shown, to raise the stroma-compelling capacity (i.e., the virulence) of epithelial cancer cells towards the resistance-offering capacity of the connecting tissues in any race of mice by passing the grafts through a series of inoculation generations in a number of individuals of the same race. This shows that it is possible to raise the malignancy of epithelial cancer cells by cultural methods, in the same way that the virulence of any disease organism can be raised, the difference being that in the case of cancer the change effected is a specific and not a general one, as in the case of disease organisms. This fact, again, supports the variational and selectional origin of cancer cells.

The labours of Ehrlich and Bashford have further shown that under certain circumstances of repeated inoculation the mesoblastic cells respond to the foreign epithelial cancer cell by the growth of a cellular tissue of low grade development indistinguishable histologically from sarcoma—that is, from cancer of the connective tissue type. This occurrence (if the interpretation placed upon it by the above observers is a correct one) supplies evidence of the origin of cancer in mesoblastic cells as the direct result of an alteration in the activities of certain epithelial cancer cells which for the time being form the cellular environment of the mesoblastic cells. There is no record of the occurrence, at any rate in the human subject, of the reverse condition. That is to say, no one has seen the occurrence of cancer characters in the epithelial cells of any organ as the result of the growth of secondary sarcomatous deposits in such an organ.

Finally, we must remember the specific nature of the cancer response. The fact that cancer cannot be transferred by inoculation from an animal of one species to an animal of a different species, and that inoculation is frequently unsuccessful when practised on an animal of a different variety, affords strong evidence of the delicacy of the balance of tissue relationship between epithelial and connective tissue cells. For the viability of the cancer graft the little aggregate of abnormal epithelial cells depends on the attitude taken up by the mesoblastic cells of the host in regard to the graft. If these react moderately and in a specific manner and form a nutrient stroma the graft lives and grows; if they react aggressively and form a fibrous tissue the graft dies.

All these facts illustrate the peculiar sensitiveness of the mesoblastic cells to the cellular element in their environment, and the alterations which take place in this sensibility are of an adaptive kind. But the conditions of the "sarcoma response" differ from those of the "cancer response" in yet another way in regard to the cellular element in the environment.

Age Incidence.

The age incidence of the disease is different in the two cases. While epithelial cancer tends to originate in epithelial tissues that are becoming senile, it tends to thrive best in connective tissues that are young. On the contrary, connective-tissue cancer tends to originate in the connective tissues of young individuals. Sarcoma has long been regarded as a disease of infancy, childhood, and young adult age. Roger Williams has collected many observations which confirm the accuracy of this clinical inference and which also, on careful inquiry, suggest further important differences between epithelial and connective-tissue cancer from our present adaptational point of view.

If we take benign tumours of the connective-tissue-cell type we find that chondromata are frequently multiple, often bilateral, and sometimes symmetrical. The fibromata are frequently multiple, often bilateral, and, in the case of the multiple fibromata of nerves, are probably congenital in origin. Moreover, these tumours have been noticed in a considerable proportion of cases to take on a sarcomatous type of growth. Osseous tumours are notably bilateral and often symmetrical, and what is most important hereditary transmission can be demonstrated in some cases. Thus, Reclus reports the case of a man with epiphysial exostoses, whose sister and three sons also showed the same peculiarity, the sister's daughter was also affected, also her four children, and seven of the grand-children.

Non-malignant ovarian tumours of the dermoid and papillary and cystic forms are all frequently bilateral. When we consider malignant tumours of the connective-tissue-cell type we find evidence that sarcomata tend to be bilateral in a greater proportion of cases than epithelial cancer in the same organ. Thus Gross reports 1664 cases of mammary cancer in which only two were bilateral, while in 156 cases of mammary sarcoma three were bilateral. In the ovary malignant tumours are frequently bilateral, but even here ovarian sarcomata, especially the round-celled variety, tend to be bilateral in a greater degree than other malignant growths. They occur chiefly in early life. In the testes round-celled sarcoma again is the usual and more frequent form of bilateral tumour. On the other hand, teratoid and dermoid non-malignant testicular formations do not seem to be bilateral.

Of the early life renal tumours, bilateral sarcomata are the most frequent. Glioma of the retina is frequently congenital and usually double-sided, and curiously and most important as in the case of epiphysial exostoses it is often hereditary. Newton records a family of 16 persons, of whom 10 died from glioma of the retina. The pigmented choroidal sarcomata are occasionally bilateral. Myeloid sarcoma of the lower jaw is sometimes bilateral.

Putting these facts together we find that tumours of connective-tissue type are often bilateral, and sometimes symmetrical in arrangement; they are sometimes congenital and usually occur in childhood or early adult life, and they are occasionally familial or hereditary. Now bilaterality and congenital origin suggest developmental and general, rather than environmental and local influences as factors in causation; while hereditary transmission, especially in the ocular glioma cases, also points in the same direction. Just as, on the other hand, the absence of bilateral arrangement and early life origin in the case of epithelial cancer suggest a diminished influence on the part of such factors, though developmental tendencies may presumably operate even here as predisposing causes, in so far as they exert an influence on the epithelial tissues to yield to or to resist the senile change.

In the same way mechanical and chemical irritation by external agencies, which play so important a part in the causation of epithelial cancer, must be of secondary importance in the case of cancer among cells which have no external world factor in their environment. But if, on the other hand, we recall the peculiar sensitiveness of the mesoblastic cell to the life activities, physical and chemical, of the neighbouring cells we are on firmer ground. This sensitiveness to "other cell" activity seems peculiar to mesoblastic cells of certain connective-tissue types, just as sensitiveness to the secretions of micro-organisms is peculiar to the phagocyte, another specialised type of mesoblast cell. It is, indeed, possible that the supposed association between traumatism and sarcoma may really depend on a reaction on the part of the connective-tissue cells to the abnormal activities of the extravasated red and white blood cells at the site of the injury rather than on the injury done to the connective-tissue cells themselves.

Nutrient Medium.

We must not omit to consider the powerful influence exerted by the nutrient medium, the remaining factor in the mesoblastic cell environment.

Looked at biologically, this nutritional factor resolves itself into a cytological one. It becomes a question of changes in the cellular elements in the blood and lymph streams, and of changes in the secretions or excretions poured by the body cells of various types into these two streams of nutrient material. The difference in chemiotactic capacity between cancer and sarcoma cells is of much interest from this point of view, and cannot, I think, be wholly explained by a difference of primary location in the two kinds of cancer cells in regard to the lymphatic and blood channels. The epithelial cancer cell perishes in the blood stream and flourishes in the lymph stream, while the connective-tissue cancer cell flourishes in the blood stream more luxuriously than it does in the lymph stream, and this difference in relationship would seem to depend partly on a difference in sensitiveness to the activities of the endothelial cells which line the lymphatics and the capillaries respectively.

Finally, the fact that increased vegetative growth and decreased functional activity, the two fundamental characteristics of malignancy, are present in both types of cancer,

not only confirms the suggestion that the cancer process is an adaptive response in both cases, but it also suggests that the particular environmental phase to which the cells are reacting, and to which, so to speak, they are trying to become adapted, has this feature in common in the two types—namely, that it is an environment which favours vegetative activity and does not favour functional activity. While the further facts—namely, the slender association of mesoblastic cells with an external environmental factor, the slight influence of external stimuli in the causation of connective-tissue cancer, the occurrence of bilaterality, and congenital origin, and occasional hereditary influence in sarcomatous tumours—all these suggest the importance of developmental factors and nutritional influence as opposed to external stimuli in this disease.

Moreover, the absence of any keen struggle for cellular existence and of active cellular proliferation, or of extensive cellular destruction, during the pre-cancerous stages of connective-tissue cancer suggests that the conditions under which sarcoma originates are not identical with those under which cancer of epithelial type originates. And in view of the special sensitiveness of mesoblastic cells to the activities of other cells it is possible that it is in this direction that the explanation of the differences in the origin of cancer in the two cases is to be sought.

Benign Tumours.

We must now consider the blastomata which arise among cells of epithelial and mesoblastic type, and which are not characterised by malignant features.

Looked at from the standpoint of adaptational response the difference between benign and malignant tumour formation becomes a question of degree. It depends on a difference in capacity on the part of the cells which compose the tumour to live and multiply in an abnormal environment of a special kind. For instance, the cells of the epithelial adenoma of malignant type are able to live and multiply in an environment formed by cells of quite another type, exercising activities of another kind, such, for instance, as that provided by the mesoblastic cells of the lymph gland. The cells of the epithelial adenoma of the benign type, on the other hand, have not got this capacity, they can only live and multiply, and that to a limited extent, among cells and tissues of the type to which they themselves belong.

It is true that the cell character and potentiality have been so far modified as to enable these cells to grow in a more or less orderly fashion in an environment in which the external world influence has been reduced to a minimum, and that as a consequence such cells have lost much of their capacity for normal function and normal secretion. But in spite of this partial change they are quite incapable under the ordinary conditions of benignity of living and dividing in the environment provided by a lymph gland, a situation in which cancer cells can flourish.

In the same way the cells of the benign tumour of the connective-tissue type, the chondroma, the osteoma, and the fibroma, resemble the cells of the benign epithelial tumour. Under normal conditions of benign growth and homotropism they can only flourish when growing in a community formed by cells of their own type of tissue.

It is true also in the case of these benign blastomata of hylic type that the new characters acquired by the cells which compose them enable them to grow and divide in a more or less orderly fashion in an environment which is not normal, and in which the relationship which normally exists between mesoblastic tissues of different sub-types has been modified by locally acting causes such as traumatism, or more general factors such as developmental potentialities and possibly abnormal internal secretions. But they do not while remaining benignant vary beyond this point. The cells composing a fibroma or osteoma of benign type cannot live and multiply in the environment provided by the lymph gland tissue, while the cells of the malignant fibroma or osteoma can live and grow in such unusual surroundings.

Teratomata.

So also with the teratomata. The cells which give rise to a teratoma are cells possessed of certain characters analogous to those of germ cells, from which probably in some aberrant form they are directly derived. They are cells which have inherited or acquired a capacity to live and multiply and exhibit teratoid characters in surroundings and under conditions unusual in germ cell development.

We are ignorant of the causes which start such aberrant or displaced cells on a course of abnormal cell division and tumour formation, but we are probably right in regarding the whole process as a response (restricted within the limits of hereditary potentiality) on the part of such cells to the abnormal environment in which they are placed. Moreover, these teratomata, which are really blastomata arising among toti-potential cells, exhibit the same transitional characters and the same tendency to diverge into malignant and benign types as the blastomata which arise in multi- or uni-potential cells—that is, in cells of epithelial or connective-tissue type.

Chorion-epithelioma is especially interesting from this point of view. Here is a blastoma arising among uni-potential cells, of extraneous and fœtal, or rather trophoblastic, origin, which have acquired a capacity to live and multiply in situations and under conditions foreign to their normal habitat. They are no longer sensitive to the restrictions to growth of a homotropic kind imposed on such cells by the internal secretions, associated with the metabolism of the lutein ovarian tissue, or the fœtal tissues, while they have at the same time acquired increased vegetative capacity. In the one form of activity they form the benign hydatid mole, in another more active form they give rise to the extremely malignant chorion-epithelioma, and the point of interest is that between these two extremes they exhibit transitional characters, intermediate varieties, half-way steps, as it were, on the way to the more completely adapted form shown by the malignant type.

Thus, while the structural and functional differences which separate the extreme types of benign and malignant blastomata represent different degrees of adaptive capacity, on the part of the cells which compose them, to environmental change of a slight or profound character, there are tumours of an intermediate class in which the cells show transitional characters, and in which it is difficult to decide whether they should be included in the benign or the malignant group.

Surgeons are familiar with tumours which originate as benign growths, and which for many years continue to exhibit such features, but which, under the influence of certain imperfectly understood environmental stimuli, of which imperfect removal seems to be one of the most important, begin to vary away from the benign type and to exhibit a capacity for vegetative and peripheral as opposed to central growth, and which under certain conditions may vary further still, and, losing their homotropic tendencies, may originate metastatic growths. Many observers have noted that among benign tumours the chondromata are especially liable to give rise to such secondary growths; this peculiar tendency may well be associated with the peripheral mode of growth characteristic of such tumours. Kirche and others have described multiple metastases in primary fibromyoma of the uterus of originally benign type.

Benign tumours of epithelial type also give rise to secondary deposits under special conditions thus: Adami, Finley, and Russell have shown that the secondary growths derived from benign adenomata of the liver sometimes display malignant characters. There is, indeed, every reason to suppose that cells can and do escape from benign tumours just as they do from placental chorionic tissue in normal pregnancy, or just as they do constantly in the case of malignant growths, and the question of their subsequent growth and proliferation in the new situations would seem to depend on a difference in capacity between benign and malignant cells to overcome the resistance offered by the invaded tissues.

But not only do the cells of benign tumours under certain conditions exhibit this capacity to originate detached growth foci, the apparently normal cells of an organ like the liver or the thyroid may, under certain circumstances, exhibit the same tendency. The attempts at cell regeneration which accompany the process of biliary cirrhosis seem to provide the conditions favourable for the origin and growth of new liver cells capable of functioning as normal liver cells or under other conditions of forming benign adenomata, or, again, of adeno-carcinomatous tumours capable of originating metastases in other tissues.

This development of liver cells of transitional types during cirrhosis, a process characterised by cell destruction, cell proliferation, and nutritional impairment, is of especial interest in connexion with our present conception of cancer as an adaptive response, depending on variation and selection

among cells exposed to environmental change. It also serves as a connecting link between blastomatosis on the one hand and cell metaplasia and blastomatoid hypertrophy, and with regeneration of tissues and organs, and the process of repair which accompanies the healing of wounds on the other.

All such processes thus fall into line as examples of adaptive response on the part of cells of different types to different conditions. The same is true of thyroid tumours. Adenomatous growths, structurally benign, of thyroid origin have been found in the cancellous tissue of bones in various situations, displaying all the destructive and vegetative activities characteristic of malignant tumours. On the contrary, thyroid growths, undoubtedly malignant, frequently elaborate colloidal material in newly formed acini, the cells of which, though of malignant type, have retained some of the functional capacity of normal thyroid cells. Moreover, in other situations typically malignant primary tumours of considerable age and size have been encountered unaccompanied with any evidence of secondary deposit. Moreover, the malignant tumours themselves afford examples of every degree of malignity, from the slowly growing atrophic to the rapidly growing, widely disseminating virulent type.

The peculiar tendency of thyroid cells to grow in bone is another example of the delicate, and in some cases specific, nature of that relationship between tissue cells of different types of which we have already spoken, and we can only suppose that cells are under certain circumstances carried from thyroid and liver benign tumours, as they are under other circumstances carried from other organs and other tissues, such as chorionic villi, and come to rest in many situations, but only those cells survive and multiply which find themselves in tissues and in situations which provide an environment favourable for their growth.

Thus we are led to regard benign and malignant tumour formation as a process of adaptation on the part of certain cells to environmental factors which concern their welfare as cells rather than the welfare of the organism as a whole.

Cancer Character.

The change of character which distinguishes the cancer cell from the normal cell is of a retrogressive rather than a progressive kind, or rather largely retrogressive and partly progressive. It is a change comparable with that by which a parasite becomes adapted to an environment which affords diminished scope for functional activity, and increased facility for the assimilation of nourishment.

In the epithelial cancer cell, increased vegetative activity is obtained at the expense of diminished power of secretion and reaction to external stimuli. In the connective-tissue cancer cell vegetative activity is obtained at the expense of structural differentiation of the cytoplasmic substance. Thus in cancer there is a disturbance of the normal relationship between nuclear capacity for directing cytoplasmic metabolism along functional lines, and nuclear capacity for initiating cell division.

In proportion as the cytoplasm ceases to be sensitive to use stimuli and becomes increasingly sensitive to nutritional stimuli, in such proportion the nucleus ceases to direct cytoplasmic activity along functional lines useful to the organism, and directs it along lines of assimilation useful to the cell. In proportion as the cytoplasm ceases to respond to the activities of neighbouring cells, nuclear division escapes from the restrictions to too frequent cell division normally imposed on healthy cells by the activity of neighbouring cells of different type. Moreover,[3] all these increased capacities in one direction and diminished capacities in other directions which go to make up the cancer habit are qualities possessed in somewhat less degree by normal cells. Some facts noted by Ehrlich seem also to suggest that under certain circumstances the cells of a repeatedly inoculated mouse cancer may partly revert to the condition of normal cells.

All these facts strongly support the conclusion that the complex cell change that we associate with cancer has been built up by variational changes from the normal type, and that one of the stages passed through is represented by the various forms of benign growth. They suggest that the external cause of epithelial cancer is to be sought in some change in one of the three factors which make up the environment of the epithelial cell, in interaction with an internal factor, the potentiality, hereditary or acquired, of the cell exposed to the change. Whereas in cancer of the connective-tissue type, cell potentiality as affected by developmental and hereditary influences seems of more importance than environmental change.

The cancer response differs from the response made by germ cells to environmental influences in this respect. The germ cell and the cancer cell have both ceased to respond to "use," and only respond to "nutritional" stimuli; but in the cancer cell, unlike the germ cell, the change is brought about by retrogressive variation to a parasitic habit, with the loss of a capacity to undergo normal development which is retained by the germ cell.

Summary.

Thus we are led to describe blastomatosis as an adaptive response on the part of individual cells, or cell groups, to environmental change of three kinds: alteration in the stimuli which reach the cell from the outside world; alteration in nutrition; alteration in the activities of the other cells which compose the organism. This adaptive response may be "indirect," the result of variation among the cells exposed to the changed conditions accompanied by selection of an *inter*-cellular kind, or it may be "direct," and the result of a process of variation in the physiologically differentiated parts which compose the individual cell, accompanied by selection of an *intra*-cellular kind, in which case it represents a "use acquirement."

The new cell characters which so arise may be grouped in two main divisions—one characterised by typical growth including all the histological varieties of benign neoplasms from teratoma to neuroma, the other characterised by atypical growth including the malignant types. But between these two groups there are numerous tumours composed of cells presenting transitional characters. Yet, again, the second group, characterised by atypical growth, may be divided into neoplasms composed of cells of epithelial type, and neoplasms composed of cells of connective-tissue type. And between these two groups there are again connecting links, for the malignant tumours which arise from cells of primary mesoblastic and secondary epithelial origin tend to exhibit transitional characters.

Of the two factors concerned in the origin of malignant growth (cell potentiality and environmental influence) environmental influence plays a large part in the genesis of cancer, cell potentiality in the genesis of sarcoma. Of the environmental factors concerned, outside stimuli exert a much larger influence in the genesis of epithelial than of connective-tissue cancer.

Other Theories of Cancer.

In conclusion, we must now compare the account of blastomatosis here propounded with previous descriptions of tumour formation put forward by other observers.

Cohnheim and Ribbert.—"Pre-" and "post-" natal cell displacement, either alone or in association with diminished growth resistance, have been put forward by Cohnheim and Ribbert as causes of tumour formation.

Parasitic.—For some time the theory of parasitic infection held the field.

Von Hansemann.—This author suggested "anaplasia," the formation of new races of cells possessed of abnormal characters, in association with an abnormal distribution of nuclear cell material, as a cause of cancer.

Adami.—Stress has been laid by Adami and others on "habit of cell growth" and on the process of cell undifferentiation as it is present in metaplasia and normal cell division.

Oertel.—Assuming two kinds of nuclear material, one controlling function, the other vegetative activity, Oertel associates the loss of functional activity characteristic of cancer cells with the loss of the former kind of nuclear material during the irregular cell mitoses which accompany malignant growth.

Marchand.—Attention has been drawn by Marchand to the marked difference in potentiality between the normal embryonic cell and the embryonic cell of neoplasmic growth, which must be taken into account in any attempt to explain blastomatosis as a return on the part of certain body cells to embryonic characters.

Hauser.—From a minute examination of the changes shown by the epithelial cells of intestinal new growths Hauser put forward in 1890 the suggestion that the cells of new growths are the descendants of some single cell which, during the course of ontogenetic development, has "mutated"

[3] Gould, Bradshaw Lecture, THE LANCET, Dec. 10th, 1910, p. 1665.

or varied away from the normal character, and has given rise to cell descendants in which these new characters persist, and among which vegetative activity is one of the most important. He also associated this mutational change with excess of cell nutrition.

Adami.—Dissatisfied with any attempt to explain the origin of the new characters found in neoplastic cells by chance variation or mutation, Adami would regard such mutational change as a direct response on the part of such cells to environmental influences. Believing, further, that no one environmental stimulus is responsible for the whole cell change, Adami considers that a number of different influences may combine to cause the cancer change. Among these he enumerates the influence of cell displacement, chronic inflammation, irritation, mechanical or microbic in origin, cell senescence, impaired cell nutrition leading to cell proliferation, in association with preceding changes in the underlying connective tissues in the case of some epithelial cancers, while among subsidiary influences he mentions diminished external growth resistance and altered cell secretion.

H. Ross.—More recently H. Ross, impressed by the powerful influence exercised by the products of cell death in association with certain chemical substances of an alkaloidal nature, in initiating cell division in leucocytes and lymphocytes and some other cells, has suggested that the rapidly recurring division of cancer cells may be associated with a like cause.

Such are some of the many and various theories which have been put forward at different times to explain the origin of tumour formation, and incidentally the origin of cancer.

The present contribution makes no attempt to put forward any new explanation of the cause of cancer. It must rather be regarded as an attempt to consider the cancer problem from a wider biological standpoint by directing attention to the adaptational nature of the new characters acquired by cancer cells, and as an attempt to analyse some of the conditions under which benign and malignant tumour formation takes place.

The result of such an analysis goes to show that cancer, like all "new growth," must be regarded in the light of a response of an adaptive kind on the part of certain cells or cell-groups of varying potentiality, to changes in their environment. It suggests that in epithelial cancer, at any rate, this response takes place under the same conditions as those which are associated with the occurence of variation and selection among other organisms when exposed to environmental change and where evolution of new characters is taking place, especially in response to changes in the external environment. And the suggestion is therefore made that blastomatosis, including cancer and certain other forms of cell multiplication, takes place under the influence of the same evolutionary factors—namely, variation and selection of the "inter-" or "intra-" cellular kind.

The old inquiry still remains. It is the ascertainment of the kind of environmental influence on the one hand, and the special factor, hereditary or acquired, in cell potentiality on the other, which are independently or conjointly responsible for initiating the process whereby the new characters arise "innately" in, or are "acquired" by, cells engaged in neoplasmic growth.

Leicester.

DIFFUSED CANCER OF THE FEMALE MAMMARY AND THORACIC INTEGUMENT ("CANCER EN CUIRASSE").

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THE clinical experience of most surgeons is that primary carcinoma of the mammary integument is not of frequent occurrence, and that the most usual site of it when it does occur is the region of the nipple and its areola. Its occurrence in this latter situation is what might be expected, seeing the rôle irritation plays in the development of malignant disease, for the nipple and the skin around it is often the seat of cracks and fissures that are not always easy to heal and that are sometimes submitted to somewhat drastic measures of treatment. Should primary cancer of the nipple show itself it may be in the form of a squamous-celled epithelioma, or of a glandular carcinoma, originating in the epithelium (1) of the sebaceous glands or (2) of the galactophorous ducts. It is in connexion with cancerous changes in the duct epithelium that Paget's disease is a recognised factor. Commencing as an eczematous condition of the nipple and areola of a purely inflammatory nature, it in time brings about in the epithelium of the ducts alterations which spread to the deeper parts of the breast, with the result that we have the acini becoming distended with proliferating epithelium and true carcinoma mammæ is developed.

There is, however, another form of cancer of the mammary integument which is seen from time to time and is characterised by a dense unyielding leather-like state of the skin of the thorax. Although referred to by Howard of the Middlesex Hospital in 1792, attention to this class of case was specially drawn by Velpeau in 1838, who described it under the name of "ligneous cancer" in plates, or *diffused* over the mammary integument, and he termed it "cancer en cuirasse." He stated that he had often met with it, and he emphasised as its characteristic the brawny (*ligneuse*) change present in the skin. He regarded the cases as illustrative of the wide area that a carcinoma may involve by continuous spread from a central focus. Some cases have been published that have been regarded as primary examples of this condition, but they are very few in number and are by no means conclusive. As a rule, the affection is secondary, and either accompanies carcinoma of the mamma or makes its appearance after the removal of a breast for malignant disease. At the Glasgow Cancer Hospital I have met with four such cases, the first one, shown in Fig. 1, being admitted on March 25th, 1895. It was of a secondary nature and was of three months' duration, having shown itself nine months after the removal of the left breast for a cancerous growth. The illustration (Fig. 1)

FIG. 1.

Typical "cancer en cuirasse."

shows the extensive involvement of the mammary integument on the left side and its extension to the right breast, which was tense and tender and was entirely occupied by a firm round swelling, reddish all over the surface, with some œdema in the surrounding tissues. Part of the cancerous area on the left side of the thorax had ulcerated, and there was present that marked œdema of the upper extremity which is such a constant and important feature of this affection. There was also present some fluid in the left pleura. The progress of the case was rapid. The notes say that the

patient became more oppressed in breathing and more cyanosed, dying on May 6th, about six weeks after admission.

As already stated, Velpeau regarded these cases as ones of *cancer of the mammary integument*, and as illustrative of the wide area that a carcinoma may involve by continuous spread from a central focus, and this has been the generally accepted view of them ever since. Of late years this view has been called in question by Handley, who states on page 147 of his work on "Cancer of the Breast and its Operative Treatment" that the prevalent idea that "cancer en cuirasse" is due to the spread of the disease along the deep cutaneous plexus of lymphatics is a belief which appears to be quite erroneous, and on page 149 he gives his view of the condition as follows:—

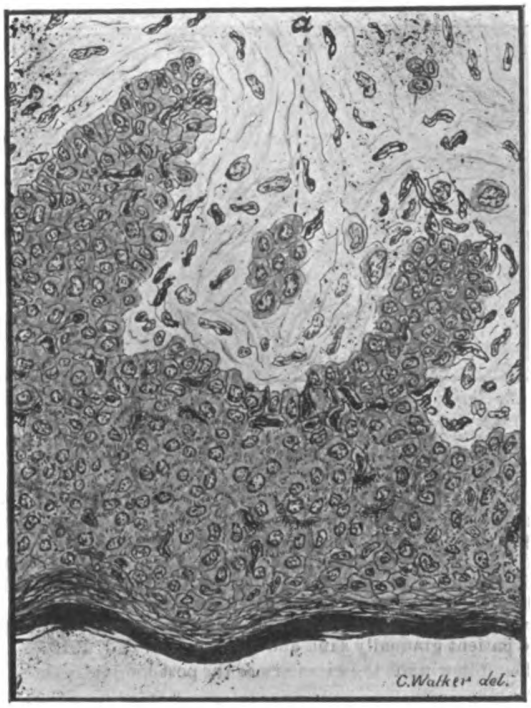
> The fact is that "cancer en cuirasse," so far as it concerns the skin, is in its earlier stages essentially a non-cancerous condition, identical with the pachydermia which is seen in elephantiasis arabum, and in some cases of long-standing eczema, dependent on the same cause, obstruction to the return of lymph from the skin. Later on it is usually complicated by nodular invasion of the skin. The swelling of the arm in breast cancer on the affected side with brawny thickening of the integuments, is a less marked example of a very similar condition. Here it has never been suggested that the skin of the arm is infiltrated by cancer.

In view of this divided opinion I think the following case is of interest and importance, as it throws some light on the exact nature of this condition termed "cancer en cuirasse."

The patient, a single woman, aged 63 years, was admitted to the Glasgow Cancer Hospital on Oct. 21st, 1910, suffering from inoperable carcinoma of the right mamma. The history she gave was that she was a shawl-twiner by occupation and had always enjoyed good health until her present illness, which began about three years previously with pain and uneasiness in the right breast. She had recently got much worse. She did not consult a medical man until July, 1910, when she was advised to obtain hospital advice and treatment. This she did, and was admitted to an infirmary. Her case was not considered suitable for operation and she underwent a course of X ray treatment without benefit. The hospital report states that on her admission on August 1st, 1910, there was a hard swelling in the right breast about the size of a cocoa-nut, moveable over the underlying tissues, but fixed in the breast substance. The skin over it was adherent and the nipple retracted, but no glandular masses were felt in the axilla. The lungs were normal. On August 4th applications of the X rays were begun and continued daily. On Sept. 4th it was noted that the skin had become affected and on the 18th that it was extensively involved, the breast tumour, however, being smaller. Later, swelling under the right arm showed itself, and the arm and hand became swollen. On Oct. 8th the patient went home.

The patient's condition when she came to the Glasgow Cancer Hospital was a very distressing one. The right arm was swollen and brawny except on the dorsum of the hand, where the swelling was puffy and softer. The right breast and the right axilla were the seat of superficial ulceration, and the right nipple was replaced by a sloughing mass. The skin of the front of the thorax on each side was dense, unyielding, and leathery, and both mammæ, especially the right one, were hard and firm and fixed to the chest wall. Perhaps, however, the most striking feature in the case was the red erythematous tint of the skin of the anterior thoracic wall, of the right shoulder as far up as the root of the neck, and of the front of the right arm down to the elbow. In some parts, as over the sternal and right clavicular region, this redness was replaced by a livid and almost ecchymosed condition of the skin. All over the erythematous region, and especially on the anterior aspect of the thorax, were numerous vesicles and bullæ containing fluid of a purplish colour. On the surface of the right mamma the bullæ had burst and the mammary integument was in places covered by a soft, yellowish sero-purulent discharge. Above the left mamma some nodules were to be felt extending in the direction of the left shoulder, but there was an absence of nodularity in the affected skin of the right side, and generally it was smooth in character. On the right side of the chest the disease was sharply defined in front by the costal margin, and on the left side it did not reach so low, being limited by a line drawn from the ensiform cartilage along the base of the left mamma to the anterior border of the axilla. The patient complained of a constricted feeling around the chest, and she had great difficulty in moving herself in bed. After admission the section of a bit of skin taken from the extending edge of the redness and examined in the research department of the hospital showed the cells of the deeper layers of the rete Malpighii burrowing amongst the subcutis almost as in the growing edge of an advancing epithelioma, while here and there several separated groups of cancer cells were seen scattered in the subcutis suggesting invasion of the lymphatics of the skin and the involvement of the cutis in the cancerous process. This state of matters is shown in Fig. 2.

FIG. 2.



Section of skin from extending edge of redness, showing, *a*, a separated group of cancer cells in the subcutis.

FIG. 3.

Shows the deeper layers of the subcutis with cells of a spheroidal type, and they exhibit a marked alveolar arrangement with abundant fibrous stroma and present the typical aspect of a scirrhus cancer.

The after-progress of the case was marked by considerable extension of the redness and induration of the skin both on the right and left sides of the chest, and subsequently it extended from the right shoulder to the scapular region as far down as the level of the tenth dorsal vertebra. Several large areas of ulceration formed on the chest walls in the erythematous part of the skin, and here and there were present brownish crusts, which revealed reddened and

FIG. 4.

Section of the skin through the margin of one of the bullæ, showing that while the surface layer of horny epithelium remained, being somewhat thickened, the rest of the integumentary elements were replaced by cancerous cells, among which was a certain amount of connective tissue.

oozing surfaces when removed. With the increasing density of the skin the feeling of constriction of the thorax increased and the patient could not move unassisted. Under the pain and discomfort the general health suffered and sleep could only be obtained by opiates. There was slight fever with a dry and tremulous tongue and quiet muttering delirium. The patient gradually sank and died on Dec. 2nd, 1910.

The following is the summary of the post-mortem report:—

The body was that of a well-built woman and was not emaciated. A large ulcerated area was present in both pectoral regions. The right breast was greatly involved and the ulcerating process extended to the edges of the ribs and the costal cartilages of the right side, to the right axilla, and to the scapular region behind. The right axilla showed also patches of ecchymosis. The ulceration did not involve the whole of the left pectoral region but only that portion nearest to the sternum.

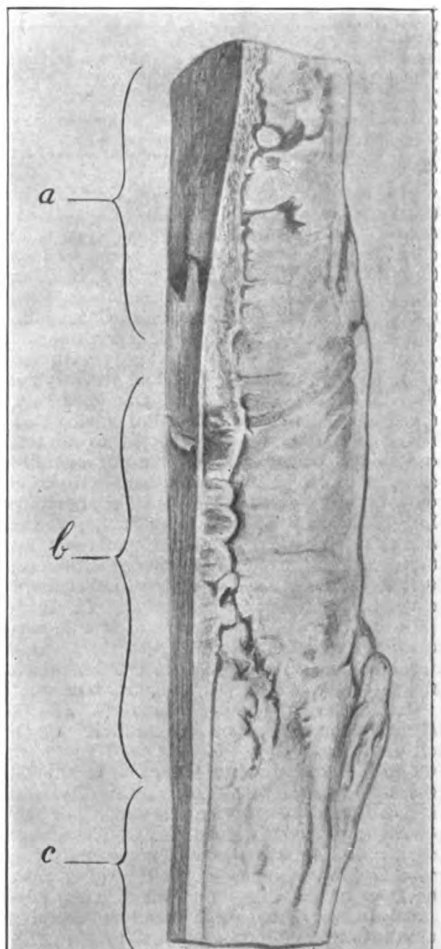
In the thorax the heart was found to be slightly hypertrophied, and there was thickening of the pericardium. Near the apex of that organ were several "soldier's" spots. The heart wall was slightly fatty, and several small atheromatous patches were present in the aorta. The right lung was very adherent to the costal pleura and the pulmonary pleura was distinctly thickened near the apical region. The left lung was only slightly adherent to the costal pleura. There was some hypostatic congestion of the lungs, but no carcinomatous nodules were present on the surface or in the substance of the lungs. There was no cancerous injection at the root of the lungs. Beneath the right breast the fatty tissue was pigmented and of a deep yellow tinge, and on the right side the skin, subcutaneous and muscular tissues were adherent to the ribs and sternum beneath. The right parietal pleura was studded with areas of cancerous infiltration, and the right lung, as already stated, was markedly adherent to the chest wall and was separated with difficulty. The right pectoral muscle was infiltrated with the growth and the interfascial septa were markedly developed and showed distinct cancerous infiltration.

In the abdomen the liver was congested and slightly enlarged and there was some fatty infiltration. No cancer nodules were to be seen anywhere on its surface or in its substance. The kidneys were congested and showed a condition of sub-acute nephritis. The suprarenals were smaller than usual, but were otherwise healthy. There was some congestion of the spleen, but it was otherwise quite normal and showed no carcinomatous nodules on its surface, or in its substance. The uterus was bicornuate and the ovaries atrophied.

From the point of the chest on the right side a long strip of skin and subcutaneous tissues was taken over the ulcerated area, but below, extending towards the abdomen into the normal skin (Fig. 5). This section, viewed from the side, shows at (*a*) the blackened necrotic and thinned skin and at (*c*) skin of normal appearance and thickness. At (*b*), between these two extremes there was an area of active cancerous growth in the cutis. A section of this area at the advancing margin of the skin lesion showed under the microscope a close permeation of the lymphatics of the cutis by single strands and small groups of cancer cells, and associated with this a well-marked thickening of the cutis. The epithelial covering of the skin in this area showed very distinct desquamation and the papillæ of the cutis were fibrosed and œdematous. There was, however, more than this skin lesion. In addition the subcutaneous tissue underlying the area displayed abundant strands of carcinoma spreading in the lymphatics and also permeating the fat. Similar examination of the dark ulcerated skin at (*a*) lying central to the advancing margin showed necrosis of the cutis and no nuclear staining of cancer cells or normal tissue cells.

With the foregoing clinical and pathological facts before us we are now in a position to consider the exact nature of this case, and if it comes under the category of "cancer en cuirasse" to express an opinion as to whether or not the condition arises from dissemination of the cancer cells through the lymphatic vessels of the cutis vera, or is simply, as Handley suggests, "a non-cancerous condition identical with the pachydermia which is seen in elephantiasis arabum, and in some cases of long-standing eczema, dependent on the same cause, obstruction to the return of lymph from the skin."

FIG. 5.



From its clinical manifestations I have no hesitation in placing the case in the category of those described by Velpeau under the group of "cancer en cuirasse." The only disturbing element entering into it, and that could be in any way appealed to as altering its ordinary course, is the treatment for about three weeks by the X rays. To this fact, however, I do not consider any special weight should be attached, as the condition of the thoracic wall on the patient's admission to the Glasgow Cancer Hospital was not that of an X ray dermatitis, and the subsequent microscopic examination of the skin supported that view. Going, then, on the assumption that the case was one of Velpeau's "cancer en cuirasse," it is necessary to study it a little in detail to clear up the exact pathological lesion present. From the patient's own account of her illness it is not very evident when the tumour in the right mamma showed itself. It may or may not have been present during the two or three years when she suffered from sensations in the breast of a vague and uneasy nature, yet not sufficient to necessitate

her seeking medical advice. The first distinct proof of the existence of the tumour is in August, 1910, when she was advised to enter hospital, for the infirmary report says that there was then found in the right breast a hard swelling of the size of a cocoanut. It is also clear from the report that at this time the skin of the thorax was not affected, as it is distinctly stated that it was Sept. 4th when it began to be involved. These facts show that the integumentary lesion was not a primary one but was associated with a pre-existing malignant tumour of the right breast. Nothing is said in the report as to any microscopic examination of the skin in September, 1910, but we know that within eight weeks of that time the section of a bit of skin taken from the extending edge of the thoracic redness revealed a cancerous condition of the integument (see Figs. 2 and 3), a state of matters not in accordance with Handley's view that cancer en cuirasse, "so far as it concerns the skin, is in its earlier stages essentially a non-cancerous condition." Were this so, the section from the extending edge of the redness should not have contained the "several separated groups of cancer cells seen scattered in the subcutis suggesting invasion of the lymphatics of the skin and the involvement of the cutis in the cancerous process." This suggested invasion of the lymphatics received full confirmation by the section of skin taken after death, which showed, as stated, "a close permeation of the lymphatics of the cutis by single strands and small groups of cancer cells, and associated with this a well-marked thickening of the cutis."

Before considering further these divergent opinions as to the exact nature of the condition present in cancerous pachydermia or so-called "cancer en cuirasse" it is necessary, in view of the part played by the lymphatic system in the dissemination of cancer, to draw attention to the distribution of (1) the cutaneous lymphatics of the thorax, and (2) of the lymphatics of the breast.

1. *The Cutaneous Lymphatics of the Thorax.*

The best grouping of these is that of Poirier and Cuneo, who divide them into three territories—viz., anterior, lateral, and posterior, an arrangement which permits of the clearer classification of the collecting trunks of the thoracic cutaneous network of lymphatics.

(*a*) *Anterior territory.*—This area extends from the median line to the neighbourhood of the anterior axillary line, *but it does not include the integuments which cover the centre portion of the mamma.* Its collecting trunks appear in the region of the middle line and run towards the axilla, some passing above and some below the breast. All of these anterior trunks terminate in the thoracic group of axillary glands and they represent the principal lymphatic channel of the anterior region of the thorax. This anterior territory, however, possesses *three accessory lymphatic channels* which must not be lost sight of, as they are of considerable importance. They are known as (1) the subclavian, (2) the contra-lateral, and (3) the internal mammary. The *subclavian* consists of some trunks which arise below the clavicle, run upwards and outwards over that bone, and end in the supra-clavicular glands. The *contra-lateral channel* owes its existence to the fact that there is a continuity between the networks of origin of the lymphatics on either side of the middle line of the chest. In addition to this there is a small percentage of cases where there is a decussation of the collecting trunks across the middle line. Lastly, the *internal mammary* channel represents two or three collecting trunks which perforate the anterior extremities of the intercostal spaces and, closely accompanying the perforating branches of the internal mammary artery, reach the retro-sternal glands. We have then in this anterior territory one principal homolateral axillary channel and three accessory ones.

(*b*) *Lateral territory.*—This area is drained by five or six collecting trunks which ascend vertically, perforate the axillary aponeurosis, and end, as do the anterior trunks, in the thoracic group of axillary glands.

(*c*) *Posterior territory.*—The drainage of this area is carried on by 10 or 12 collecting trunks, of which the lowest appear a little below the inferior border of the thorax. These, as well as the middle and upper ones, converge towards the axilla and terminate in the scapular group of axillary glands. Such is the general distribution of the cutaneous lymphatics of the thorax, but it is necessary to have a clear understanding as to their exact mode of arrangement in the skin, as upon this depends the mode of spread of cancer in that structure. The most recent view is that the lymphatics of the skin originate in the papillæ and form by intercommunication in the superficial layer of the dermis what is termed the *subpapillary plexus* (*a*). Underneath it, and lying some distance from it, upon or just over the deep fascia of the body, is the main parietal lymphatic plexus known as the *fascial plexus* (*c*), the two communicating with one another by vessels which start from the subpapillary plexus and dip down vertically to join directly the fascial plexus (*b*). (See Fig. 6.)

FIG. 6.

Diagram from Handley's Cancer of the Breast, p. 28, to show that subcutaneous nodules do not necessarily arise from the extension of growth along the skin.

This arrangement is not, however, universally accepted. According to others the connexion between the subpapillary and fascial plexuses is not quite so direct as given above. They hold that the vertical vessels do not run direct into the fascial plexus, but anastomose amongst themselves and form on the deep aspect of the skin an intermediate plexus which has been named by Arnold *the deep cutaneous plexus.* Of its existence Handley says he has never found any evidence in his work, and the consensus of opinion seems to be that in the skin we have only the subpapillary plexus, and that its communication with the deep fascial plexus is by the definite vertical tributaries.

2. *The Lymphatics of the Breast.*

There are two groups of these—viz., (*a*) those of the skin over the mamma, and (*b*) those of the mammary gland itself.

(*a*) *The mammary cutaneous lymphatics.*—These have a different arrangement at the periphery of the breast from that which exists in the region of the areola and nipple. Most of the former terminate in the collecting trunks of the homolateral axillary channel which collects the lymph from the anterior thoracic cutaneous territory and pours it into the thoracic groups of axillary glands, but a few of the lymphatics arising from the skin over the internal surface of the mamma may pass direct to the axillary glands of the opposite side. On the other hand, the central cutaneous lymphatics of the nipple and areola have quite a different course. They first form a superficial network with extremely fine meshes, arranged in several planes, from which numerous trunklets pass directly into the deeper plexus formed by larger trunks, known as the *subareolar plexus of Sappey*, and in which the majority of trunks coming from the mammary gland itself also terminate. We have thus in connexion with the mammary integument two sets of lymphatics quite distinct, although in close juxtaposition.

(*b*) *The lymphatics of the mammary gland.*—The majority of the lymphatics of the breast itself form a network about the lobules and milk-ducts and pass by means of collecting trunks into the subareolar plexus of Sappey, or, as Handley calls it, the subpapillary plexus. A few, however, of the intramammary lymphatics pass direct to the subclavian and supraclavicular glands, while others pass into the *deep fascial plexus* in the loose retromammary tissue. The mammary lymphatics that end in the subareolar plexus of Sappey pass to the axillary glands by means of two large trunks which leave the plexus one on its internal, the other on its external part. The internal trunk passes from the internal side of the gland around the lower border of the subareolar plexus, and runs along the lower border of the pectoralis major to the axilla. The external trunk leaves the external side of the gland and goes direct to the axilla. These two main trunks perforate the axillary aponeurosis and terminate in one or two of the glands placed on the inner wall of the axilla on the third digitation of the serratus magnus. In the case of the intramammary lymphatics that enter the deep fascial plexus, they also empty into the axillary glands, for this deep fascial plexus has certain catchment areas from which special trunk lymphatics spring, and those that receive the mammary lymphatics terminate in the axillary glands. In addition to this main lymphatic channel the mamma has three accessory channels known as (1) the axillary, (2) the subclavian, and (3) the internal

mammary. The first one is not very constant, but when present comes from the lower part of the gland and passes directly to the axilla. The subclavian is represented by a trunk which comes from the posterior surface of the breast, penetrates the pectoralis major, and passing between the two pectoral muscles ends in the subclavian glands. Lastly, the internal mammary comprises the lymphatics coming from the inner part of the mamma. They follow the perforating branches of the internal mammary artery and reach the retrosternal glands, just as do some of the cutaneous lymphatics.

Seeing that a mammary cancer must be regarded as co-extensive with the lymphatics that drain it, we have three groups of these vessels in connexion with the breast—viz., (1) the cutaneous, (2) the areolar, and (3) the glandular lymphatics, by any of which we may have both local and general dissemination taking place. As regards the general dissemination, it was, until recently, thought that it occurred chiefly by the blood stream, but Handley's work has made it more probable that this is not the case, and that the most frequent channel is the lymphatic system.

To understand how cancer spreads locally and generally in the body it is necessary to bear in mind the conditions that give rise to this characteristic of the disease. There are two ways in which a carcinomatous growth extends. The first one is by "*infiltration*," which is a local process and consists of a gradual pressure destruction of the healthy surrounding tissue. The other one is by the passage of cancer cells along the *lymph channels connected with the spot where the cancerous growth has commenced.* Having gained access to these channels, the cancer cells then pass to the lymphatic glands connected with these lymphatics, and in this way there is laid the beginnings of a mode of dissemination of the cancerous growth throughout the body, which gives to carcinoma its most fatal characteristic. The possibility of this spread of the disease is due to the fact that there is a continuity between the whole of the lymphatic system of the body, and thus there can take place the passage of cancer cells to distant parts of it. The plan on which this continuity is arranged has been specially studied by Handley, whose general idea of the lymphatic system is that it is a vast horizontal network of fine vessels lying on the deep fascia. Into it are poured by numerous fine vertical tributaries, first the lymph from the skin and its appendages, such as the mamma, and, secondly, on its deep aspect the lymph of the muscular and periosteal lymphatics. In this way the entire body is invested by a network of intercommunicating channels. It is not necessary to go here into further details about this general lymphatic investment and the six drainage areas into which Handley divides it. What should be remembered is that six sets of lymphatic trunks convey the lymph to the (1) cervical, (2) axillary, and (3) inguinal glands, each of these groups of glands draining different areas, and that the different areas, though distinct, are not isolated from one another, for between them are lines or zones in which it is true there are no trunk lymphatics, but there are present narrow and fine tortuous vessels in which the lymph stream is very slow and at its feeblest and through which only very fine particles can pass, and that are capable of being opened up, under certain conditions, so as to create channels of communication, just as happens in the establishment of the collateral circulation after ligature of a main artery.

To explain the passage of cancer cells between areas thus shut off to some extent from one another Handley calls in the assistance of the proliferating power of the spreading tumour cells, and considers that it is by "centrifugal lymphatic permeation" that they find their way into the fine lymphatic vessels between the areas and thus pass into adjoining areas without changing their conditions of life. I confess I have never thought this term "permeation" of cancer cells a happy one, as it does not correctly represent what takes place The word permeation implies diffusion through the tissues, just as odours permeate the air or a dye spreads itself through cloth. It suggests, in fact, passage through the pores and interstices of a substance without rupture or diplacement of parts. This is not what happens in the case of the extension of a cancerous tumour by the lymphatics. Underlying the whole process is mechanical pressure, and the term I have always used for the lymphatic spread of cancer has been "*pressure dissemination.*" The correctness of this view is apparent if we consider for a moment what happens in connexion with a cancerous growth. Cancer consists of an abnormal and unexplained growth of the cells of a part. The new cells which are formed by this irregular and inexplicable activity collect together and form a swelling or tumour as it is called. Such a local collection of cells would probably do no harm were it to be small in size and not undergo any increase, and sometimes this happens, so that a person may carry about with them for years a limited cancerous tumour and be none the worse for it. Such is not, however, the usual course of events. The cells multiply and room must be found for them, so those on the outskirts are compelled to find an outlet of escape. This they do largely by the lymph channels and it is done under pressure from the accumulating cells at the original centre of activity and at any new foci at a distance, for some of the cells forced into the lymph channels have the same proliferating power as the original ones that began the morbid process. When in the lymph channels they not only induce a small-celled infiltration which ultimately forms a new connective tissue and thus brings about a perilymphatic fibrosis, but the multiplying cells rupture the smaller lymph channels and in this way destroy the continuity of the lymph vascular system of the part affected. The spread, then, of a cancer is really a "pressure dissemination," and this is supported by the fact that relief may be obtained in another direction. Thus, the tension of the cells in the primary growth may cause ulceration in it and by this discharging surface the pent-up cells may find exit, lessening the spread along the lymph channels. In no other way can we explain certain clinical facts, such as the slowness of glandular implication in many cases of cancer of the body of the uterus. Here the disease soon sets up ulceration of the mucous membrane, and the cells finding an easy escape put no pressure on the lymph channels, so that the parametrium is not involved in these cases until a late date.

Keeping in view this principle of pressure dissemination as the determining factor in the lymphatic spread of cancer, I think it offers an explanation of what takes place in the condition of "cancer en cuirasse," and makes clear its exact pathology. What happens when a mammary carcinoma forms is this. As the activity of the disease goes on the proliferating cells have to find some means of escape. Pressed by the accumulating cells of the primary growth those at the periphery and elsewhere crowd into the lymph spaces and channels, making their way along the paths of least resistance. Various outlets are open to them, because, as already described, the lymphatics in this region are arranged in several groups—viz., the cutaneous, the subareolar plexus of Sappey, the circum-mammary, the retro-mammary, and the intra-mammary, this last being made up of the perialveolar and periductal lymphatics. All of these groups are in close touch with one another and they drain, as we saw, into the axillary glands, the supra-clavicular glands, the retro-sternal glands, the lymphatics of the opposite side, and the lymphatics of the anterior abdominal musculature. Whatever be the route first taken by the displaced cancer cells it sooner or later becomes blocked by them and also directly interrupted by their rupture of the lymph vessels. When this happens, should there be any great activity of the disease with rapid cell growth and no relief afforded by ulceration of the skin over the tumour, then other pathways are sought by the cells. So important an element in cases of mammary cancer is this question of the channels followed by the crowded-out cells that their clinical character is determined by it. Thus, if the retro-mammary lymphatics are open to the cancer cells and they follow that route, they come into touch with the deep fascial plexus which Handley has shown envelops the body, and we get widely disseminated disease which may show itself locally in the shape of multiple nodules (Fig. 7), each nodule probably marking the position of a vertical tributary between the subpapillary and deep fascial plexuses, or as distant deposits in the bones and viscera. In the same way in a case of long-standing carcinoma of the left mamma recently under my care, relief seemed given to the proliferated cancer cells mainly by the cutaneous lymphatics of the anterior abdominal musculature, nodules appearing in the skin of the abdomen as far down as the symphysis pubis, in the vulva in front, and at the anus behind, the inguinal glands being also enlarged, a condition of matters due, I consider, to the invasion under pressure of these adjacent areas by the

mammary cancer cells, all other outlets for them being closed or occupied.

In view, then, of the fact that the lymphatic spread of cancer depends on mechanical pressure exercised on the cancer cells, and that the direction in which they travel is determined by the patency or otherwise of the adjacent lymphatic passages, it is possible to offer an explanation as to what happened in this case of mammary integumentary carcinoma or cancer en cuirasse that I am recording. To begin with, everything points to the mammary tumour having existed for some time before the patient sought medical advice in July, 1910. During that time extension had probably taken place by the ordinary lymphatic channels, and it is not unfair to assume that at the time she was admitted to the infirmary the axillary, subclavian, internal mammary and retro-mammary outlets were blocked by accumulations of cells and perilymphatic fibrosis, and also interrupted by rupture of the lymphatic vessels. After admission to the hospital fresh activity in cell development evidently took place, possibly under the influence of the X rays as sometimes happens, and accommodation had to be found for these new cells. Choosing the path of less resistance they obtained it in the *subpapillary lymphatic plexus of the skin*, which was invaded by them, the tension caused by their presence setting up the red erythematous state of the skin, with its bullæ and subsequent ulceration that were such prominent features in the case when the patient entered the Glasgow Cancer Hospital. That cancer cells were present in the skin at that time the sections shown in Figs. 2 and 3 show conclusively, and as we know from the infirmary report that implication of the skin was only noticed about Sept. 4th, these sections represent a comparatively recent lesion.

Under these circumstances, I think the conclusion is allowable that we may have in cases of mammary carcinoma a cancerous invasion of the lymphatics of the skin exhibiting all the symptoms of Velpeau's "cancer en cuirasse," and that Handley's view that the ligneous hardness of the skin found in that condition is at first non-cancerous and identical with the pachydermia seen in elephantiasis arabum, and only becoming cancerous as a late event, is not tenable. Handley is no doubt right in saying that cancer infiltrates the tissues of the skin slowly and with difficulty in the vicinity of *ulcerated* primary growths, because ulceration relieves the pressure in these cases. When ulceration is not present the state of matters is different, and there comes into play forcible dissemination. Under it the cancer cells open up the lymph channels of the skin, just as the blood does the smaller arterioles in establishing the collateral circulation after ligature of a main arterial trunk, and if they happen to rupture the delicate walls of the lymphatics in the process the freed cancer cells spread very rapidly in the loose subcutaneous tissue of the skin, whether there be or be not a deep cutaneous lymphatic plexus. Taking everything into consideration, this case seems to support the older view as expressed by Erichsen and Watson Cheyne, that the condition known as "cancer en cuirasse," while occasionally arising from a fusion of numerous nodules connected with the deep fascial plexus, as might have happened with the case shown in Fig. 7, is generally the result of direct spread of the cancer cells to the lymph channels of the skin, thus emphasising the fact that in cases of mammary cancer the cutaneous lymphatics have to be reckoned with as a possible area of dissemination of the disease.

Glasgow.

FIG. 7.

A case of disseminated malignant disease showing itself locally in the shape of multiple nodules.

A CASE OF TOXÆMIA OF UNCERTAIN ORIGIN, AND ITS TREATMENT BY SEA-WATER INJECTION.

BY IVAN C. MACLEAN, M.D. LOND., &C.,
AND
L. DE C. HARSTON, F.R.C.S. EDIN., &C.

THE patient, a married woman, aged 60 years, was first seen in May, 1910, suffering from pain in the joints and muscles. She had a foul tongue, and constipation was present. Her temperature was 100° F.

Past history.—During the greater part of her life she had resided in India, but with the exception of a severe attack of dengue, there is nothing of importance to note. On her return to England some 20 years ago she seems to have entirely thrown off the effects of the fever, but suffered much from chronic dyspepsia and constipation and later on hæmorrhoids troubled her much, which were operated upon. She was strictly dieted and otherwise received appropriate treatment.

History of the present attack.—In May, 1910, she sought medical aid for pain in the joints and muscles, foul tongue, and constipation. Her temperature when first seen was

100°. The shoulders, elbows, carpal and upper vertebral and maxillary joints were chiefly affected and later the knees, and for the first four or five weeks the case looked much like one of infective arthritis. Among other things she was treated by electric light baths, but in spite of all treatment her condition rapidly became worse, emaciation increased, and there was low continuous fever; later blood and mucus were passed in the stools. She was highly tympanitic over the abdominal region. A systolic murmur at the apex which developed during the attack suggested the possibility of ulcerative endocarditis. The abdominal distension was often severe and the stools were always liquid: in fact, at this time the abdominal symptoms were far more prominent than the arthritic. Blood cultures were sterile, and the typhoid and tuberculo-opsonic reactions normal. The urine contained no albumin. Exploratory operation was suggested, but in view of the vague symptoms and absence of local physical signs it was not thought to be justified, nor was the patient in a fit state to stand an operation well.

The symptoms at this time pointed to some inflammatory infection and possibly ulceration of the bowel, chiefly in the region of the cæcum and ascending colon. There were some enlargement and tenderness of the liver. Several consultations were held, and Dr. H. P. Hawkins, Dr. H D. Rolleston, and Mr. Cyril Nitch all saw the patient. Bacillus coli autogenous vaccine was prepared and given in increasing doses every third day, having got up to 5 millions at a dose in three doses, with an increase of 2 to 3 millions each time. The result was disappointing.

Finding that in spite of all treatment the patient was losing ground rapidly, it was suggested through reading the description of "Injection of Sea-water," by Dr. R. Simons, to try the sea-water injection, and with the patient's consent the first injection was given on Sept. 9th, 1910. We began by giving 25 c.c. of sea-water (plasma marina) injected under strict aseptic precaution, in the right scapular region, but finding that it was followed by no discomfort it was subsequently increased from 25 to 50 c.c., and continued twice weekly for 30 injections. The temperature soon began to fall to normal, but at first after each injection it would fall and then rise again to 100° or thereabouts before the next injection was given. This continued for a time until it came down and remained at normal. She began to increase in weight. Sleep became natural, although up to that time it had to be induced by hypodermic injections of morphia. The improvement continued, the stools became formed and regular, appetite gradually improved, and she thoroughly enjoyed her meals, and a more liberal diet was given. The apical murmur disappeared, as did also the anæmic condition. At the end of six weeks she was for the first time able to leave her bed and sit up daily in a chair. Each week she gained on an average a little over ½ lb. in weight. Her weight before the injection was given was 5 st. 4 lb. (74 lb.). At the end of the 30 injections it was 6 st. 8 lb. (92 lb.). After each injection she described herself as feeling much stronger, and they seemed to act as a powerful tonic to her general system. Finally, six months after the beginning of the sea-water treatment, she was able to take out-door exercise and live her ordinary life

This is a case in which drugs and vaccine-therapy seem to have utterly failed. How sea-water acts is purely a matter of conjecture and is an interesting question, but Dr. Rolleston suggests that it would tend to increase the amount of sodium chloride and so keep a certain amount of fluid in the tissues, and therefore would counteract any factor, such as diarrhœa, which produces drying up of the tissues and inelasticity of the skin. It is the converse of the salt-free diet employed for œdema, especially of renal disease. Thus, some conditions—e.g., renal disease—are benefited by privation of sodium chloride, whilst others—marasmus—are benefited by an increased administration of sodium chloride.

In the above case it has acted beyond all hope or expectation, and may almost certainly be said to have saved the patient's life. In certain cases it is undoubtedly worthy of a more extended trial.

Sir Frederick Eve, F.R.C.S. Eng., and Dr. Galloway, F.R.C.P. Lond., have joined the medical board of the Royal Sea Bathing Hospital.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF ANGINA SINE DOLORE AND GASTRIC DEFLATION.

BY H. WALTER VERDON, F.R.C.S. ENG.

THE presence of "risus sardonicus" removes the case from the ordinary category of fainting attacks, and justifies the title of "angina sine dolore." For the reason that but few of these cases find their way into medical literature, the publication of this one will, I believe, prove of interest to readers of THE LANCET.

On the morning of Saturday, May 20th last, a man, aged 63 years, after taking a bath, was seized with a fainting attack and called his wife to his assistance. With her help he put on some light clothing and a dressing gown and went downstairs. While seated at table in the breakfast-room, he complained of feeling very ill, the fainting attack recurred and he fell into a state of semi-consciousness. When I entered the room a short time afterwards he seemed to be dying. The posture of the body indicated collapse. He had sunk into a heap in his chair. His head was resting on one of the arms, and his chin was depressed on his chest. His arms hung listlessly by his sides. His face, neck, and hands were cold, grey, bloodless, and wet with perspiration. No pulse was felt in the radial artery, and respiration had apparently ceased. But for the fact that the muscles of the face were contracted and the jaws clenched I would have come to the conclusion, as his wife had already done, that he was dead.

The sardonic grin distorting the man's features reminded me of a similar expression of countenance often witnessed in persons during the course of an anginal seizure, and in certain cases of this disorder having noticed instant relief follow from deflation of the stomach I proceeded to pass an œsophageal tube. A gap in the wall of teeth at the molar region of the jaws furnished a ready means of access to the throat and allowed me the opportunity of performing the operation without any delay. Upon the distal end of the tube engaging the lower end of the œsophagus, or entering the stomach, I do not know which, it liberated gas in considerable volume, and immediately afterwards the patient was observed to take a deep inspiration. The tube was permitted to remain *in situ* until pulse, respiration and consciousness were fully restored, and then irrigation of the stomach with hot water was practised.

The patient had recently shown signs of heart failure when ascending flights of stairs, when walking on hilly roads, and when engaged in other kinds of strenuous exercise. The pulse had been noticed to show signs of myocardial weakness and intermission even at times of repose. After the seizure the pulse grew firmer than it had been for several weeks past and its rhythm was more even and without intermissions. The patient walked upstairs without the signs of distress to which he is accustomed, and on the following Monday went to town, spent many hours in his office, and attended to his business affairs after his usual custom.

The seizure in this case illustrates the operation of a gastric reflex simulating heart failure and belongs to a category described by me in a paper which appeared in THE LANCET of June 18th, 1910, entitled "A Comparison made between the Simple Gastro-circulatory Seizure and the Angina Pectoris Attack." The pathological conditions underlying this form of seizure and also that of angina pectoris probably consist of increased irritability of the glosso-vagus-accessory group of medullary ganglia, following in the train of a long course of gastric disturbances, hypertension of gastro-mural muscle, and an augmented gastric atmosphere. The immediate cause of the seizure is inhibition of the heart through abnormal vagus stimulation.

The symptom referred to above—namely, the risus sardonicus—besides being occasionally seen during the angina pectoris attack, is of exceedingly frequent occurrence in young infants. It is characteristic of flatulent distension of

the stomach. It is excited by irritation of the glosso-vagus-accessory nuclei which are closely related in the medulla with the nucleus of the fifth cranial nerve, the branches of which innervate the muscles of the lower jaw.

The remarkable result obtained from the passage of the œsophageal tube should have the effect of bringing to the notice of the profession the importance of gastric symptoms in cases of this type, since many cases commonly regarded as illustrations of impairment of the contractile function of the myocardium, among which angina pectoris is usually numbered, are in reality subjects of a gastric reflex.

Streatham-hill, S.W.

A CASE OF MELANOTIC SARCOMA OF THE LIVER, SECONDARY TO A MELANOTIC SARCOMA OF THE EYE REMOVED BY OPERATION TEN YEARS PREVIOUSLY.

BY CHARLES H. LILLEY, M.B., CH.B. ST. AND.,
HOUSE SURGEON, ROYAL DEVON AND EXETER HOSPITAL.

THE patient, a female, aged 46 years, was admitted into the Royal Devon and Exeter Hospital on Nov. 10th, 1910. Since the beginning of May, 1910, she had noticed that, to use her own expression, she was "getting hard in the stomach." She placed little or no importance upon this condition until a month prior to admission, when she began to suffer severe pain in the back and down the legs, which at times were swollen. Later she noticed that she was getting much stouter, and that her clothes were very tight around the waist.

The previous history of the case had a most important bearing upon the diagnosis. In the year 1900 the patient had a tumour of the eye removed at the West of England Eye Infirmary, Exeter, by Mr. A. C. Roper, and on inquiry I found that this tumour was a melanotic sarcoma.

On admission the patient's general condition was remarkably good; she was well nourished and not at all cachectic in appearance. Her right eye had been enucleated, and the socket appeared to be quite healthy. An examination of the abdomen showed the presence of a very large and hard tumour filling the greater part of the abdominal cavity. Its upper limit was represented by a line drawn horizontally across the chest at the level of the fifth rib. Laterally the tumour filled both flanks. It was just possible to get the edge of one's hand between the tumour's lower limit and the pubic arch, and at the middle of the lower border a distinct notch could be felt. The surface of the tumour was nodular in places. The hæmopoietic and other systems were normal. The urine did not darken very much on standing, but on the addition of a few drops of ferric chloride it at once darkened, a black deposit forming. The patient went steadily downhill. The abdomen got progressively larger, increasing in circumference from 34½ to 40 inches. The application of the X rays had no effect in reducing the size of the growth. Later jaundice became a very marked feature and the patient passed into a drowsy, stuporous condition, and eventually died on Dec. 27th—i.e., six weeks after admission to hospital. The temperature throughout had shown an evening rise, being frequently over 101° F. and dropping to normal in the morning.

At the post-mortem examination the liver was found to be enormously enlarged and it weighed 19 lb. 6 oz. in fresh condition. It was very dark in colour. On cutting into the tissue it was found to vary in colour, being coal-black at some places and at others of a greyish-black colour. The growth was diffuse, and only one or two islands of normal liver tissue were to be seen. The difference in colour was doubtless due to the greater accumulation of pigment at some places than at others. The other organs were normal, the liver alone being involved. A microscopical section showed spindle cells with blackish-brown granules deposited in and around them.

I have thought this case of sufficient interest to warrant its being published as illustrating (1) the long period—viz., 10 years—which had intervened between the removal of the primary growth and the secondary invasion of the liver; and (2) the large size to which these secondary growths in the liver may attain.

I have to thank Mr. Roper, in whose ward the patient was, for permission to publish these brief notes.

Exeter.

NOTES ON A RARE CASE OF CONGENITAL HÆMATOMA.

BY SPENCER SHEILL, F.R.C.P. IREL., &C.,
EXAMINER IN MIDWIFERY AND GYNÆCOLOGY TO CONJOINT BOARD OF R.C.P. AND R.C.S. IRELAND.

THE subject was a male child, born early in February of this year, which, on examination immediately after birth, was found to have a soft tumour under one of its armpits. The labour was natural in every detail, although it is true the mother was unusually active in struggling during chloroform administration. The tumour was of about the size of a hen's egg and plainly cystic in character. It was situated in the mid-axillary line about an inch below the axilla. It appeared at first to be affected by respiration, but closer inspection revealed that this "hardening" of the mass was most likely due to the action of surrounding muscles. As well as could be made out, the ribs beneath the tumour were normal. It appeared to cause the little patient no inconvenience other than inability to adduct the humerus to the normal extent, although the child was unduly cross, but that is perhaps too common a complaint to be of value as a symptom. On waiting eight days, as the tumour seemed to be if anything slightly larger, I decided to tap it, and withdrew through a large needle nearly four fluid ounces of what appeared to be almost pure blood of a very dark hue. The tumour collapsed completely and the ribs beneath were palpated as normal. It again began to fill slowly and by ten days had attained its previous size. Two days later I noticed a "pulsating" lump at the side of the neck above the clavicle, but the "pulsation" proved to be a "fluid wave" communicated from the original tumour by arm movements and by respiration; one could easily imitate this by the fingers placed on the tumours above and below the clavicle. All this time there were no palpable glands in the neck or axilla. The mother had cardiac disease, as had also her father and two sisters, but I cannot see in this fact anything to throw light upon the origin of the tumour. Of course, I feared sarcoma and was obliged to give a guarded opinion to the parents. On March 4th, that is, about four weeks after the birth of the child, I noted in my case-book: "Tumour softer and smaller, and bulging above clavicle absent." On March 21st the tumour had entirely disappeared, but what feel like two slightly enlarged glands occupy its site.

I cannot look upon this case as comparable to a sterno-mastoid or other hæmatoma due to violence at birth, and my inability to find records of anything similar in a fairly full search through the literature has prompted me to publish these few notes.

Dublin.

Reviews and Notices of Books.

The Surgery of the Diseases of the Appendix Vermiformis and their Complications. By WILLIAM HENRY BATTLE, F.R.C.S. Eng., Surgeon and Joint Lecturer on Surgery to St. Thomas's Hospital; and EDRED M. CORNER, M.A., M.B., M.C. Cantab., F.R.C.S. Eng., Surgeon in Charge of Out-patients and the Surgical Isolation Wards to St. Thomas's Hospital; Lecturer on Practical Surgery. Second and enlarged edition. London: Constable and Co., Limited. 1910. Pp. 291. Price 10*s.* 6*d.* net.

SEVEN years have elapsed since the appearance of the first edition of this work; in those seven years much has been written about the diseases of the appendix, and the authors have endeavoured to incorporate in the volume the important points of the new material. The effect has been a very natural increase in the size of the volume.

The book commences with a brief history of our knowledge of the affection, and it is pointed out that as long ago as 1711 Heister recognised the relationship between disease of the appendix and diffuse peritonitis. The anatomy of the region of the appendix is carefully described, and the varieties of form and position of the organ are illustrated by diagrams. The authors give good reason for thinking that the appendix is not functionless, but that it is a specialised part of the

alimentary canal, as it has a special development of lymphoid tissue for protection against the influence of the bacteria in the cæcum. The etiology of appendicitis is discussed, and the interesting statement is made that, in the opinion of the authors, there is nothing in the way of exercise that is so potent a factor in producing an attack, when appendicitis is latent, as the riding of a motor-cycle. The suggested dependence of the disease on particles of steel in flour is ably argued. The incision which is advocated is that originally introduced by Mr. Battle, one of the authors, and it is probably for many cases the most satisfactory of all. The use of the clamp for crushing the root of the appendix is also advocated, and those who have employed it agree in its rapidity and value. The question as to the time of operation is discussed fully. An interesting section is that dealing with removal of the appendix in patients who have never had a recognisable attack of appendicitis, but who have had vague pains and have urgently demanded removal of the appendix. In all the cases described marked lesions were found. The tumours of the appendix are described, and subdiaphragmatic abscesses and empyemata resulting from appendicitis are also referred to. Two cases are mentioned in which empyemata followed attacks of appendicitis. Chapters on the peculiarities of the diseases at different periods of life and the diagnosis of tumours in the iliac region are provided; and, lastly, there is a chapter on the important subject of appendicitis in relation to life assurance.

This valuable treatise represents fully the present state of our knowledge of appendicitis, and it may with confidence be recommended to all who wish to study the subject.

Foods and their Adulteration. By HARVEY W. WILEY, M.D., Ph.D. Second edition, revised and enlarged. With 11 coloured plates and 87 other illustrations. London: J. and A. Churchill. 1911. Pp. 641. Price 21*s.* net.

Dr. Wiley's book covers a lot of ground in connexion with the question of foods in general and of their adulteration in particular, as might be expected from his official connexion for a great many years as chemist to the Government of the United States of America. He has been closely associated with far-reaching movements of reform in that country aimed at raising the standard of purity of foods, and in spite of the drastic character of some of the proposals for which he was in part responsible, they have appealed to the State and have been admitted as legislative measures. The opposition was, of course, severe, but it appears to have died down, and we have even heard that a good many of the erstwhile enemies to the proposals have subsequently adopted a friendly bearing to the new food laws and the standards of purity which they contain.

The present work is the second edition. Of the first edition a review appeared in our columns of Sept. 28th, 1907. For the most part the book remains in its original presentation, the work of revision and addition having been applied mostly to Part X., which deals with infants' and invalids' foods. This chapter, we find, has been extended to nearly 100 pages, and an inspection of their contents shows that a valuable addition to the subject matter has been made. A completely new addition consists in Part XI., which sets out some simple methods for detecting food adulterations. Dr. Wiley holds that many forms of adulteration may easily be determined by simple tests that anyone without the training of the professional chemist may practise, using the ordinary apparatus found in the household and reagents which are constantly at hand or which may readily be obtained at the drug store. We do not agree with this recommendation. It is true that the layman may educate himself to detect additions which are of a more or less coarse kind, but the practice of preserving foods—for example, with antiseptics—is not a clumsy proceeding nowadays, but requires a skilled person to lay it bare. We very much doubt if a layman could carry out with certainty the detection of benzoic acid in foods. Moreover, he is instructed to employ chloroform for the purpose, and a layman has no right to be in the possession of this drug. He is recommended to use chloroform also for extracting salicylic acid and saccharin from foods and liquids. The art of preserving foods is getting increasingly subtle and the highly trained chemist requires all his skill to be able to certify that a given article of food is free from objectionable preservatives. It does not suit the manufacturers' or purveyors' business to use a preservative that is easily detected, and the directions here given to the uninstructed in these matters are pretty certain to end in a failure to obtain positive results. The conclusion, therefore, of the household experiment might obviously give a false sense of security.

We attach a much greater value to the series of monographs on special invalid foods, which contain many sound common-sense observations as to their questionable advantages. In this section there is also given an extensive series of analyses of many familiar and widely advertised infants' and invalids' foods and medicinal foods, which presents many interesting points to the medical and analytical practitioner. The general information as to the distribution of various foods and their preparation for the consumer is, further, a valuable asset of the book.

A Manual of Pathology and Morbid Anatomy. By T. HENRY GREEN, M.D. Lond., F.R.C.P. Lond. Eleventh edition, revised and enlarged by W. CECIL BOSANQUET, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician to Charing Cross Hospital. With 350 illustrations. London: Baillière, Tindall, and Cox. 1911. Pp. 642. Price 15*s.* net.

IT is about six years since the tenth edition of this work, which was reviewed in THE LANCET of Nov. 4th, 1905, was issued. The book is now published as one of the "University Series," and is a distinct improvement on its predecessor. The paper is now white instead of a faint yellow, which brings out the illustrations much better. Some of the longer chapters have been subdivided, while the number of illustrations and pages is about the same. As to the text, it has been slightly rearranged, modified, and added to, more especially in the chapters dealing with parasitology, where these changes were necessitated by the recent discoveries of the relation of protozoa to disease and of the part played by spirochætæ in diseases of animals as well as of man. "Parasites" occupy about 120 pages. Some of the advances that have been made in pathological chemistry have been incorporated. We think that the introduction of the dates of certain great discoveries would help to interest the student. A few are introduced in certain chapters under "Parasites," but there is room for more—e.g., the date of the discovery of tubercle bacillus, of John Hunter's famous experiments mentioned in the text, of Reverdin's work on skin-grafting, of Hodgkin's and Raynaud's diseases, and many others. When discussing "fatty changes," perhaps it would have been well to add some of the more recent methods for the staining of fats—e.g., Sudan, Scharlach, Nile Blue, and the use of bichromates in this connexion. While osmic acid is referred to on p. 565, it should have been pointed out that all forms of fat are not stained black by this reagent. We did not find the word "enzymes" either in the text or index. It may, however, be in the former. *Per contra*, acromegaly is referred to in the text, but does not occur in the index. More details might have been given on pentosuria and the effects of adrenalin on the arterial wall. The illustrations in

the nervous system are largely taken from Mott's excellent researches. In Fig. 306, should not "Betts' cell" be Betz's? Two-thirds of the whole is devoted to general pathology and one-third to special tissues and organs. There are no references to original papers. The student of all grades will find that this work will meet his wants.

A Handbook of Intestinal Surgery. By LEONARD A. BIDWELL, F.R.C.S. Eng., Surgeon to the West London Hospital; Lecturer on Intestinal Surgery and Dean of the Post-Graduate College. Second edition. London: Baillière, Tindall, and Cox. 1910. Pp. 215. Price 6*s.* net.

THE importance of the surgery of the intestine can hardly be over-estimated, and we are pleased to see a second issue of this little work, because it contains a system of training in intestinal surgery which is eminently desirable for all who would undertake operative work on the abdomen.

The book arose from a practical class in intestinal surgery which was established at the West London Post-Graduate College. In that class practical instruction is given in the application of sutures to intestines, and for this purpose the small intestine of bullocks is employed, obtained from the slaughter-house on the day the animal is killed. The intestine of the bullock closely resembles human intestine, for its thickness is about the same, while in many of the lower animals, such as the dog, the intestinal wall is much thicker than it is in human beings, and therefore if the intestine of the dog be employed students may obtain a wrong idea of the care which is necessary in certain sutures. Mr. Bidwell has devised an ingenious little intestine holder which takes the place of an assistant. The book will therefore serve as a guide, not merely in the performance of intestinal anastomosis in the laboratory, but also equally well for instruction in the methods to be followed in the operating theatre. The descriptions are extremely clear, and the whole work is of an eminently practical character.

Gehirn und Rückenmark: Leitfaden für das Studium der Morphologie und des Faserverlaufs. Von Dr. EMIL VILLIGER, Privatdozent für Neurologie und Neuropathologie an der Universität Basel. With 224 illustrations, partly coloured. Leipzig: Wilhelm Engelmann. 1910. Pp. 278. Price M. 12.80.

THE physician who would combine the scientific with the clinical side of diseases of the nervous system cannot do better than make himself familiar with the contents of this excellent "Guide." Accuracy of diagnosis depends on a sound knowledge of the anatomy of the nervous system, for there is no other class of disease in which the symptoms are associated less with the nature of the pathological process than with its localisation. Lesions in the central nervous system separated from each other by merely 1 centimetre, or even less, may in certain instances give rise to widely differing clinical pictures. Hence the fundamental importance of nervous anatomy. Dr. Villiger is to be congratulated on the manner in which he has accomplished the task of providing a "key" to the study of the anatomical complexities of the nervous system. While the descriptions in the text are for the most part so lucid and methodical as to reduce possible confusion to a minimum, he has relied on a splendid series of diagrams, of which some are partly coloured. By giving so large a number of them the author has been able to simplify them, and their clearness leaves nothing to be desired. The intricacies of the basal ganglia, brain stem, pons, and medulla are treated in a masterly fashion. The elaborate connexions of the cerebellum are made plain in a series of particularly good diagrams. In a word, this well-printed and well-got-up volume combines the advantages of an atlas with those of a systematic treatise on the subject, yet it is neither too long nor too intricate for the author's purpose, as stated in the preface, and we do not know any equally concise volume in which the matter is so adequately handled. We consider the book, with its schematic and microscopical illustrations, an excellent study of nervous anatomy, and one that may be consulted with great profit by the neurologist.

Das Asthma, sein Wesen und seine Behandlung. (*Asthma, its Nature and Treatment.*) By Dr. BRÜGELMANN, Baden-Baden. Fifth edition. Wiesbaden: J. F. Bergmann. 1910. Pp. 268. Price 5*s.*

Dr. Brügelmann bases the results which he records in this volume on the experience gained by investigations during 32 years into the nature and treatment of asthma. In discussing the etiology and pathology of the disease he maintains that it is invariably brought about by an irritation of the central nervous system, especially of the centre of respiration. He states that he uses the term "central nervous system" advisedly, since the site and exact physiology of the centre of respiration have not yet been accurately determined. He further considers that the classification usually adopted—viz, into spasmodic and bronchial asthma—should be abandoned, since the paroxysms in both conditions are due to the same cause—namely, the central irritation. This irritation, he says, may arise from several causes, and he arranges them into three groups, classifying the cases of asthma according to the nature of the irritation:—1. Traumatic asthma. Here the irritation may arise from injury of the brain by blows, falls, shock, or the influence of cold; also emotional conditions are included under this heading. 2. Reflex asthma. In this group the irritation is produced in a reflex manner, the primary lesion being "asthmatic points" having their rise in the mucous membranes of various regions; also nervous conditions (e.g., neurasthenia) may have a similar action. 3. Toxic asthma. Various toxic conditions of the blood may supply the necessary irritant. The various forms of treatment are discussed at length, and numerous suggestions are made as to the divers methods that may be adopted in the different varieties of the disease.

Those practitioners who are especially interested in the nature and treatment of asthma will find this book interesting. The whole subject is considered in a manner different to that found in other text-books, the arguments used are worthy of consideration, and the portions devoted to treatment give valuable information.

JOURNALS AND MAGAZINES.

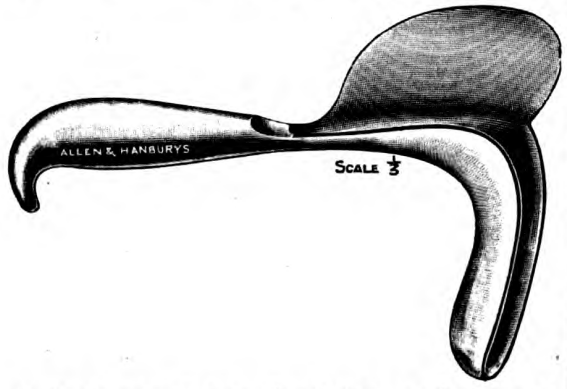
Quarterly Journal of Experimental Physiology. Vol. IV., No. 1, March 3rd, 1911; and Vol. IV., No. 2, June 10th, 1911. Price 6*s.* each part. London: Charles Griffin and Co., Limited.—Dr. J. Argyll Campbell, in his paper on the Effects of Certain Animal Extracts on the Blood-vessels, finds that using suprarenal extract in the form of hemisine by the perfusion method causes marked constriction of the vessels of all the organs with the exception of those of the heart and lungs. Pituitary extract seems to contain two substances, one causing constriction and the other relaxation. Dr. T. Graham Brown continues his studies in the reflexes of the guinea-pig, the present papers being Nos. 6 and 7 of the series. A cognate subject is this author's joint notes with Professor C. S. Sherrington on the pilomotor system Those who are interested in the psychology of the emotions will read with particular interest these "Notes," which are very suggestive in regard to "expression." The paper on narcosis and that on the pilomotor system are illustrated by photographs of the animals used. Dr. George Oliver's paper on two new methods of reading the arterial blood pressure in man will be of interest to medical men. Dr. Sutherland Simpson and Miss J. L. King find that in the sheep the motor area is located in the superior frontal

convolution, and as a corollary may be taken Miss King's contribution on the descending spinal paths in the same animal. The pyramidal tract is comparatively small and cannot be followed beyond the first cervical segment. Mr. W. A. Jolly's observations on the time relations of the knee-jerk and simple reflexes were made on the rabbit, by means of the string galvanometer. Mr. H. E. Roaf's paper is a short one. He finds that in a strip of tissue near the rectal gland in Purpura lapillus there is a pressor substance allied to adrenin. Dr. R. Burton-Opitz of Columbia University contributes three papers (Parts II., III., and IV.) on the vascularity of the liver. For the results we must refer the reader to the original papers. Dr. J. Ritchie and Mr. Ninian Bruce find that in diphtheritic toxæmia in guinea-pigs there is a complete or relative absence of adrenalin and that death appears to result from a condition which might be compared to acute Addison's disease. Dr. P. T. Herring continues his observations on the histology and functions of the pituitary body. In elasmobranchs the secretion is poured directly into the blood-vessels.

New Inventions.

AN IMPROVED VAGINAL SPECULUM.

THE accompanying illustration shows an improved form of Sims's vaginal speculum, which I have found useful. I have added a flange-like projection to the upper blade, which is of considerable assistance when examining patients in the left lateral position. The flange lifts up the right buttock



when the speculum is inserted so that one can dispense with the help of a nurse or assistant and a much better view of the cervix is obtained than is possible with the ordinary form of duckbill instrument at present in use. The speculum has been made for me at my suggestion by Messrs. Allen and Hanburys, Wigmore-street, W.

C. HUBERT ROBERTS,
M.D. Lond., F.R.C.S. Eng., F.R.C.P. Lond.
Welbeck street, W.

ASYLUM REPORTS.

Surrey County Lunatic Asylum at Brookwood (Annual Report for the Year 1910).—The total number of cases treated at this asylum during the year was 1315, the average number resident being 1063. There were admitted 283 cases, of whom 141 were males and 142 were females. 133 cases were discharged, 75 being discharged as recovered, giving a recovery-rate calculated on the admissions, but excluding transfers from other asylums, of 43·69 per cent for the males and 24 per cent. for the females, the total average being 32·89 per cent. There were 72 deaths during the year, a percentage on the daily average number resident of 6·77. The cause of death was verified by post-mortem examination in 93 per cent. of the deaths.

County and City of Worcester Lunatic Asylum at Powick (Annual Report for the Year 1910).—At this asylum the average number resident was 957. The admissions numbered 189, there being 80 males and 109 females. A percentage of 13·2 of the direct admissions had had a previous attack. A history of insane heredity appears to have been obtained in only 3·7 per cent. Sixty-seven persons were discharged during the year. Of this number 15 males and 24 females were discharged recovered, being a rate of 25·8 on direct admissions. Sixty-three persons died, and post-mortem examinations were made in 52 cases. The chief causes of death were: phthisis, 20·6 per cent.; heart disease, 12·7 per cent.; Bright's disease, 11·1 per cent.; and old age, 24 per cent.

Derby Borough Asylum (Annual Report for the Year 1910).—The daily average number resident at this asylum was 357. The number of patients admitted was 84. The general health of the patients admitted was found to be very unsatisfactory, and the medical superintendent, Dr. S. Rutherford Macphail, remarks that in many cases the mental condition was complicated with bodily disease of a serious nature, no less than 69 per cent. being found to suffer from recognisable physical disease. One-fourth of the patients admitted had organic heart disease. Inquiry revealed the occurrence of actual insanity among near relations in 40 per cent., while in several others mental and physical defects indicating degeneration were observed. Thirty-six patients were discharged, 30 as recovered. The recovery rate was 45·45 per cent. of the admissions, excluding transfers, and 6·90 per cent. of the total number under treatment. The number of deaths was 23, being a percentage of 6·44 on the daily average number resident. The average age at death was 54 years. The death-rate is the lowest in the history of the asylum. Post-mortem examinations were made in every case. General paralysis was found to be the cause of death in 23·8 per cent., phthisis in 7 per cent., and senile decay in 9·5 per cent.

Bucks County Asylum at Stone (Annual Report for the Year 1910).—The average daily number on the register at this asylum was 665. There were admitted 210 patients, 91 being males and 119 females. Of those admitted, and excluding congenital cases, 110 were first-attack cases, while 36 had suffered from one or more previous attacks. An insane heredity was ascertained in 47 cases, or 28 per cent. Altogether 94 patients were discharged, of whom 66 had recovered, giving a recovery rate of 43·7 per cent. for males and 36·9 per cent. for females calculated on the direct admissions. The death-rate was 9·3 per cent. of the average number resident, as compared with 12·2 of last year. The death-rate from tubercle was low, being 6·4 per cent. of all causes. A female patient died at the age of 74, after 57½ years' residence.

Monmouthshire Asylum at Abergavenny (Annual Report for the Year 1910).—At this asylum the average number resident was 951. There were admitted 174 patients, of whom 100 were males and 74 were females. Seventy-seven patients were discharged, and of these 54 were discharged as recovered. The recovery rate for the year, calculated on the total number of admissions, was 31 per cent., or 22 per cent. for males and 43·2 per cent. for females. This rate is 5 per cent. lower than the average rate obtained since the opening of the asylum and is accounted for by the very low rate among the male patients which arises from the unfavourable character of these cases on admission. The deaths numbered 75, and the rate, calculated on the average number resident, was 7·8 per cent. Post-mortem examinations were made in 77 per cent. of those who died.

City of London Asylum at Stone, near Dartford (Annual Report for the Year 1910).—The average daily number resident at this asylum was 589. There were 164 admissions. Discharges were 94, of which 31 were recoveries, being a proportion per cent. of 24·2 on the direct admissions. Deaths numbered 43, and 29 necropsies were made. The percentage of deaths was 7·30 on the daily average number resident. The medical superintendent, Dr. R. H. Steen, reports that the death-rate from consumption on the average number resident was only 3·4 per 1000, and he inclines to attribute this to the situation of the asylum upon a chalk hill and to the open-air life led by the patients. Verandahs are in use throughout the whole year for cases of mental disorder requiring treatment by means of rest in bed. Patients appear to become much attached to sleeping in the verandahs, and when, owing to severe weather, their removal indoors was contemplated, a storm of opposition arose.

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-NINTH ANNUAL MEETING IN BIRMINGHAM.

THE annual dinner of the Association was held on the evening of July 27th, in the spacious hall of the Grand Hotel, with the new President in the chair. There were nearly 250 members and guests present, and the banquet was in every way a great success. The company included the Bishop of Birmingham, Lord Ilkeston, the Lord Mayor of Birmingham (Alderman W. H. Bowater), Sir Oliver Lodge, Mr. Neville Chamberlain, Sir John Holder, Mr. L. S. Amery, M.P., Mr. J. T. Middlemore, M.P., Sir James Barr, Sir Francis Lovell, Sir James Sawyer, Professor Strassmann of Berlin, Professor R. A. Reeve, Professor Stoeltzner, Professor Vogt, Dr. Byrom Bramwell, the principal office holders in the Association, and seven or eight lady members, including Dr. Mary Scharlieb and Dr. May Thorne. After the loyal toasts had been honoured the Bishop of Birmingham proposed the toast of "The British Medical Association," and spoke of the sympathy between the clergy and the medical profession. Both callings were much criticised, and both were often accused of considering class interests when they were really upholding the best interests of the nation and of humanity. Dr. Ewen J. Maclean, the chairman of representative meetings, in responding to the toast, spoke of the Association's work in connexion with the National Insurance Bill. For the first time in its history the profession had come in contact with the political machinery of the country. The Association, by keeping to the front line of its policy, had secured much already. If it adhered to its demands it would enable the medical profession to do its duty both as doctors and as citizens. Mr. Amery, the Member for South Birmingham, in proposing the toast of that city, spoke of Mr. Chamberlain's services to medicine. With reference to the Insurance Bill, he agreed with those medical men who doubted whether "doctoring in abundance and doctoring on the cheap" was the best way of attacking the problem of the public health. He said that all medical men wished to support a scheme which would not lower professional standards. The Lord Mayor responded in a humorous speech which delighted the company. Professor Gilbert Barling gave a graceful welcome to the guests of the evening. Of Lord Ilkeston, he said that the profession looked to him for help when the Bill reached the House of Lords, and hoped that he would so guide that assembly in the matter that wisdom and justice would prevail. Professor Strassmann and Mr. Middlemore responded on behalf of the visitors, and thanked the Association for its hospitality and congratulated it on the scientific and social success of the seventy-ninth annual meeting. The health of the President was warmly proposed by Mr. Neville Chamberlain, and after Professor Robert Saundby had replied, a very pleasant gathering broke up.

The summer general meeting and luncheon of the Irish Medical Schools and Graduates' Association was held on July 26th, at the Imperial Hotel, Birmingham. In the unavoidable absence of Sir Charles Cameron, C.B., Dr. Macnaughton Jones took the chair. The luncheon was a very successful one, and there was a large attendance, including ladies.

On Thursday, July 27th, a special Honorary Degree Congregation in connexion with the visit of the British Medical Association was held at the University at Bournbrook in the afternoon, when the honorary degree of Doctor of Laws was conferred upon Mr. John Burns and upon eight distinguished medical men. The Principal of the University, Sir Oliver Lodge, in presenting the recipients of these degrees to the Vice-Chancellor, made in each case a brief speech of welcome and introduction. Besides the President of the Local Government Board, the degree was conferred upon Dr. Byrom Bramwell of Edinburgh; Professor R. H. Chittenden of Yale; Sir Francis Lovell, President of the Section of Tropical Medicine; Dr. J. A. Macdonald, Chairman of Council of the Association; Dr. H. Oppenheim and Dr. Paul Strassmann of Berlin; Professor R. A. Reeve of Toronto; and Professor Sims Woodhead of Cambridge. After the Congregation many of the visitors stayed to inspect the handsome new buildings of the University of Birmingham.

In connexion with the annual meeting, the National Temperance League held its forty-third annual breakfast conference at the Grand Hotel on Thursday morning, July 27th, under the presidency of Professor Robert Saundby. The company numbered nearly 200, and several interesting speeches were made.

On Saturday, after the formal and scientific proceedings in Birmingham were over, the President and a number of members paid a visit to Warwick and Leamington, at the invitation of the mayor and corporation of Leamington and the local division of the Association. Warwick Castle was visited, and the guests were entertained to luncheon at the Leamington Town Hall under the chairmanship of the mayor, Dr. Harold Mason. On the same day a large party journeyed to Droitwich to inspect the brine baths. The party were first conducted to the brine bathing establishments, where the mayor received them. Here the several forms of treatment were explained by the resident medical officers and the manager, and many of the party used the swimming baths. Subsequently 150 guests were entertained to luncheon in the Salter's Hall by Lord Cobham and Mr. Willis-Bund. Other very pleasant excursions were made during the week to Lichfield, to Lady Warwick's Horticultural College for Women at Studley Castle, to Coventry, to Stratford-on-Avon, to Hereford, and to Malvern and Worcester. The arrangements were good, and many members and ladies took the opportunity to visit these interesting places in the fine weather which prevailed throughout the whole meeting.

As on previous occasions, we wish to record our thanks to the executive officers of the British Medical Association, and to the Editor and staff of the *British Medical Journal*, for many acts of courtesy and consideration shown to us during the course of the annual meeting.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 26TH.

President: Dr. A. H. CARTER (Birmingham).

The PRESIDENT wished to associate the officers of the Section with the general welcome offered to members and guests on their visit to Birmingham. He also expressed his indebtedness to those who were taking part in discussions or reading papers before the Section. He thought the annual meeting of the Association was not an ideal place for the presentation of new and original work owing to the short time available for each paper and the many distractions offered, but it afforded an excellent opportunity for discussions on clinical problems of every-day experience, and it gave practitioners an opportunity to bring themselves abreast of the times in matters of practical interest.

A discussion on the subject of

Asthma: its Varieties and Treatment,

was opened by Dr. GEORGE ALEXANDER GIBSON (Edinburgh)

who began by stating that the subject was one of special interest since the condition of asthma was dramatic in its symptomatology, elusive in its pathology, and uncertain in its therapeutics. He first outlined the anatomical relations and the physiological mechanisms of the respiratory system. He pointed out the importance of the upper air-passages as a means of warming and purifying the air breathed, constituting a defensive mechanism against noxious agencies. The particular importance of the large amount of erectile tissue in the nasal fossæ in regard to the pathology of asthma was then referred to, and the striking part it played in certain types of the disease was mentioned. The next important facts brought forward were that the larger respiratory tubes were practically rigid and for the most part devoid of muscular tissue, whilst the smallest tubes contained muscular tissue, which appeared to be without tonus under ordinary conditions. He pointed out that cilia were to be found in the respiratory passages, except in the last ramifications of the bronchi. In discussing the nervous mechanism of respiration, he referred to the fact that practically every afferent nerve possessed the power of modifying respiration and that the efferent fibres were contained in the fifth, seventh, ninth, tenth, eleventh, and twelfth cranial nerves and in the spinal roots. The important work of Dixon and Brodie had demonstrated that the muscle in the finest bronchial tubes was under the influence of fibres in the vagus nerves which conveyed both constrictor and dilator influences. He mentioned the interesting observations of Dr. Watson Williams, which suggested that there occurred a rhythmical contraction and dilatation of the finer bronchial tubes, the contraction occurring with expiration, the dilatation with inspiration. He then reviewed the theories which had been put forward to explain the asthma paroxysm, beginning with the view originally put forward by Cullen, and adopted and expanded by Laennec, that it was due to spasm of the finer bronchial tubes. Other theories attributed the paroxysm to weakness of these muscular fibres, to spasm of the diaphragm, and to a vasomotor neurosis as suggested by Traube and Weber. Sir Andrew Clark had adopted the view of a vasomotor neurosis, and believed that in addition there occurred a condition in the mucous membrane of the bronchi analogous to urticaria of the skin. Curschmann had put forward the view that there was a condition of bronchiolitis exudativa. Dr. Gibson believed that recent work proved that the old view of Cullen was the correct one. He wished clearly to differentiate between true asthma and some forms of secondary dyspnœa which counterfeited it, and in this connexion he read a letter which he had received from Sir T. Clifford Allbutt protesting against the current confusion of nomenclature caused by such expressions as cardiac asthma. Dr. Gibson associated himself with this protest and maintained that there was but one asthma. In his view all true asthma was neurotic in origin and must be distinguished from dyspnœa due to toxic causes or to the cyanosis of cardiac disease. In true asthma there might be additional factors, but the principal point remained that it was a neurotic affection. Dr. Gibson had been struck with the periodicity in the incidence of attacks of asthma, and he believed that there was a rhythm which dominated the attacks. He suggested that some *materies morbi* might be stored up and give rise to the attacks explosively. He referred to the direct effects of grief, anger, and other emotions in precipitating the attacks, and also mentioned a case of Heberden's in which asthmatic paroxysms occurred in association with an exostosis pressing on the vagus nerve, and another case in which the same condition resulted from a neuroma of that nerve. The effect of various agents, such as fog, the pollen of grass, the scent of a cat, upon the mucous membrane of the air passages in bringing about the paroxysm reflexly was then discussed. The fact that irritation of the digestive tract, the urinary organs, pelvic viscera, and skin might act in a similar manner was brought out. Dr. Gibson then enumerated the effects of asthma—viz., the over-distension of the lungs, emphysema of the compensatory type, and later of the large-lunged variety, the sclerosis of the pulmonary vessels, and distension of the right side of the heart. He pointed out that all these results had been reproduced in experiments. He believed that the explanation of the distension of the lung was that expiration was incomplete, being interrupted by another inspiration. In regard to treatment, he counselled careful watching of the digestive system, securing thorough excretion, and maintaining the circulation in a condition of adequacy. Catarrh of the respiratory tract was to be prevented. Climatic treatment was difficult. In matters of diet food which was easily assimilated should be given, and distension of the stomach was to be avoided. In regard to drugs, it was known that muscarine would cause asthma, while atropine would stop it. Chloroform, ether, and atropine were stock empirical remedies for which experiment had established a real basis. Morphine stopped the paroxysms at once, but Dr. Gibson, while he admitted using it occasionally, confessed that he did so not without fear. Lobelia was useful, but its effects were short in duration. Nitrites served to relieve spasm. Cocaine was used, but he pointed out the dangers attending its use, and he believed that it should be employed with the greatest reservation. He believed that suggestion might be helpful in neurotic patients.

Dr. R. SAUNDBY (Birmingham), the President of the Association, accepted the view that asthma was a neurosis, but thought Dr. Gibson had narrowed this conception unduly. Dr. Saundby believed that there was reflex spasm, mainly of the respiratory muscles, with spasm of the smaller bronchioles and turgescence of the mucous lining. He referred to recent observations upon anaphylaxis in asthma, showing that asthmatic patients were particularly liable to fatal anaphylaxis after ordinary doses of diphtheria antitoxin. He thought this suggested an analogy of the bronchial changes with the urticaria which also occurred after diphtheria antitoxin. He mentioned the class of cases cured by such measures as removing polypi from the nose, but stated that in many asthmatics the causative agent was unknown. He quoted cases where locality played an important part and referred to some caused by emanations from animals and from furs. In connexion with diet he advised small meals and easily digested food. A purin-free diet was well worth trying for a time. He believed that the periodicity described by Dr. Gibson accounted for some drugs obtaining a fictitious reputation. Asthma was often a family disease, but might be acquired, sometimes after influenza. In regard to treatment he described the use of iodides. He had found the fluid extract of grindelia of more value than lobelia. He had no confidence in the nitrites, and referred to the use of adrenalin. Asthma powders were sometimes useful, and sprays, though only palliatives, gave encouragement to the patients.

Dr. SAMUEL WEST (London), while accepting the results of physiological experiments, thought there was much which prevented our accepting any theory as entirely adequate. He thought there was a more widely spread condition in asthma than mere spasm of the bronchial tubes. He pointed out that there was a real analogy with epilepsy, and he suggested that asthma was a central rather than a peripheral neurosis. He urged that age was a very important consideration, and stated that so-called asthma beginning in later life raised a strong presumption that it was really one of the forms of secondary dyspnœa and not true asthma. In regard to diagnosis, he pointed out that in children paroxysmal attacks closely resembling asthma occurred as a result of irritation from enlarged bronchial or mediastinal glands, and in adults the condition of plastic bronchitis gave rise to periodical paroxysmal attacks, which were readily cured by iodide of potassium.

Dr. WILLIAM HUNTER (London) employed potassium iodide chiefly in the treatment of the disease. He referred to the use of nitrite of amyl. He thought the spasm was the essential feature in the paroxysm and was of more importance than the congestion.

Dr. T. STACEY WILSON (Birmingham) thought there were risks in the use of nitrites in conditions of bronchial spasm. He suggested that this spasm in capillary bronchitis and in asthma might exert a protective function.

Dr. WILLIAM EWART (London) thought the causation of asthma was always peripheral, and that the first and main factor was contained within the sphere of the vagus. The causation was so varied that there could be nothing specific about the spasm, and he therefore could understand the success of treatment along divergent lines. He discussed the value of powders, and believed that the carbon dioxide in the smoke was a factor in their usefulness, since this substance promoted expiration.

Dr. O. F. F. GRÜNBAUM (London) referred to the use of

vaccines in the treatment of asthma. He had seen cases benefited by this means, but the presumption was that vaccines would only be of use in cases with chronic bronchitis.

The PRESIDENT of the Section, while agreeing that the term asthma should be used in a strict nosological sense, thought Dr. Gibson had been a little severe on those who used it in a symptomatic sense. He urged that in regarding asthma as a neurosis they should be quite clear what they mean by a neurosis. He defined it as a condition of nervous instability. He counselled the adoption of measures to improve the stability of the nervous centres. He believed that a meat diet increased nervous irritability.

Dr. GIBSON replied.

A paper was read by Dr. J. DOUGLAS STANLEY (Birmingham) on

Lung Syphilis.

He pointed out that although pathologists recognised syphilis of the air passages, clinicians showed reluctance to diagnose it. Strümpell had said that no definite clinical description of pulmonary syphilis could be made. There was reason to believe that syphilis and tubercle might coexist, and there appeared to be a predisposition on the part of the syphilitic patient to contract tubercle. This was doubtless to blame for errors in diagnosis. In his paper he confined himself to acquired syphilis. In a series of 1000 cases notified as phthisis he had found two certain cases of syphilis and one doubtful one. In the last seven years he had collected 15 cases, some of which were still under observation. The lesions of syphilis might affect the lungs and pleura only, or the trachea and bronchi, or all of these. Lesions due to secondary syphilis were not of much clinical importance, but ought not to go unrecognised. He described a case in which laryngitis and pleurisy occurred in the secondary stage. In the tertiary stage the trachea was particularly liable to undergo ulceration, and this ulceration might go on to perforation or produce very marked stenosis. The main bronchi might be affected and similar effects might be produced, but the most marked clinical effect was the liability to bronchiectasis. As regards the lung tissue various effects were described, the early changes being an intense cell proliferation filling the alveoli and infiltrating the surrounding structures. The vessels showed the typical changes of syphilis. The process was fairly rapid and was in effect an acute interstitial pneumonia. The next variety described by Dr. Stanley was an early diffuse sclerosis. The lung in these cases was tough and showed great increase of connective tissue. Miliary gummata were plentiful. There was marked proliferation of the elastic tissue. This process was a result of the previous one. The third form was a dense sclerosis. The lung might be contracted and misshapen. Miliary gummata and vascular changes were common. Coarse gummata may occur in syphilis of the lung, but Dr. Stanley had not seen them without some of the other lesions described. The symptoms and signs produced in lung syphilis were illustrated by descriptions of cases. They were much more definite when the lesions were more chronic. Hæmoptysis occurred, and was more suggestive of slow ulceration of a bronchial surface owing to its muco-sanguineous appearance. Cough was irregular and often paroxysmal. Pyrexia, sweating, and wasting occurred and were due to mixed infection. They helped in the imitation of phthisis by syphilis. Signs more marked round the root of the lung or in the interscapular region should suggest a syphilitic lesion, given other indications of syphilis. The constantly negative result of examinations for tubercle bacilli was of great importance in diagnosis.

Dr. HUNTER stated that he had not seen a case of this condition in 1000 post mortem examinations which he had made. He agreed that the fact that cases of syphilis of the lung tended to become tuberculous increased the difficulties of diagnosis.

Dr. LAURISTON E. SHAW (London) stated that he had seen in museums similar specimens to those described and shown by Dr. Stanley, but he had not found them in his own post-mortem experience. He thought the explanation might be that syphilis was becoming less frequent in London than it was formerly.

Dr. WILSON and Dr. SAUNDBY both took part in the discussion, the latter affirming that visceral syphilis was rare in Birmingham.

Dr. STANLEY replied.

SURGERY.

WEDNESDAY, JULY 26TH.

President, Sir THOMAS F. CHAVASSE (Birmingham).

The PRESIDENT expressed the great regret that was felt at the loss of Mr. Furneaux Jordan; even at the last meeting of the Association in Birmingham he had retired from practice, but he would always be remembered as a lucid teacher and a skilled surgeon, who had reflected much credit on the Birmingham Medical School.

A discussion was opened by Mr. J. RUTHERFORD MORISON (Newcastle) on

The Treatment of General Septic Peritonitis.

He said that it had been calculated that the extent of the peritoneum was almost equal to that of the skin, and just as shock and rapid death might follow an extensive scald of the skin, so the same result might follow the injury to the peritoneum produced by general septic peritonitis. The cause of the condition was always an invasion of the peritoneal cavity by pyogenic organisms through some gross channel; and the most frequent cause was appendicitis or rupture of a gastric or duodenal ulcer. Microbically it might be said that the cause was generally a streptococcus. Death was most commonly the result of toxæmia, and it might prove fatal in a few hours. The terminations of septic peritonitis were the same terminations as those of inflammation elsewhere, and they were resolution, fibrosis or destruction and gangrene. If an arm was too tightly bandaged one of these results might follow: the arm might recover completely or it might undergo fibrosis causing Volkmann's ischæmic paralysis, or gangrene might occur. At first attempts to treat by operation general peritonitis were very extensive, and the more extensive they were the more quickly the patient died. The discovery of the germ causing the disease has in no way aided in the cure of the patient, and for surgical purposes the name of the organism present was of little avail; and the results were determined more by the circulatory disturbance produced than by any specific microbic action. Beyond arrest of the supply of germs by removal of the primary focus, surgery could do nothing except by dealing with the results. Knowledge of the condition of the general and local circulation was of more importance in prognosis and treatment than of the name of the organism producing the mischief. The prognosis was good if the heart was strong and the reaction satisfactory and the pulse was under 100; but if the patient was collapsed and the extremities were cold the prognosis was bad. They might speak of toxæmia, but they knew very little of what toxæmia was. Anything which disturbed the balance between the splanchnic and general circulations led to serious symptoms. The peritonitis was a natural reaction to the injury. The peritoneum was not so sensitive to and helpless under injury as used to be thought. It had great resisting power, greater than that of the more superficial tissues. The free secretion of peritoneal fluid was of great value, and the omentum was of important service as a life-saving agency. The mortality of general peritonitis had much decreased of late years, and the chief factor in the marked improvement of results came from an earlier diagnosis of the cause and more prompt treatment. Figures were produced showing the results of the treatment of all cases of peritonitis admitted to the Royal Victoria Infirmary, Newcastle, during the year 1910. There were in all 427 cases with 18 deaths; 33 of the cases were associated with general septic peritonitis, and of these 25 were operated upon; 13 recovered and 12 died. Eight were not operated upon, and of these 2 recovered and 6 died. To show the great importance of removing the primary focus the following case was related. A woman who had had seven children endeavoured to procure abortion at the third month of pregnancy by introducing a crochet hook into the uterus; the hook broke, and two days later she was admitted into Newcastle Infirmary with severe abdominal pain and a pulse of 120. The cervix was divided to facilitate examination and the remaining half of the needle was removed. Vaginal hysterectomy was performed, and the uterine peritoneum was found to be raised in bullæ. The patient recovered. The special and only reason for operation in general septic peritonitis was to deal with the infecting focus. In nearly every case immediate operation was needed, but it should be

performed in a properly equipped hospital or nursing home. Removal rarely made the patient worse. There were three great depressing factors: 1. Exposure; it was important to keep the patient warm. 2. The anæsthetic; as little as possible should be given and for as short a time as possible. It was better to begin with chloroform till the laryngeal reflex was lost and then to give ether. 3. Excessive manipulation; it was extremely important to handle the intestines as little as possible, for if there was rough manipulation the amount of shock was increased. The incision that was best was either a vertical incision in the middle line or an oblique incision in the line of the fibres of the external oblique muscle. It was well not to make the incision through the deeper tissues so extensive as through the more superficial structures; thus made it was more easy to sew up, and when stitching the peritoneum above the umbilicus the stitches should pass through the posterior layer of the sheath of the rectus. When a tube which had been used for drainage was removed a stitch should always be put in, for if not there was risk of bowel becoming strangulated in the opening. As to the site of the incision, as a rule it should be over the centre of the lesion, but if the site of the lesion was unknown the abdomen should be opened by a median incision with excision of the umbilicus. Gauze if used for drainage should never come in contact with the small intestine. After removal of the septic focus recovery depended upon the reaction of the peritoneum. Washing out the peritoneum was a method for which they were indebted to Lawson Tait; it was the best method to use when the peritoneum had to be cleansed. Diffused extravasated contents should be washed out if little or no gross evidence of peritonitis existed. Washing out and drainage might prevent residual subdiaphragmatic and pelvic abscesses. Mopping out was useful, and the sponges should be wrung out of normal saline solution. In most cases neither washing nor mopping was needed. Murphy neither washed nor mopped, and yet his mortality was less than 4 per cent. in cases dealt with within 48 hours. For general septic peritonitis only pelvic drainage was required, the patient being put in the Fowler position. Intravenous injection of saline solution was sometimes of much value, but it should be limited to two pints. The dressing should be voluminous, for it retained the body heat. In the after-treatment Murphy's proctoclysis was of the greatest value. Morphine might be used if employed wisely after the operation, for it might enable the patient to sleep. Purgatives might sometimes be needed. Though early operation was the treatment of an overwhelming majority of cases of septic peritonitis, yet in some it might be a serious mistake. It was likely to be so when the infective focus could not be removed—for example, in pneumococcal and gonococcal peritonitis—and it might also be so after the infective focus had been shut off by a "natural cure."

Professor C. F. A. KOCH (Groningen) said that on most points all surgeons were agreed. All cases should be operated on as soon as possible, unless the case was moribund. He held that the recent improvement in the statistics was entirely due to the appendix cases, for if they excluded these the results were much less favourable. At Groningen the cases were often seen very late, when little could be done for them. It was important to teach both medical men and patients the importance of early operation. If the cause was known the incision should be made near the site of the lesion, and most commonly this was in the right inguinal region. He had employed both flushing and sponging and had not been able to find any difference between the results. He had devised a special drainage-tube which was not easily blocked. In general septic peritonitis two or three incisions for drainage should be made. He had found appendicostomy of great value for supplying fluid to the large intestine. The most troublesome symptom after operation was persistent vomiting, and this he had treated successfully by drainage of the stomach by a tube passed through the nose.

Mr. HERBERT J. PATERSON (London) said that it ought to be acknowledged that much of the recent improvement in results was due to the teaching of American surgeons. The policy of waiting was unfortunately of London origin, and led to harmful results. Pneumococcal peritonitis was very unfavourable, while the gonococcal form was very favourable, and was easily diagnosed. Some of the very chronic cases should not be operated on. He expressed himself as an uncompromising opponent of irrigation of the peritoneum, and he did as little mopping as possible. As to the anæsthetic, he never used chloroform, and he thought it might be quite enough to turn the scale the wrong way in doubtful cases. He considered that the evils of catharsis had been greatly exaggerated, and he gave calomel in small doses by the mouth.

Mr. G. P. NEWBOLT (Liverpool) expressed his surprise at the different statistical results of different surgeons. He objected to chloroform, preferring ether by the open method. It was true that some cases should not be touched, but it was very difficult to say which those cases were. He urged that the surgeon should always be on the look-out for a subdiaphragmatic abscess. A sixth of a grain of morphine after the operation did no harm and might give great comfort to the patient.

Mr. J. GRANT ANDREW (Glasgow) said that he operated in these cases by making an inch-long incision above the pubis, and by the material pouring out learned much as to the source of the peritonitis, and he often knew where to make the main incision. In cases of acute gangrenous appendicitis he excised the appendix, but he did not find it necessary to drain. He raised the head and shoulders of the patient and aspirated the exudation through the suprapubic wound.

Mr. H. GILBERT BARLING (Birmingham) considered that the name, general septic peritonitis, was often misused, and it should only be employed when the whole peritoneum was infected up to the diaphragm and down to the pelvis. The streptococcal infection was the most serious. The skin incision might need to be long when the abdomen was fat, but the deeper tissues need not be more widely divided than usually. The mechanical arrangement of the abdominal organs had much to do with the spread of sepsis. In his opinion both irrigation and swabbing had their uses, but no attempt should be made to remove solid exudate. He was opposed to a routine immediate removal of an appendix.

Dr. J. CRAWFORD RENTON (Glasgow) said that he made a suprapubic drainage opening in cases of ruptured gastric ulcer and also an opening in each loin, and irrigated until the fluid ran through clear. In removing a patient to a nursing home or hospital he kept him in a sitting position. He always gave extract of the pituitary gland to prevent shock. In bad cases the patient had only three or four whiffs of chloroform and then ether. If the patient was kept sitting up after the operation vomiting did not occur.

Mr. GARNETT WRIGHT (Salford) was opposed to removal to hospital of cases with severe peritonitis, though early cases might stand removal well. If the case was advanced the patient stood a better chance at home. In operation for general peritonitis it was important to do the minimum, only just enough to remove the cause. In most cases both washing and mopping were harmful, for they prolonged the operation. When the arrangements did not permit proctoclysis, the intermittent injection of salines into the rectum might prove useful. In all cases he favoured immediate operation.

Mr. C. P. CHILDE (Portsmouth) held that if the general condition of the patient was good the prognosis was good, for it showed that the power of resistance was good. The operation should always be done as quickly as possible. As soon as the peritonitis was recognised the patient should be put into the Fowler position and moved to the operating theatre in that position. A cotton-wool jacket diminished shocks. In some early cases it was not necessary to drain, but generally drainage was needed. Proctoclysis was of great value. If fluid was returned by the bowel it was generally because it was wrongly given. The abdomen should not be tightly bandaged. In acute cases vaccines were of no value, as they could not be obtained in time. In appendicitis he always operated as soon as he saw the patient.

Mr. E. STANMORE BISHOP (Manchester) held that all surgeons were agreed that the earlier the operation the better. He pointed out that the eye, the joints, and the peritoneum had many points of resemblance, and that just as rigidity of the muscles round a joint was often the first sign of joint disease, so rigidity of the abdomen was often the first sign of peritonitis. Morphine just before an operation diminished the amount of anæsthetic needed. As to drainage, common-sense must be the judge. If extensive extravasation of intestinal contents had occurred drainage must be required. It must not be forgotten that drainage tubes ceased to drain after 48 hours, as they became shut off by adhesions. The Fowler position was very uncomfortable, and a less sitting

position was much more agreeable, but the pelvis must be the lowest point.

Mr. LEONARD A. BIDWELL (London) laid stress on the value of the pituitary extract after operation as it restored intestinal peristalsis, and it might counteract the constipating effect of morphine. He never washed out the peritoneal cavity until full drainage had been provided in both loins and in the pelvis. He drained in all cases which had lasted more than 12 hours before the operation. He had a high opinion of the value of a rectal drain.

Mr. D. P. D. WILKIE (Edinburgh) claimed that the organism present was not of so much importance as the patient's resistance. He had found that in fatal cases of general peritonitis there was much distension of the upper part of the jejunum. He had tried the introduction of oxygen gas into the peritoneal cavity and he found that it improved the pulse and caused active hyperæmia of the peritoneum. He had also employed in seven cases the serum from a patient recovering from general peritonitis, and in two cases which seemed certain to end fatally the patients recovered.

Dr. F. MILNES BLUMER (Stafford) related a case of a boy on whom he had operated four times, and on several occasions much septic infection of the peritoneum had occurred and yet the boy had recovered. He considered that the peritoneum did not receive sufficient credit for its power of dealing with septic organisms.

Mr. MORISON, in reply, said that he could not define general septic peritonitis. He agreed that statistics as a rule were very unreliable, but those he had offered were trustworthy.

DERMATOLOGY.

WEDNESDAY, JULY 26TH.

President, Dr. JAMES GALLOWAY (London).

Before the meeting of the Section many cases of dermatological interest were shown, and among them the following may be mentioned:—By Dr. W. A. LOXTON: Multiple Lupus; Lupus Erythematosus; Seborrhœic Alopecia; Ichthyosis in a girl of 15, in whom it first appeared at the age of 5 years; and a case of Lupus of the Leg in a child 10 years old (it had been treated successfully with a 5 per cent. ointment of tuberculin). By Mr. E. GILBERT SMITH: A case of Lupus Vulgaris; two cases of Lupus Erythematosus; a very Typical Syphilitic Ulcer of the Leg; and a case of Erythema Circinatum. By Dr. A. DOUGLAS HEATH: Two cases of Favus in Sisters; Dystrophy of the Nails (possibly due to a Tinea); Adenoma Sebaceum; Lupus Erythematosus; and a case for Diagnosis, which may have been Mycosis Fungoides, or perhaps a Multiple Keloid.

The PRESIDENT opened the meeting with a few words, expressing the value of the subjects about to be discussed and the importance of the exhibition of clinical cases.

Dr. T. COLCOTT FOX (London) then opened a discussion on

The Vascular Disorders of the Skin and their Relation to Other Morbid States.

He gave a *résumé* of the etiology and pathology of the three great groups of symptomatic eruptions in which the blood-vessels are specially involved—namely, the erythemata, purpura, and some phases of urticaria. He ascribed these skin manifestations to the influence of toxins, derived from various sources, circulating in the blood. In many of these conditions a positive diagnosis was at first impossible, yet the answer to the question whether an eruption was a manifestation of a specific fever such as scarlet fever or merely an erythematous condition was of the greatest importance. The evidence in favour of the theory that lupus erythematosus was of toxæmic origin was then discussed. He agreed that in a certain proportion of the cases some tuberculous lesion could be found in the body, but this was often nothing more than a tuberculous gland, and on the other hand it was certain that in many cases not the slightest evidence could be produced in favour of the presence of tuberculous disease either before or after the appearance of the erythematous lupus.

Sir WILLIAM OSLER (Oxford) dealt with those erythematous conditions which were associated with, and probably gave rise to, abnormal visceral conditions. The very same cause might at different times in the same individual produce different lesions, but lesions belonging to the same group of skin affections. Gastric or renal complications might occur, but the latter were much more serious than the former. Even acute nephritis might be seen. Thoracic complications were also met with, such as endocarditis and pleurisy. Sometimes cerebral complications such as hemiplegia and coma had been seen.

Sir MALCOLM MORRIS (London) divided the erythemata into two groups—those which were transient and those in which the course was prolonged. In many of the transient cases the diagnosis was extremely difficult, such as erythema scarlatiniforme, and time was necessary for diagnosis; in such cases it was advisable to isolate the case and to say that as yet a diagnosis was impossible. The time of the empirical treatment of these cases of erythema by aperients had gone by. The explanation of the origin of many of these cases had to be sought in idiosyncrasies, and idiosyncrasies were very difficult to explain. He had seen prolonged systematic treatment with a vaccine of bacillus coli sometimes prove of benefit.

Mr. A. EDDOWES (London) related a case in which a man who had always been in good health developed an eruption of urticarial type after drinking a glass of ale, and also a case in which a similar result had followed taking shrimps.

Dr. LESLIE ROBERTS (Liverpool) described the classification of these skin affections, and expressed the opinion that lupus erythematosus was due to disease of the lymphatic glands.

Dr. J. H. SEQUEIRA (London) distinguished clearly between the chronic and acute forms of lupus erythematosus.

The PRESIDENT of the Section related a case of acute lupus erythematosus in which no cause could be found, and there was no suspicion of an excess of alcohol. The patient remained under observation for a year, and it was afterwards discovered that she was an alcoholic. He had seen some cases which were associated with endocarditis.

DISEASES OF CHILDREN.

WEDNESDAY, JULY 26TH.

President, Dr. OTTO J. KAUFFMANN (Birmingham).

The PRESIDENT having opened the business of the Section with a few introductory remarks,

Dr. H. D. ROLLESTON (London) read a paper on the

Diagnosis, Prognosis, and Treatment of Tuberculous Peritonitis.

He said that tuberculous peritonitis had been divided into:—1. Acute Forms: (*a*) miliary form, part of generalised tuberculosis with abdominal pain, vomiting, and tympanites; (*b*) miliary tuberculosis of the peritoneum and pleuræ; and (*c*) miliary tuberculosis around the cæcum resembling appendicitis. 2. Chronic Forms: (*a*) ascitic; (*b*) caseous, ulcerating, or suppurative; (*c*) fibrous; and (*d*) localised. He said that diagnosis was most difficult in the earliest stages. The disease was sometimes latent, and only discovered at an operation performed for a hernia, which was often the first evidence of tuberculosis of the peritoneum, as it was forced out by the increased abdominal pressure due to ascites. The diagnosis was most difficult in young babies, a distended abdomen being comparatively common as the result of gastro-intestinal catarrh. The onset appeared to be acute in about a third of all the cases, and might at first strongly suggest appendicitis. In acute cases due to generalised tuberculosis the aspect might closely resemble enteric fever. Acute cases might also be readily confused with pneumococcic peritonitis. Ascites in children was so generally due to tuberculous peritonitis that its presence was highly suggestive of that condition. Hepatic cirrhosis being so rare in children cases of that disease were occasionally mistaken for tuberculous peritonitis. Other conditions causing ascites in children were late hereditary syphilis, obliteration of the hepatic veins (very rare), simple chronic inflammation of the peritoneum, malignant disease of the peritoneum or mesenteric glands. The prognosis of tuberculous peritonitis was, generally speaking, better in children than in adults. The prognosis was better in ascitic and fibrous cases than in caseous and ulcerative cases, and as a rule the more acute the onset the worse the prognosis. The presence of active tuberculosis elsewhere made the outlook grave, and the prognosis was also bad in mixed infections, shown by a continued temperature, night sweats, and definite leucocytosis. Treatment was considered

under the following heads: I. Hygienic Treatment. Absolute rest in bed, as far as possible in the fresh air and in the sun. Margate was specially recommended. II. Medicinal Treatment. Not so important. Iodine was used in the forms of iodoform, syrup of iodide of iron, and hypodermic injections of iodine with iodide of potassium and guaiacol. Salicylate of bismuth or salol might be tried, and opium for obstinate diarrhœa. Locally mercurial ointment rubbed into the abdomen by a bandage might be tried, and iodine or iodoform might be used in the same way. The action of the bandage, besides assisting absorption of the drugs, was important in securing rest to the abdomen. The diet should be nourishing and largely proteid, with the addition of cream and fatty food, including cod-liver oil. Starchy and vegetable food should be avoided, as liable to cause flatulence. III., Vaccine Treatment. There was much difference of opinion as to its efficacy. Wright and Latham recommended it, but Still found it of no effect, and his (Dr. Rolleston's) experience of it was doubtful. IV., X rays had been given a fair trial, but did not appear to be of any real therapeutic value. V., Surgical Treatment. Operation was contra-indicated in general or widespread tuberculosis, in infants under 12 months of age, and in patients with signs of pulmonary tuberculosis. It was unnecessary in the fibrous and adhesive forms, in the absence of any urgent symptoms of intestinal obstruction, and it was necessary in cases of abscess formation and in intestinal obstruction. It had been supposed that operation reduced the feeble vitality of the peritoneal tubercles so that they underwent death and involution. More recently the explanation was put forward that peritoneal tuberculosis being a local infection the opsonic index of the ascitic effusion was lower than that of the blood; hence after removal of the ascites there occurred a fresh effusion which was of a higher opsonic index, and therefore had a curative effect on the local tuberculous process. If this was true, simple paracentesis should be as effective as laparotomy, but the advantage of laparotomy was that a local focus of tuberculosis which might give rise to reinfection and relapse after partial or apparent cure might be thus detected and removed. It was generally agreed that the ascitic cases did well whether operated on or left alone, but as some cases began as ascites and went on to ulcerative stages, early laparotomy might prevent these sequels. Statistics on these points would be of value.

Professor G. A. WRIGHT (Manchester) said that pneumococcic peritonitis appeared to be rare in Manchester. It might be very difficult, without bacteriological examination, to distinguish it from the tuberculous disease. In his experience an acute, severe, generalised peritonitis without definite local cause, accompanied by rapid and great distension, great pain and tenderness with high fever and diarrhœa, and usually ending fatally, was probably pneumococcic. A localised abscess might be due to a breaking-down tuberculous gland, or to typhoid or appendicitis, or might be pneumococcal. The round, tense, distended, shiny abdomen, with full veins, fluid in the flanks and possibly localised collections elsewhere, with resonance round a protruding umbilicus, and all these conditions without pain, tenderness, or fever, was in all probability tuberculous. The diagnosis was still more certain if localised hard masses could be felt. The three most constant conditions were distension, pain, and the presence of a local palpable mass. Elevation of temperature appeared to exist in only a small minority of cases. The diagnosis might be very difficult and only to be certainly made by operation. As to the ultimate results of laparotomy and its value as a means of treatment, he summed up as follows: 1. That probably not much more than half the cases would live to grow up, for of those who recovered for a time a large proportion died from tuberculosis in some form within a few years, though the immediate operative mortality was small. 2. There was no hard-and-fast line between ascitic and plastic cases either as a matter of morbid anatomy or of operative treatment or of mortality. But operation was simple when there was much fluid and might be impossible in obliterative cases. 3. Tuberculous mesenteric glands might be safely removed and in some cases certainly should be removed.

Dr. C. H. MELLAND (Manchester) said that he formerly used to call in the aid of a surgical colleague in these cases, but that he had latterly relied more on medical treatment, diet, hygienic influences, and the use of Scott's dressing or a bandage to the abdomen, with equally satisfactory results.

Mr. W. MCADAM ECCLES (London) said that there were at least five reasons why the surgeon was inclined to advise operation in these cases: 1. Incision was safe, far safer than mere paracentesis. 2. Exposure of the peritoneum confirmed diagnosis. 3. Laparotomy might, and frequently did, expose a removeable tuberculous focus. 4. Opening the abdomen would allow of the wider application of remediable substances. 5. Operation necessitated subsequent rest with the abdomen firmly bandaged.

Mr. GEORGE HEATON (Birmingham) divided cases of tuberculous peritonitis into three main classes from the surgical point of view: 1. The fibrous adhesive forms, which should not be operated on. 2. Ulcerous forms. Here active surgery was contra-indicated, or should be limited to the opening of any localised abscesses which might form. 3. The ascitic variety, in which laparotomy was indicated.

The PRESIDENT illustrated one of the difficulties of diagnosing tuberculous peritonitis by exhibiting a specimen of extensive subserous sarcoma of the peritoneum which had been mistaken for tubercle. In his opinion the per cutem administration of mercury ointment was the most valuable therapeutic agent, and he drew attention to its effect in slightly diminishing the number of leucocytes.

Dr. W. E. HUME (Newcastle-upon-Tyne) read a paper on

General Œdema Following Gastro-enteritis in Children,

based on 13 cases he had observed in infants free from cardiac or renal disease. The treatment employed was the subcutaneous injection of adrenalin chloride solution, and was successful. He thought the condition might have been due to fibrosis of the suprarenal glands.

Dr. ROLLESTON said he had seen such cases, and that, though rare, when they did occur they did so in small groups. Presumably the condition was toxic. Possibly œdema of a similar kind in the kidneys might induce albuminuria. So some cases of general œdema with albuminuria might be of this nature and not primarily renal.

Dr. R. H. MILLER (London) asked if the medullary changes were not found in the suprarenal glands of marasmic children dying without œdema.

Dr. ANN ELIZABETH CLARK (Birmingham) said that cases of general œdema in children under three years of age were not rare, and in her experience recovery was usual.

The PRESIDENT thought that these cases would be observed in greater numbers when attention had been called to them, as by Dr. Hume's remarks. In his opinion the morbid phenomena might be due to a vaso-motor paralysis, produced by a toxic material of intestinal origin. The good effect of suprarenal extract might be the direct result of increasing the blood pressure, which was so extremely low when the patients first came under observation.

Dr. HUME briefly replied.

Dr. LEONARD G. PARSONS (Birmingham) read a paper on

Infantilism Associated with Chronic Interstitial Nephritis.

Its purpose was, he said, to direct attention to a class of case which had apparently escaped general recognition. He could only find one case described in the literature—a living patient shown by Dr. H. Morley Fletcher at the meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine last March. Infantilism strictly meant the non-appearance at the proper time of the primary sexual characteristics or of the associated secondary sexual characteristics, but the term was frequently applied to children who were backward in bodily development. Dr. Parsons's case was a girl aged 6½ years, who had been suffering from wasting and excessive thirst. In bodily and mental development she was like a child of three years old. There was œdema of the legs and face and some evidence of broncho-pneumonia. The urine was pale in colour, acid, specific gravity 1010, and showed a faint trace of albumin, but no casts, sugar, or cells. Death occurred on the seventh day after admission. Post mortem the kidneys were found extremely small, and together weighed less than an ounce. Miscroscopically there was a most extensive general fibrosis of cortex and medulla, more marked than ever obtained in the most advanced cases in adults. Speculation on the cause of this condition of infantilism was fascinating. Bradford had shown that removal of two-thirds the weight of the kidneys in animals produced polyuria and wasting. He was inclined to attribute his results to the diminution of an internal secretion of the kidneys. This would put infantilism associated with granular kidney on all fours with cretinism. On the other

hand, the condition might be due to the presence of a chronic disease which hindered the proper carrying out of the functions of the body.

Dr. JAMES E. H. SAWYER (Birmingham) said that he had published 55 cases of chronic interstitial nephritis. In none of these had he found infantilism, meaning mental backwardness, but in most of the cases there was great backwardness in growth.

Dr. ROLLESTON considered that the easiest explanation of Dr. Parsons's case was that both the infantilism and the renal changes were due to congenital syphilis.

After some remarks from Dr. MILLER and the PRESIDENT, and a brief reply from Dr. PARSONS, the business of the session closed.

ELECTRICITY AND RADIOLOGY.

WEDNESDAY, JULY 26TH.

President, Dr. HUGH WALSHAM (London).

The proceedings in this Section were opened by a short address from the chair by the PRESIDENT, who drew attention to the progress made in medical electricity and radiology during the last 25 years, and made special reference to the work done in St. Bartholomew's Hospital, first by the late Dr. W. E. Steavenson and secondly by his successor, Dr. Henry Lewis Jones. It was specially noteworthy that though a section on these subjects was refused by the British Medical Association for many years it seemed that now it had become as much a part of the regular programme as any other. This was cause for great satisfaction; it should act as a stimulus to their work, if any were needed, and would do much to improve the position of medical electricity and radiology in the eyes of the profession and the public alike.

Professor Sir OLIVER LODGE (Birmingham) gave an address

On the Conveyance of Electricity through Solids, Liquids, and Gases.

This interesting and important subject was treated from the point of view of the most modern theories. The transfer of electricity is by means of electrons carrying definite negative electrical charges, and in a metal these carriers or ions flow through it, because the electrons composing the metal are moveable. Thus the transference in a solid is *through* matter, with a rapidity comparable to that of ordinary light—i.e., about 1/20th of the speed of light. In the case of liquids, the electrolyte is made up of groups of ions in which the electrical charges are exactly balanced. The current being turned on, there is a shifting of the ions owing to the extra electrical charges to be transmitted, the positive ions moving with the current and the negative ions against the current. Both positive and negative ions take part in the transference, which in this case takes place *with* matter. Coming to the consideration of the conveyance of electricity through gases, it is found that it takes place mainly through the agency of positive electrons. These travel very slowly—about 1/20,000th of the speed of light; but because they are very numerous they carry most of the current, and also they travel *free of matter*. Radiation is explained as being due to the acceleration of the electron, which acceleration may be positive or negative, and merely altered in direction. An electron, suddenly hurried on, retarded or made to describe a curve, technically undergoes acceleration, and radiation is a result. In an ordinary lamp filament electrons are rushing about with great rapidity—i.e., are in a state of constant acceleration. The X ray is a result of suddenly stopping an electron or group of electrons, giving rise to solitary impulses—the "whip-crack" of radiation. This very interesting and instructive address was brought to a close by a description and demonstration of the action of a form of valve tube invented by himself which possesses a high efficiency, and by its assistance a more or less permanent charge could be given to a Leyden jar.

Dr. H. LEWIS JONES (London) opened a discussion on

Ionic Medication and the Theory of Ions

by saying that Stephane Leduc had done a great deal to clarify the ideas of medical electricity by his writings upon the rôle of ions in medical work. He had taught them how to apply large currents with a minimum of discomfort, and how to approach the treatment of a number of morbid conditions by electrical methods. The shock of the induction coil current, the sting of the continuous current, and the painlessness of high-frequency currents were all functions of ionic movement. The latter, by the rapidity of its oscillations, produced insufficient movement of ions to disturb the chemical equilibrium of the nerve and muscle, and therefore caused no shock or pain unless it were very highly concentrated. Dr. Lewis Jones considered that evidence was still needed as to the penetration of ions, not so much whether they penetrated or not as whether they could be made to penetrate far enough for practical purposes, as, for instance, in the treatment of joint affections. Perhaps the observed good results depended upon the commotion of the natural ions of the tissues rather than upon the introduction of extraneous ions from without. He referred to the useful results of ionic medication in facial neuralgia, and suggested that facial paralysis should also be treated by ionic applications to the trunk and main branches of the nerve, and considered that he had seen good results follow this mode of treating facial paralysis. He hoped to hear the personal experiences of individual workers and considered that ionic medication was likely to render useful help to almost every branch of practical surgery and medicine. At the close of his remarks a demonstration was given of the rapid transference of ions through several thicknesses of moistened parchment paper.

A very free and full discussion followed, in which all of those who took part paid a high tribute to the excellent work on the subject that had been done by Dr. Lewis Jones.

Professor WERTHEIM SALOMONSON (Amsterdam) asked if it were possible to determine how much of an alkaloid were introduced into the tissues under any given set of conditions, and if any work had been done in the use of the poisonous alkaloids introduced in this way.

Dr. REGINALD PRATT (Leicester) spoke of the good results he had had in cases of chronic mastitis and chronic cystitis by the introduction of zinc ions. The latter was treated by means of a special form of zinc rectal electrode arranged for easy introduction and protection of the muco-cutaneous margin, which was very sensitive to electrical currents.

Dr. R. W. MCKENNA (Liverpool) bore testimony to the great value of ionisation in dermatology and he described a method suggested by his partner, Dr. G. G. Stopford-Taylor, for increasing the action of the zinc ionisation. This was to wipe over the nodules with liq. potassæ, which had the effect of rapidly dissolving off the gelatinous covering. After washing with saline solution or distilled water the ionisation was commenced and continued for about 20 minutes. This was repeated after 14 days if necessary. He claimed a result superior to that of any other method, not excepting that of Finsen.

Dr. J. METCALFE (Bradford) also found ionisation of great value in superficial disorders.

Dr. L. W. BATHURST (London) said that, as the result of some experience of ionisation, there were some points which he should like to emphasise. With regard to the all-important matter of technique, he had followed closely the methods of Leduc, using pads equal to not less than 16 thicknesses of lint thoroughly saturated with the solution employed. He had tried many forms of electrode, but knew of none better than a particular gilt wire gauze with fine meshes sold for the trimming of ladies' hats under the trade name of tricotine. Another excellent electrode was a pot-cleaner made of strands of copper-wire. Before using these he had employed thin metallic sheets which could be bent and moulded, but much less perfectly, to the shape of the part. Dr. Bathurst regarded the strength of current as being of great importance, relatively strong currents being, he thought, essential. But this must vary in accordance with: (1) The size of the electrodes; (2) the region of the body under treatment; (3) the sensitiveness of the patient to pain; (4) the reaction of the individual's skin, for skins seemed to vary very much in their reaction to ionisation; and (5) the ions employed. Much stronger currents, for example, could be used with salicylic ions than many others. As a rough index of the current he was accustomed to employ, he should consider in the treatment of a large joint, such as a knee, a current of 30–40 ma. as a minimum, 50–70 ma. as average, and 100–150 ma. as exceptionally strong. In his case the current was induced gradually, as much as a quarter of an hour being occupied in attaining a maximum. In this connexion he wished to speak particularly of the reaction of the skin, which might be only a slight redness or might amount to destruction of tissue. This reaction was in

accordance with the factors just noted and with the strength of the current. The important points for the avoidance of burns were thickness of pads, and even pressure of the electrodes. It was for this reason he gave up the solid sheets of metal in favour of those which could be evenly applied and held in position by a bandage. Caution as to the strength of current must be had in each case, for he had known burns to occur with currents of even 20 ma., especially if any abrasion of the skin be present. It was well in these cases to cover such abrasion with a small piece of some non-conductor. The duration of treatment had been from 10–30 minutes and in hospital cases twice a week; but experience led him to think that more frequent treatment was of great advantage. The strength of his solutions had been 1 per cent. throughout. Those mostly used were: (1) Sodium chloride for chlorine ions; (2) sodium salicylate for salicylic ions; (3) zinc chloride for zinc ions; and (4) potassium or lithium iodide for iodine. Chlorine ions had been used chiefly for joints stiffened with fibrous thickening, superficial scars, and keloid growths. The most satisfactory results had been shown in this class of case. A stiff and painful shoulder-joint coming on after childbirth, which had resisted the action of drugs given by the mouth and massage, cleared up completely under chlorine ionisation. An extensive scar of the face with keloid growth showed very great improvement with six weeks' treatment; and a hand from which a supernumerary finger had been removed, and in which the adjoining fingers were useless owing to a large amount of scar tissue, regained complete use of the fingers by chlorine ionisation. Salicylic ions had been used chiefly in (*a*) rheumatic affections of joints and rheumatoid arthritis, and (*b*) in various forms of neuralgia and neuritis. In the joint affections great relief was generally experienced, and where no active infection was present marked improvement of the physical signs could be noted. In neuralgias where no auto-intoxication was in progress great improvement might be noted. A man who for 20 years had had trigeminal neuralgia said after his second treatment that he had known no such relief in that time. In an elderly lady with the same affection, which had been getting progressively worse, so that morphine injections had been resorted to at frequent intervals, two such injections only had been necessary in seven months since ionisation was commenced. The spasms of tic douloureux also had been seen to disappear after three or four applications. Zinc ions Dr. Bathurst had used chiefly for chronic ulcers and sinuses. A large ulcer of the heel following thrombosis of the leg after parturition had left a woman of 25 bedridden in spite of excision of the ulcer and treatment as an in-patient. She had not put her foot to the ground for eight months when zinc ionisation (20 ma. for 15 minutes) was applied to the ulcer, which was about the size of a crown-piece. This treatment was repeated a week later, and the ulcer was completely healed in three weeks. These and other results had encouraged him very much in the treatment by ionisation, the more so when he considered the unpromising cases which formed the bulk of his hospital patients. But he thought the relief given in the most distressing forms of neuralgia, the effect on scar tissue, especially if near the surface, and the almost magical effect on chronic ulcers and sinuses more than justified the plea for an extension of this form of treatment.

Dr. N. S. FINZI (London) made an interesting statement as to how one could tell if any particular ion was penetrating deeply. If an ion was not one to penetrate deeply it was usually because it accumulated near the surface, forming compounds with the constituents of the tissues, and these formed a barrier and thus increased the electrical resistance. Thus, if the milliampèremeter be watched the hand at first slowly rose, stopped, and then receded. If it was a deeply penetrating ion the hand of the instrument slowly rose, and later might become stationary, but did not recede.

Dr. A. H. PIRIE (London), Dr. J. DELPRATT HARRIS (Exeter), Dr. C. F. BAILEY (Brighton), Dr. E. REGINALD MORTON (London), and Dr. MAURICE R. J. HAYES (Dublin) also took part in the discussion.

In his reply Dr. JONES stated that they were not yet in possession of any reliable means of determining the actual amount of any ion introduced in this way. In the treatment of rodent ulcers he admitted that he always selected his cases, as the method was not reliable in those old-standing cases where it was extending more or less deeply, but in suitable cases the results were all that could be desired. With regard to the use of strong solutions for ionisation, 10 per cent. or more, he could not see how these could be of any real advantage, as there were far more ions present in the usual 2 per cent. solution than could possibly be made use of in any ordinary application.

Dr. BAILEY read a paper entitled

Fractures Undiagnosable except by X Ray Examination.

He showed how an X ray examination removed all doubt as to the existence or non-existence of a fracture in a large number of doubtful cases, and also revealed the existence of fractures in structures not previously described, such as that of a transverse process of a lumbar vertebra from muscular action. The paper also went on to show that there were very few cases of more or less severe injury where it was advisable in the interests of both patient and doctor to omit a proper X ray examination. In this most radiographers of extensive experience will heartily agree, for however skilful may be the clinician errors of diagnosis are bound to occur, and an X ray examination provides an invaluable safeguard. In doing this it was very properly pointed out that we never should be satisfied with a screen examination, as fractures without displacement were very seldom detected in this way, and in all cases a stereoscopic radiograph would add sufficient to our knowledge to make it well worth the trouble of doing. These points were well demonstrated in the radiographs with which the paper was illustrated, especially in cases of injury about the wrist.

Dr. J. A. CODD (Wolverhampton) gave instances of cases where fractures were only discoverable by X-ray examination.

Dr. PIRIE drew attention to the fact that while the stereoscopic method was the best for some parts of the body, in others, such as the ankle-joint, an antero-posterior and lateral view gave the most valuable information.

Mr. F. EMRYS-JONES (Birmingham) and Mr. J. HALL-EDWARDS (Birmingham) stated that the X ray method of examination had led to superior results in treatment.

Dr. MORTON, while wishing to discourage anything in the nature of slackness in making a clinical examination, said that in these days a high standard of perfection was demanded, and referred to the Workmen's Compensation Act and other circumstances. He considered that every case of fracture ought to be radiographed—the screen was not accurate enough—and it would be found that in every case it would add something to their knowledge of the case, which could never be too great, in the interests of the patient. He thought that the medical man who treated fractures without X ray examination in these days, especially if in the vicinity of a joint, was going out of his way to seek trouble, and that he must not be surprised if he found it.

Dr. J. METCALFE (Bradford), Dr. HAYES, and Dr. HARRIS all bore testimony to the facts brought out by the reader of the paper, and Dr. BAILEY replied.

Finally, Dr. PIRIE showed a new form of Stereoscope.

LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

WEDNESDAY, JULY 26TH.

President, Mr. FRANK MARSH (Birmingham).

The PRESIDENT, in a brief address, after welcoming the visitors from over the seas, mentioned that Birmingham possessed one of the oldest established hospitals in the kingdom for the special treatment of diseases of the throat, nose, and ear. It was established 70 years ago and contained 41 beds for the treatment of in-patients. Unfortunately there was no chair or provision for teaching these special subjects in the University. That might be due to there being no predominance of these diseases in Birmingham, partly owing to the high sea-level, and partly to the absence of any industry especially conducive to their development. Referring to the Insurance Bill, specialists, he said, probably would not be much affected. The State might have to subsidise special hospitals which might come under State or municipal control. If so, provision would have to be made for the medical staffs on the hospitals, and a representative committee of hospital staffs in that case should be formed. The triology of laryngology, otology, and rhinology being united again in one section he thought

was satisfactory; if separated then rhinology might prove itself to be the predominant partner. He referred to the Oxford diploma in ophthalmology. Specialists in their own triology possibly might one day adopt a similar course in view of the inadequate teaching of the subjects in the universities. There was, however, the danger of such a diploma in future being granted to persons without a sufficiently high standard of knowledge of general medicine and surgery.

Dr. J. DUNDAS GRANT (London) and Dr. P. WATSON-WILLIAMS (Bristol) opened a discussion on the

Treatment of Laryngeal Tuberculosis.

Dr. DUNDAS GRANT confined himself mainly to the consideration of various local etiological factors and methods of treatment. Amongst the causes of localisation of the disease in the larynx he mentioned irritants, including under these excessive use and abuse of the voice, urging maintenance of silence for three or four months. Marked improvement followed even whispering if a genuine whisper were adopted. Useless injurious coughing should be controlled, and if possible a voiceless cough should be acquired. Tobacco smoke and irritating vapours were also factors. Nasal obstruction and nasal discharges were predisposing causes. Therapeutic measures were to be founded on the treatment of these irritants. Continuous antiseptic inhalations acted beneficially by checking cough. The removal of nasal obstruction and pathological secretions from the nasal cavities was important and yielded good results upon the laryngeal disease. He spoke of the beneficial results following upon the use of the galvano-cautery puncture. For the relief of important symptoms, such as severe dysphagia, local sedatives administered in the form of powder by means of a tube were advised. If the dysphagia were extreme recourse might be had to alcoholic injections into the superior laryngeal nerve. The regurgitation of liquids might be overcome by Wolfenden's method, or by the use of a feeding tube whilst the patient was lying on the back on the floor. In advising and carrying out local treatment regard and caution had to be paid to the patient's general condition and temperament.

Dr. WATSON-WILLIAMS considered, although there had been several discussions held on the subject within recent years, that the last word had not been said. Reference to the pathogenesis of tuberculous affections of the larynx, and the differentiation of clinical varieties afforded prognostic importance from the therapeutic standpoint. Sanatorium treatment alone without local treatment at times yielded remarkable results and a lasting recovery. Regulated exercise and rest of the voice were amongst the factors in the recoveries obtained through sanatorium treatment. A dry climate and a high altitude had no beneficial influence on the larynx. Nasal obstruction should be treated. Tuberculin treatment was useful in certain cases. He had known tuberculin relieve a patient's sufferings for a remaining eight days of life. Fibroid granulations and tuberculomata in the interarytenoid region and along the ventricular bands might be removed if producing aphonia, and the condition of the lungs permitted of such surgical treatment. Dr. Watson-Williams demonstrated a series of lantern slides illustrating the points he had dealt with.

Mr. G. SECCOMBE HETT (London) exhibited and demonstrated a collection of specimens of parts removed from cases of laryngeal tuberculosis. In a series of 30 cases he had amputated the epiglottis in 24, and the collection included 12 of these and part of the arytenoid region from another case. Relief had been immediately afforded. He advised some traction being put upon the epiglottis to ensure it being amputated down to the stump, as he had found when this had not been done it had been necessary subsequently to remove a further portion.

Dr. W. JOBSON HORNE (London) based his views of the surgical treatment of laryngeal tuberculosis upon his investigations into the pathogenesis of the disease. He summarised his conclusions as follows: 1. That when the larynx is infected with tubercle the disease is already established in the lung. Primary tuberculosis of the larynx is a negligible quantity. 2. That the disease in the larynx progresses *pari passu* with that in the lungs; when the disease in the larynx presents ulceration that in the lungs has advanced to cavitation; and *vice versâ*, when that in the lungs has become arrested, then that in the larynx heals. 3. That when the disease in the lung is confined to the pure miliary form the larynx is not infected. 4. That infection of the larynx takes place by the sputum from the lungs through the opening of the ducts in the laryngeal mucosa. 5. That the regions of the larynx more prolific with glandular structure are more vulnerable to tuberculosis. 6. That the regions of the larynx covered with columnar-cell epithelium are more prolific with glandular structure, and therefore are more vulnerable to the disease than the parts covered with squamous epithelium. Hence, the central part of the vocal cord itself becomes involved only by continuity of the disease and offers the greatest resisting powers. 7. That the rational treatment is to preserve the mucous membrane covering the larynx and to induce a metaplasia of the columnar mucosa into the squamous variety. That is to induce the condition of pachydermia laryngis. This is the natural process of arrest of the disease. The natural process of arrest can be induced and imitated by absolute rest of voice and the submucous puncture with the galvano-cautery point. These conclusions were based upon a series of specimens; photographs of many were exhibited in the loan museum formed in connexion with the meeting, and were fully described in the catalogue. Dr. Jobson Horne urged the routine and the early examination of the larynx in all cases, and especially doubtful cases of phthisis even when there were no pulmonary signs. Thereby extreme surgical measures could be avoided.

Dr. E. F. TREVELYAN (Leeds) agreed that patients should be taught how to cough. He did not agree with continuous antiseptic inhalations except in cases of bronchitis. He had not seen good results from tuberculin; those who got such a high percentage of recoveries must get different material to work upon. Patients with dysphagia could bolt eggs.

Dr. S. MORITZ (Manchester) spoke from his experience at a hospital that was exceptional, inasmuch as it existed for the combined purposes of treating consumption and diseases of the throat. He regarded the unbroken mucous membrane of a larynx infiltrated with tubercle as a *noli me tangere*. The general condition of the patient must be good to permit of the removal of parts of the larynx by surgical measures. Surgical treatment was liable to cause a small ulcer to become a larger one.

Dr. ANDREW WYLIE (London) was in favour of a masterly inactivity in the treatment of laryngeal tuberculosis. Moist climates—open moorland—as in Cornwall, Yorkshire, or Scotland, were better than Switzerland.

Dr. DAN MCKENZIE (London) was also in favour of considerable inactivity. He advocated removal of nasal obstructions and free nasal respiration.

Dr. L. H. PEGLER (London) also supported the removal of nasal obstructions.

Dr. G. WILLIAM HILL (London), speaking generally, was opposed to operations for nasal obstructions in patients with consumption.

Dr. N. C. HARING (Manchester) was opposed to the surgical removal of parts of the larynx except in cases of circumscribed lesions; then operate for relief and not for cure. With tuberculin he had seen the larynx getting better, whilst the pulmonary lesion was getting worse—an argument against the surgical treatment of the larynx.

The PRESIDENT summed up the discussion. The Section, he concluded, was in favour of conservative methods, such as silence, intra-laryngeal injections, and the galvano-cautery puncture. Operations could be done on the nasal passages in selected cases. Tuberculin had its place, but was not much advocated. Individual conditions must be the guide to the choice of treatment.

Dr. DUNDAS GRANT and Dr. WATSON-WILLIAMS replied, and Mr. SECCOMBE HETT also briefly replied.

Dr. HILL read a paper entitled

Dysphagic Conditions Wrongly Attributed to Œsophageal Spasm.

The paper was based upon anatomical considerations as well as upon clinical observations. He maintained there was no such thing as a primary idiopathic spasm of the œsophagus in the commonly accepted sense of the term.

The PRESIDENT was also of the opinion that caution should be exercised in the use of the term idiopathic.

Dr. JOBSON HORNE agreed generally with the views expressed and cited a case in support of these views.

Dr. MCKENZIE pointed out that any irritation might set up

a spasm of the œsophagus and the spasm in turn might bring about dilatation of the œsophagus.

Dr. A. BROWN KELLY (Glasgow) inquired, if dysphagic conditions could not be attributed to œsophageal spasm, how death from starvation following dysphagia, in which post mortem no disease was found in the œsophagus, could be accounted for.

Dr. DUNDAS GRANT was not disposed to throw away altogether the theory of functional spasm. By doing so the patients might be made unhappy.

Dr. PEGLER cited the case of a lady now aged 80, who for 30 years had not been able to swallow solid food. Malignant disease after that length of time he considered should be excluded and the case regarded as one of functional spasm.

Dr. HILL replied, maintaining his original contentions.

MEDICAL SOCIOLOGY.

WEDNESDAY, JULY 26TH.

President, Dr. GEORGE REID (Stafford).

The PRESIDENT, in his opening remarks, spoke of the wide field covered by the term "medical sociology"; it was, indeed, the pivot of the whole social movement, for the nation's health was the crux of national prosperity, and with a low health standard social progress was impossible. Who, then, were better fitted to speak authoritatively on social questions than medical men? The vital factor in all national progress was public opinion; unless the people were roused and their sympathy secured, all agitation was futile. That the nation was becoming more alive to the importance of the health factor in securing and maintaining its prosperity and social welfare was shown by recent legislative enactments; for example, the Notification of Births Act, the Education (Administrative Provisions) Act, and the Housing and Town Planning Act, not to mention the National Insurance Bill now before Parliament. In this measure the legislature proposed to tamper with the interests of medical men to an extent that would practically ruin a large section of the hardest workers in the profession. Nevertheless, if reasonable amendments could be secured in the Bill, medical men should do their utmost to make invalidity insurance a success. The scheme could not be carried through without their coöperation, and unless they received fair treatment they must not hesitate to exercise their veto.

Mr. J. SMITH WHITAKER, medical secretary to the Association, opened a discussion on

The Medical Aspects of the Poor-law,

with special reference to State insurance and the provision of better medical attendance on the poorer members of the community. Mr. Smith Whitaker, in an endeavour to indicate the various parts of the problem in their relation to one another and to the broader social problems of the hour, pointed to two directions in which public opinion had been tending. One was the appreciation by the whole community of the fundamental importance of the health of each individual, and the other the greatly increasing tendency to look to the machinery of the State as the instrument for effecting social reform. They could trace the sequence of events from the Commission on the Poor-law of 1832 to the Report on Physical Deterioration. That led to the appointment of the Royal Commission on the Poor-law, which in its turn was responsible for the inception of the National Insurance Bill. Looked at from the purely economic side, individual health, or the lack of it, seriously affected national well-being. The person who could not obtain proper medical attendance was liable to become a charge on the community, and the community also suffered from the loss of his labour. Analysing the main causes of sickness they were found to be due not only to absolute lack of means to provide necessary medical attendance, but also to defective social organisation which did not enable the individual to apply such resources as he possessed to the best advantage. In this connexion Mr. Smith Whitaker condemned the too narrow definition of the word "destitution" that had been observable in the discussion of both the Majority and Minority Reports of the Royal Commission. Destitution was a relative term; it did not depend upon whether a person had money, but whether his resources were equal to satisfying the needs of the moment. A man in need of institutional treatment was destitute if no hospital was available and he could not afford an operation or a nursing home. Destitution might consist in the want of ready money, and that was where the principle of insurance against sickness came in. As to the method of dealing with the difficulty, the proposal in the Minority Report to adopt a system of charge and recovery might be dismissed as impracticable. The medical profession felt strongly—not in its own but in the public interest—that individual medical attendance would best be given on the lines of private practice, and that the employment of the whole-time officer was not a sound principle. That was the foundation of the whole of their objections to the Minority proposals and also to some of the possibilities of the Insurance Bill. Mr. Smith Whitaker concluded by re-stating in detail the medical objections to the Bill.

Dr. F. E. WYNNE (Leigh) read a paper on

The State Distrust of the Profession.

He pointed to the treatment accorded to medical men by clubs, Friendly Societies, insurance companies, and public bodies, and to such legislation as the Midwives Act and the Notification of Births Act as evidence of that distrust. The fact that the nature of the medical man's services made it ethically impossible for him to refuse them had been used to cheat the profession of its just rights, and its own jealousy and disunion had completed its serfdom. Distrust of the honesty of the profession in the prevention of malingering, and not the cost of a system of payment for work done, was responsible for the adoption of the contract system in the Insurance Bill. The aim of medical men must be to convert distrust into confidence, but before they could be trusted it appeared they must make themselves feared. The directors of great insurance companies, the judicial bench, local bodies, and Parliament were all contemptuous in their attitude towards the medical profession. What were the reasons? The public still had a degree of belief—perhaps subconsciously—in quackery, and so had a doubt as to the intrinsic value of the doctor's knowledge. Another reason for distrust was the growing spirit of coöperation and union amongst medical men. The public could see in doctors' organisation nothing but an attempt to make them pay for services they had come to believe themselves entitled to receive for nothing. Dr. Wynne urged that the present crisis afforded the profession an opportunity of insisting on new standards in its dealings with the community.

Dr. PERCY R. COOPER (Bowdon), in a communication upon

Medical Attendance under State Insurance,

criticised the Chancellor's calculations as to the cost of medical benefit and also the airy way he spoke of bringing into the scheme millions of the general practitioners' private patients. The conditions insisted upon by the medical profession were in the public interest as much as in their own. The policy of the profession was to secure modification of the Bill if possible, and, if not, to refuse to act under it. On their union and loyalty to one another the future of their great and beloved profession depended.

Mr. F. G. LAYTON (Walsall) presented an argument for

A State Medical Service.

Under the present system, if medical men were hard-headed men of business, which, thanks to the gods, they were not, they would oppose everything in the way of preventive medicine to the utmost of their power. It was notorious that they did nothing of the sort, but did all they could to keep their clients well. True, their clients frustrated their efforts, to their profit and advantage. Doctors preached the gospel of hygiene with perfect sincerity; if only people would listen the profession would be speedily ruined. With this preface, Dr. Layton went on to outline a State medical service under a Department of Public Health, the country to be mapped out into districts, and all medical men to be paid regular salaries, with numerous opportunities for promotion. Some day, when the nation had grown wise, it would meet its most insidious foe—disease—with a standing national army of health. The private venture system in this matter was out of date.

Dr. MICHAEL DEWAR (Edinburgh) discussed

The Medical Treatment of the Poor,

devoting attention to the class which, though it maintains itself as a rule, is unable to contribute towards its medical

relief. This was the class which most needed a State scheme, but the Chancellor's Bill did nothing for them. There was very small chance of any money except that subscribed by the Government standing to the credit of a man of this class in the Post Office fund. It was curious that while those able to contribute to the Post Office fund were debarred from receiving sick benefit, they were eligible for medical benefit at once. This was truly vicarious philanthropy on the part of the Government. The Government should have done more for this class and left the steady and good wage-earner alone. He believed if a plebiscite were taken the majority of the industrial classes would say they did not want to be compelled to insure against sickness because they were well able to pay for attendance. Dr. Dewar suggested that, as the present wage-limit was too high, insurers should be entitled to benefit on a contributory basis according to income. He gave reasons against the establishment of a whole-time medical service to do this work, and said private practitioners were perfectly well able to carry it out provided they received adequate remuneration.

In the following discussion,

Mr. W. HOLDER (Hull) thought enough had not been said of the benefits which the Insurance Bill would confer upon the medical man. The provisions for unemployment insurance would enable the working classes to tide over times of stress and meet their medical bills. He complained that the British Medical Association had not secured a definite minimum of remuneration to medical men in the Insurance Bill.

Mr. SMITH WHITAKER on this point explained that it was felt a minimum tended to become a maximum, and it was thought best to leave the Bill as elastic as possible in these matters so as to allow the best possible terms to be arranged locally.

Dr. J. H. KEAY (Greenwich) gave it as his experience as a medical man in a poor district that only by means of insurance could the working-classes provide for medical attendance. He regretted a lack of continuity in the Government policy in these matters. Old-age pensions had been provided on a non-contributory bases; the present scheme was contributory. He was afraid enough advantage had not been taken of the experience accumulated in Germany regarding State insurance, and that we were in danger of repeating some of their mistakes.

Dr. J. JENKINS ROBB (Bournville) declared his belief in a State medical service. He emphasised the need of taking special precautions under the Insurance Bill to prevent malingering. He also gave it as his opinion that the profession had gone too far in its opposition to the Bill and had given the impression that it was "out for fees."

Mr. JAMES NEAL (Birmingham), one of the honorary secretaries of the section, protested against this statement, declaring that the policy enunciated by the British Medical Association had been generally recognised as fair and reasonable.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 26TH.

President, Dr. EDWIN GOODALL (Mental Hospital, Cardiff).

The PRESIDENT opened the meeting of the section with an address on

The Possible Toxic Origin of Some Forms of Insanity,

which will be published in a future issue of THE LANCET.

Professor H. OPPENHEIM (Berlin) was then introduced to the section by the President, and received a hearty welcome. He opened a discussion on

The Different Types of Disseminated Sclerosis

by submitting a classification based on his own experience and researches. After pointing out how inadequate the classical description of the disease, as elaborated by Charcot, had long since become, Professor Oppenheim said that the disease might be classified according to the level of the central nervous system affected, in which case four main types were readily distinguishable—viz., (1) spinal; (2) cerebral; (3) cerebro-spinal; and (4) optic or ocular. I. The spinal variety of disseminated sclerosis was itself subdivisible, according as a vertical level, or an area on transverse section, was adopted for the criterion. In the former case there were (*a*) dorsal, (*b*) cervical, (*c*) lumbo-sacral and sacral, and (*d*) mixed varieties. Of these Professor Oppenheim directed special attention to the cervical type, which was characterised by pains and paræsthesiæ in the upper extremities, usually of unequal distribution, with little objective loss of sensibility, not infrequently with astereognosis and with some ataxia and some slight paresis. This last symptom might be awanting. Reference was made to certain cases under the author's own observation. In the latter case there were (*a*) the spastic type (lateral columns of the cord); (*b*) spastic-ataxic type (postero-lateral combined type); (*c*) ataxic type—so called pseudo-tabes sclerotica; (*d*) anterior poliomyelitis type; (*e*) syringomyelia type; (*f*) amyotrophic lateral sclerosis type; and (*g*) transverse myelitis type. Special attention was drawn to the importance of the (*c*) type, which in a number of ways resembled tabes dorsalis. II. Of the main cerebral type there were several sub-varieties, viz.: 1. Cerebral in the strict sense—(*a*) hemiplegic type; (*b*) pseudo-bulbar type; and (*c*) dementia sclerotica. Professor Oppenheim said that many cases of advanced disseminated sclerosis showed a varying degree of general mental enfeeblement, but actual insanity was very rare. 2. Basal type. 3. Ponto-bulbar type. 4. Cerebellar type. Instances of these were given. Their importance was considerable, for some resembled cases of encephalitis and others intracranial tumour. III. The cerebro-spinal type was the classical type of Charcot. IV. The optic or ocular type formed a class almost by itself, as ocular symptoms might be present literally for years before any other symptoms establish themselves. An instance was given where transient amaurosis and diplopia, occurring in 1895, were not followed by any systemic symptom till 1910. Objection might be made that these varying types were not so much "types" as "modes of onset," but it was a well-known fact that the disease tended to recur in sites which had previously been affected, and from the point of view of diagnosis it was important to be familiar with them all.

Dr. J. S. RISIEN RUSSELL (London) said the Section was greatly indebted to Professor Oppenheim for his masterly description of the varieties of the disease. Dr. Russell said that in his opinion, notwithstanding the multiplicity of the types, it was impossible to reduce their number. He felt that several of them were very rare in this country as far as his experience went, but he agreed on the necessity of recognising them. The pseudo-tabes variety in particular was important, but he thought the absence of definite pupil reflex changes was an aid in differential diagnosis. He asked Professor Oppenheim whether he had ever noted the Argyll Robertson pupil in pseudo-tabes sclerotica. He also remarked on the difficulty of distinguishing between disseminated myelitis and cases of disseminated sclerosis which began as a transverse myelitis type, eventually becoming typically disseminated. Dr. Russell thought it most important to recognise the cerebellar type and the spastic or spastic ataxic type, for such cases, if incorrectly diagnosed, might be needlessly operated on, inasmuch as in some ways they resembled cerebellar tumours and spinal tumours or pachymeningitis respectively.

Dr. F. E. BATTEN (London) thought some of the types so rare in his experience that he was inclined to question the advisability of describing them separately, notably the cervical type. He, too, emphasised the necessity of full knowledge of the cerebellar type, and agreed as to the readiness with which such cases might be confused with cerebellar tumours. In view of the frequency with which islets of sclerosis were found in the cortex of advanced cases, it struck him as curious that the mental symptoms were, comparatively speaking, unimportant. He had never seen insanity in disseminated sclerosis, nor had he seen a case in anyone younger than 14 years.

Professor J. J. PUTNAM (Harvard University, U.S.A.) had never seen actual dementia in disseminated sclerosis. He remarked that the types of the disease were very much the same in all parts of the world, but the frequency of the disease in different localities seemed to vary considerably. Thus it appeared to be more common in Boston than in New York.

Professor E. BONDURANT (University of Alabama, U.S.A.) referred to the difficulty occasionally experienced in diagnosing between disseminated sclerosis and general paralysis.

Dr. JUDSON S. BURY (Manchester) said the spinal type of spastic paresis was pre-eminently the type found in the

Manchester district. In uncomplicated spastic cases occurring in the adult the possibility of disseminated sclerosis was always to be considered. The spasticity was in advance of the paresis. The chief, and in fact the only, muscular group affected—and perhaps only very slightly—was the flexors of the hip. This fact was useful in differential diagnosis. He referred to a remarkable case in which the symptoms of disseminated sclerosis, which had been well marked, disappeared after an attack of small-pox.

Dr. R. T. WILLIAMSON (Manchester) also referred to the frequency of the spastic paresis type, in which he had found, as a rule, that while most varieties of sensibility were intact, pallæsthesia, or the vibration sense, was often considerably impaired in the lower extremities.

Mr. W. J. MIDELTON (Bournemouth) and Dr. DAVID BLAIR (Lancaster County Asylum) continued the discussion.

Dr. F. W. MOTT (London) said that in 2000 necropsies on patients suffering from mental disease he had found only one case of disseminated sclerosis.

Dr. E. HOBHOUSE (Brighton) also spoke.

The PRESIDENT said that in 21 years' continuous asylum experience he had never seen a single case.

Professor OPPENHEIM, in his reply, said that the rarity of any given type was no reason for omitting it from the classification. He felt that the diagnostician and clinician ought to be familiar with the different types, and all were equally important.

OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, JULY 26TH.

President, Professor EDWARD MALINS (Birmingham).

The PRESIDENT, in opening the proceedings, said that in the department which the Section represented progress had been well maintained during the course of the past year. Much had been done in various directions, and more especially in seeking to lessen the mortality of childbirth and to diminish the amount of illness attendant upon it. It had been stated that in the special departments for diseases of women at least one-third of all cases were supplied by puerperal morbidity, and he urged the profession to consider the seriousness of such an indictment and to use all its powers to prevent such evils. The President then referred to the importance of the Midwives Act of 1902 and the great value of the Bill to the community. At the present time 31,625 names are on the Midwives Roll, of which 10,108 have passed the required examination, and another 10,000 hold certificates from other licensing bodies. Such women have all been taught the importance of rigid asepsis and the intelligent observation of the thermometer and pulse. Attention was then drawn to the difference in mortality and morbidity between the results of hospital and of private practice, and inasmuch as the health of the women of a country was one of the chief assets of that country, the President observed that he was to some extent in favour of State-aided institutions. He mentioned the case of St. Petersburg, which is equipped with 15 municipal maternity homes. In that city, in the year 1909, 19,000 cases were admitted to the hospitals with only a fractional percentage mortality. In fact, 41·9 per cent. of all maternity cases in St. Petersburg are conducted in the municipal clinics. The President paid a high tribute to the work of Sir James Simpson, whose centenary had only recently been celebrated.

Dr. C. HUBERT ROBERTS (London) read a paper on

Eclampsia occurring in Labour in a Girl aged 12; Recovery of Mother and Child.

Dr. Roberts gave a complete clinical account of a case of eclampsia occurring in a Jewess, aged 12, admitted to Queen Charlotte's Hospital on April 2nd, 1911, in labour at the end of the ninth month of her pregnancy. The girl was of medium height and weighed 8 st. 9 lb. Her pelvic measurements were as follows: interspinous, 9¼ in.; intercristal, 10¼ in.; external conjugate, 6¾ in. Considerable œdema of both lower extremities was present, but œdema of the face, arms, &c., was absent. A purulent vaginal discharge was present. The urine showed a large quantity of albumin (two-thirds on boiling). On admission the patient was in a very excitable and uncontrollable condition, and in the afternoon of the day following admission a typical eclamptic convulsion occurred. The child presented in the left occipito-posterior position and the membranes had not ruptured. Treatment was instituted by rectal salines, morphine injections, and hot packs. Labour was prolonged, but eventually rotation occurred and delivery was effected by forceps in the left occipito-anterior position. About 18 ounces of blood were lost during delivery of the placenta. The labour occupied in all 69¼ hours. Shortly after delivery a very severe eclamptic convulsion occurred. Other typical eclamptic seizures followed and the patient passed into a condition of deep coma with a rapid, feeble pulse. Gastric lavage with a solution of sodium bicarbonate was performed and castor oil (2 oz.) was introduced into the stomach. The condition became aggravated in spite of all treatment until April 6th, when the patient was conscious for the first time. Convalescence from this moment was steady and maintained, and on April 18th the urine exhibited only the faintest trace of albumin. The temperature at the height of the attack showed pyrexia of 105° F. The patient left the hospital on the twenty-eighth day in good health, with a fine healthy baby. Dr. Roberts drew attention to the rarity of eclampsia at this early age and to the seriousness of the condition. As far as mere labour in very young subjects was concerned, he thought that the cases usually ended well and that the children, as a rule, were well developed. As regards treatment, he relied chiefly upon purgatives, the use of chloroform narcosis, and saline infusion following venesection. He also had considerable faith in early lavage of the stomach, high slow rectal salines, and the employment of glucose enemata. Morphine and hyoscine subcutaneous injections were useful to check the convulsions, but should not be used if the urine was diminished in quantity. He did not think that the question of induction of labour was an important one, as most cases were met with at the onset of labour itself. Should it be necessary, he advocated the use of Hegar's dilators and the de Ribes bag, and did not think that Cæsarean section should be practised. He noted that the mortality of Cæsarean section for this condition is as much as 55–58·9 per cent.

Dr. THOMAS WILSON (Birmingham) thought that in cases of eclampsia there was at present a large element of luck as to the ultimate result. The cases that at first appeared mild often developed serious complications and the patients died, whilst not infrequently women *in extremis* would suddenly recover. He further asked why the prognosis should vary in different countries or parts of a country. At the Birmingham Maternity Hospital the mortality over several years registered 33 per cent., whilst Stroganoff at St. Petersburg quoted a mortality of 5 per cent. over a series of 200 cases. Does this mean that the treatment at St. Petersburg is more efficacious, or that the disease there falls under a different category? As regards treatment he certainly thought that induction of labour should be considered, and for the spasms he relied upon chloroform and morphine. He thought that the urine was of little value in prognosis unless absolute suppression was present, and he considered that an examination of the urine during the later months of pregnancy had no great value in foretelling the incidence of eclamptic convulsions.

Dr. HERBERT R. SPENCER (London) was in agreement with the views expressed by Dr. Wilson as to the difficulty in prognosis with eclampsia. His first 13 cases had all recovered, but this success was marred by later cases, which had not terminated so happily. He referred to the presence of abdominal pain associated with œdema of the extremities as of some value in foretelling the incidence of convulsions. As regards treatment, he somewhat doubted the efficacy of infusions.

Dr. J. B. HELLIER (Leeds) now advocated a purely expectant method of treatment and deprecated resort to such means as abdominal section and dilatation by Bossi's instrument. He referred to the risks of repeated pregnancies in eclamptic patients, but a study of statistics had shown him that these risks were not always as bad as they had been stated.

Dr. JOHN CAMPBELL (Belfast) said that when convulsions were present he always administered morphine, ruptured the membranes if labour had not commenced, and then conducted a purely expectant method of treatment. He thought that examination of the urine during the later months of pregnancy was a distinct asset in foretelling the onset of eclampsia. So many women suffer from transient œdema of the extremities in the later months of pregnancy

that unless albuminuria is present as well, little faith can be placed upon the former.

Professor PAUL STRASSMANN (Berlin) referred to the frequency of vaginal Cæsarean section in Germany in the treatment of eclampsia. He cited especially the work of Bumm and Krönig. The latter also practises renal decapsulation. As an explanation of the varying results obtained in eclamptic patients, he suggested that seasonal conditions may have a distinct bearing. Certainly in Berlin the mortality and incidence varied at different periods of the year. Cases were more frequent in March and April, and coincided with the incidence of bronchitic and other similar affections. He thought that the kidneys may be more susceptible to the toxins at these periods. He could offer no suggestions as to the ultimate prognosis in any given case of eclampsia.

Dr. R. C. BUIST (Dundee) emphasised the importance of employing the results of large clinics in estimating the value of any particular treatment. He had seen good results follow renal decapsulation.

A New Form of Vaginal Speculum.

Dr. HUBERT ROBERTS exhibited a modification of Sims's duck-bill speculum fitted with a flange to the upper blade (see p. 366, where the instrument is fully described).

Sir FRANCIS CHAMPNEYS (London), after apologising for his delay in reaching the section on account of an accident to his train from London, opened a discussion on

The Pathology and Treatment of Asphyxia Neonatorum.

He first discussed the causes of the first breath, and divided these into two groups, viz.: (1) predisposing, and (2) exciting. Of the predisposing causes, the essential factors are canalisation of the cervical canal and diminution in size of the placental site, with its associated diminution in the blood-supply and aeration of blood to the fœtus. This is very pronounced at the birth of the child. Not infrequently a child may not breathe for several minutes after birth, and yet if kept warm is in no danger. It is in reality breathing still through the placenta. Of the exciting causes the impact of cold air is the most important. Reference was made to breech cases, where the child is deprived of both methods of respiration—viz., pulmonary and placental. The speaker recognised two stages of asphyxia—viz., (1) apoplectic, where the child is livid, the muscular tone is not lost and it responds to reflex stimulation; and (2) syncopal, where the child is pale and flabby, muscular tone is lost and there is no response to any reflex. These latter are the serious cases and may be due to pressure upon the brain. Reference was then made to the inspiration of mucus. Before breath is taken all the air spaces are closed. When respiration takes place, lanugo, meconium, &c., may even reach to the pleura. Such cases usually die from a low form of pneumonia. With regard to treatment Sir Francis Champneys emphasised the important difference that exists between "blue" and "white" asphyxia. He discussed the subject under the following headings: (1) The removal of all foreign bodies from the respiratory tract; (2) means to secure the patency of the air-passages; (3) stimulation of the circulation; and (4) means to procure thorough ventilation of the lungs. To effect the first object he recommended that the child be placed on its back, the head extended, and the trachea gently stroked upwards, a finger being placed at the orifice of the trachea. Patency of the air passages may be secured by the passage of a catheter. The circulation may be stimulated by pressure over the præcordium. The importance of friction over the spine was also emphasised. Ventilation of the lungs might be procured by the time-honoured methods of Silvester or Schultze. The speaker asked the members to note that the normal position of rest in the child's thorax was one of expiration. If Silvester's method was adopted, the arms should be everted and seized above the elbows. Schultze's method had the disadvantage of possibly causing internal lesions, but it certainly might procure patency of the air-passages when other methods failed. Furthermore, it procured descent of the diaphragm as in normal respiration. The method should be carried out properly if at all, and Sir Francis Champneys insisted upon the importance of simply steadying the child's body and *not* grasping it. Of other methods, reference was made to insufflation and rhythmic tongue traction. In conclusion, the speaker urged his hearers: (1) Never to hurry; (2) to employ sound judgment as to whether the case is one of pale asphyxia or true death; and (3) to persist in treatment over a sufficient length of time.

Dr. SPENCER observed that in his opinion the shock and anæmia of the "syncopal" type of asphyxia were in reality due quite frequently to visceral injury produced during birth. This he had shown by post-mortem examination. He quite agreed that spinal friction was a valuable asset in treatment. He also placed considerable reliance upon intratracheal catheterisation. He condemned Schultze's method of artificial respiration as distinctly dangerous. The use of oxygen had given good results in his hands.

Dr. HELLIER considered that Schultze's method was dangerous in the extreme. He advocated the teaching to midwives of Silvester's method only.

Dr. WILSON professed himself as a great advocate of the warm bath, and if some method of artificial respiration that could be carried out in the bath was devised he thought that it would have a wide application.

Dr. ROBERTS drew attention to the asphyxia of children after Cæsarean section, and observed that this could not be due to interference with the placental circulation as it was immediately under the eye of the obstetrician. He agreed with Dr. Wilson as to the importance of the warm bath.

Dr. BUIST demonstrated his application of Schultze's method of artificial respiration, and said that if this was properly carried out no great force was required, and that many of the so-called "dangers" disappeared.

Professor STRASSMANN said that when Schultze's method was properly performed a distinct wheezing inspiration was audible.

ODONTOLOGY.

WEDNESDAY, JULY 26TH.

President, Professor FRANK EARLE HUXLEY (Birmingham).

The PRESIDENT having welcomed the visitors and given a brief outline of the programme of the section,

Mr. R. J. ERSKINE YOUNG (Liverpool) opened a discussion on

Dental Diseases from the Physician's Standpoint.

He said that oral sepsis struck at the very root of national health, giving rise to septic anæmia and other constitutional disorders. Appendicitis might be due to oral sepsis through a carious condition of the teeth; tuberculosis, too, might gain an entrance to the system through the exposed pulps of carious molars. He pleaded for a better education of the people on this matter through the medium of the intelligence and sympathy of the daily press. Preventive dentistry was all-important. There was a necessity for legislation regarding the use of local anæsthetics, and a greater knowledge and interest on the part of medical men in connexion with conditions of the mouth which gave rise to severe constitutional disturbances. He narrated his personal experiences as a dental officer in Liverpool.

Sir VICTOR HORSLEY (London) considered that it was through the Section of Odontology that the British Medical Association could speak to the great British public. In London 750,000 children required dental attention and treatment. This could only be gained by the establishment of school clinics. A forward movement on the part of the British Dental Association was required for the enlightenment of the school clinics committees. Dental treatment meant the inauguration and equipment of at least 100 clinics in London. It was the most important national question of the day. He thought that the section should pass at its closing meeting a resolution dealing with the matter, and considered that there should be a closer coöperation between the professions of medicine and of dental surgery.

Mr. C. E. WALLIS (London) dwelt on the need for the conversion and instruction of the members of the education committee of the London County Council, and advocated the delivery of lectures to members of that committee, to parents, and to members of the medical profession.

Mr. H. R. F. BROOKS (Banbury) spoke of the financial difficulties connected with the work, and believed that the solution would be found in State dentistry. The principles of the National Insurance Bill now before Parliament should be extended to the dental side of the question.

Mr. YOUNG replied.

A paper entitled

Dentistry and the Public

was read by Mr. CYRIL HOWKINS (Birmingham), who emphasised the necessity of the elementary school children receiving early dental attention. This was called for from three directions: (1) the general physique of the child; (2) the educational standpoint; and (3) the future of the individual. The after-history of over 3000 children of Birmingham showed that the general physique and health of a child vastly improved after dental treatment. The child was also brighter and got on better at lessons, and rarely stayed away from school from a dental cause. The future of a child who was dentally well equipped on leaving school must be far better than one who laboured from the disadvantages and dangers of oral sepsis. Regarding cost, this might be divided into two parts—capital outlay and annual expenses. The former depended upon different circumstances; roughly, however, about £75 should equip a small house as a school dental clinic. The annual expenditure would be about £450 a year, including £300 stipend for the dentist. The remaining £150 would cover rent, rates, taxes, payment of caretaker, gas, fuel, water, dental materials, &c. From the statistics worked out from the Birmingham dental clinic it appeared that about 3000 children might be attended to every year by a full-time dentist. Mr. Howkins thought that six hours a day was as long as one dentist could conveniently work as a rule on account of the difficulty of dealing with young children.

Mr. W. BOWATER (Birmingham), Mr. HAROLD ROUND (Birmingham), Mr. R. W. CLAYTON COOPER (Birmingham), and Mr. YOUNG joined in the discussion.

Mr. HERBERT SMALE (London) and Dr. D. W. CARMALT JONES (London) contributed a joint paper on

The Bacteriology of the Tooth-brush.

They said that a tooth-brush became septic after once using, each hair becoming an inoculation needle, and the person using it might be vaccinated with such germs as flourish upon it. It might be the origin of pyorrhœa alveolaris with its attendant sequelæ of anæmia, gastritis, arthritis, &c. Tooth powders and pastes as usually used did not render the tooth-brush aseptic, 1 in 20 of carbolic acid not being an effectual germicide. All tooth-brushes should be boiled for five minutes before and after use. A new tooth-brush could be used each day, penny ones sold at penny bazaars being good enough for the purpose. Trikresol (1 per cent.) should be used for rinsing the brush, which should be allowed to stand, when not in use, in 10 per cent. formalin solution. A thin quill tooth-pick and floss silk for the removal of the scurf of Leuwenhoeck were essential for cleanliness. No means had suggested themselves of rendering the mouth an aseptic cavity, nor had any profound disappointment been excited on that account. But, a septic cavity notwithstanding, it is undesirable to use a septic instrument for the scarification of the gums, thereby forcibly driving septic micro-organisms into the tissues at the point of the bayonet. It would seem that the use of 1 per cent. trikresol was a simple and accessible method of rendering the tooth-brush free from the commoner pathogenic organisms. The experiments carried out for this paper seemed to lead to the foregoing conclusions.

The PRESIDENT took part in the ensuing discussion, which was continued by Mr. DOUGLAS P. GABELL (London), who strongly deprecated the use of an antiseptic spray in the mouth.

Mr. A. HOPEWELL-SMITH (London) said that india-rubber tooth-brushes were to be obtained which could be thoroughly cleansed at once by washing under a stream of water, and possessed no properties of retaining bacteria on their surfaces. If the bristles of ordinary brushes carried such numbers of bacillary colonies as had been mentioned, their sockets in the tooth-brush itself must be still more numerously and dangerously infected. Mechanical cleansing only of the mouth, he asserted, was necessary in ordinary circumstances, and antiseptic mouth-baths, pastes, &c., never required except in the case of diseased conditions of the mouth and after operations on the jaws. The weak antiseptics found in mouth-baths were of no value whatever in destroying the action of pathogenic micro-organisms in the oral cavity.

Mr. A. W. WELLINGS (Birmingham) described with Mr. C. W. RANDALL (Birmingham) a case of a patient with

Hypertrophy of the Gingival and Alveolar Margins of the Jaws associated with Pyorrhœa Alveolaris.

The patient was exhibited and examined by members. Radiographs and other lantern slides were shown in illustration of the case.

Mr. HOPEWELL-SMITH inquired if sections of the tissues had been cut and examined microscopically; if so, what they showed, and if the Saccharomyces mycoderma was present? It had been affirmed by an American author (Roe) that this bacterium was the cause of the disease. He thought that the species of bacteria, photomicrographs of which had been thrown on the screen, appeared to be the usual pathogenic and pyogenic organisms associated with diseases of the gums and alveolar processes of the jaws.

The discussion was continued by Mr. GABELL, the PRESIDENT, and Mr. J. E. PARROTT (Birmingham).

OPHTHALMOLOGY.

WEDNESDAY, JULY 26TH.

President, Mr. HENRY EALES (Birmingham).

The PRESIDENT said that he wished to give a hearty welcome to all those ophthalmologists who had favoured them with their presence. He was glad to see so many, and he ventured to think that their expectation of the presentation and discussion of a series of valuable papers was destined to be fulfilled.

Professor PRIESTLEY SMITH (Birmingham) opened a discussion on

The Operative Treatment of Glaucoma.

He said that at the outset he would put certain questions to them as an indication of the lines upon which his paper would run. Ought they to depart from the time-honoured operation of iridectomy of von Graefe in the treatment of glaucoma? And, if so, what other and new operation should replace it? The purpose of operation he held to be the establishment of the filtration of the accumulated fluid within the eye; either normal filtration should be restored, or abnormal filtration should be set up. Experience had shown that the area of their operation was strictly limited. It must be at the site of normal filtration. Posterior sclerotomy, posterior trephining, and tapping the anterior chamber were all proved to be only temporary means of reducing tension. That being so, the anatomical characters and variations of the site of operation became important. He showed that the extent to which the limbus overlapped the filtration angle differed in different persons, and also in the same eye, for the overlapping was more marked above and below than laterally. Also the relation of the lens to the circumlental space varied; even with the same sized lenses it was larger in some eyes than in others. If this were so in normal health, it must be even more marked in congestive glaucoma. With the aid of a series of lantern slides of sections of healthy and glaucomatous eyes he illustrated these points. Considering operative measures, he held that the object of iridectomy was the restoration of the normal outlet of the aqueous, and the clinical manifestations were that this was secured in the greater number of cases of acute glaucoma. There were a few such cases in which happy results were not secured, and they were accustomed to describe this as "malignant" glaucoma, a convenient cover for a disastrous result. In his experience posterior scleral puncture preceding the operation for iridectomy was a most beneficial proceeding; it slackened the tension of the eye, lessened the risks of the sudden loss of tension at the moment of the larger incision into the globe, and it in no wise increased the difficulty of the iridectomy. In other conditions, or in such cases where they had failed to restore the normal outlet of the aqueous, they must look to the production of artificial outlets, "cistoid scars"; of these conditions chronic glaucoma was the most important. In congestive attacks it was possible to reopen a freshly blocked filtration angle, but in chronic glaucoma there were adhesions, perhaps sclerosis, so a normal track was impossible. The possibility of securing abnormal filtration routes was not a new idea—it had been recognised by de Wecker; in recent years most valuable work had been done by Herbert, Lagrange, Elliot, and Fergus in

the systematic production of such abnormal routes for filtration. These results had placed within their hands a series of excellently conceived and well-established operations from which it was possible for them to make choice. His own experience had been confined to Herbert's original "wedge" operation, a modified sclerectomy, and in his experience it was all that could be desired, the results were most satisfactory and the failures few. For early acute glaucoma he still thought that iridectomy was a good and successful operation; he did not like the idea of trephining down upon the swollen base of the iris and turgid ciliary processes. But for chronic cases he thought these new modes for the production of an artificial route of filtration excellently designed, and in their effects superior to iridectomy.

Major R. H. ELLIOT, I.M.S., followed with a paper entitled

Observations on Trephining the Sclera.

The simple trephining operation he advocated had now been performed in 403 cases in Madras. By this means they established a direct entry into the anterior chamber with the least possible disturbance of the iris and surrounding tissues. He was in the habit of turning forward a large conjunctival flap and continuing the dissection so as to split the cornea for the depth of 1 mm.; then the trephine was used to cut out a small disc, half cornea and half sclera, from the margin of the limbus. In his experience a trephine 2 mm. in diameter was the best. Care must be taken not to buttonhole the conjunctival flap. As regards the risks of the operation, the disc might fall into the anterior chamber if too much force were used; in his experience the accident did not matter, and it was unwise to seek to remove the lost disc. In 5 per cent. of his cases there had been escape of vitreous, 16 of them in desperately bad eyes where every risk was intensified. In nearly 50 per cent. of cases iridectomy had been done conjointly with the trephining. In some cases this procedure had been followed because the iris tended to advance into the hole, but that was not always so. For secondary prolapse iridectomy had been done in seven cases. He was disposed to perform iridectomy in most cases merely as a mechanical safeguard, and not as enhancing the effects of the operation. He then showed by means of diagrams the different effects of the trephining, according as the state of the angle of the anterior chamber and the position of the root of the iris varied. In conclusion, he maintained that granting the necessity for removing a piece of the sclera to establish filtration or filtering scars, trephining was the simplest and best operation.

Dr. J. GRAY CLEGG (Manchester) continued with a paper entitled,

Observations on Trephining the Sclera.

In recent years he had done several operations other than iridectomy for chronic and acute glaucoma, such as Gayet's, Herbert's wedge operation, and Lagrange's operation, but with only moderate success. The reaction from these operations was rather violent, and there was some uncertainty of the size of the sclerectomy in the last-named operation. Succeeding these operations he had performed trephining 23 times with the most satisfactory results, and he considered this operation suitable for all types of primary glaucoma. The improvement obtained in visual acuity was striking, such a change as the restoration of 6/6 vision after it had been reduced to "fingers" was not rare. As to the risks of the operation, he had found few: there had been no escape of vitreous; prolapse of the iris at the moment of trephining had occurred four times, necessitating iridectomy; there had been secondary bulging of the iris once, and of the ciliary body twice.

Mr. C. DEVEREUX MARSHALL (London) said that in his experience malignant glaucoma did not occur if preliminary posterior sclerotomy was performed. For acute glaucoma his inclination was distinctly in favour of iridectomy in preference to any other operation; it had stood the test of time in the way no other operation had, and its results were uniform and good. He had performed Herbert's small-flap sclerotomy many times and with most satisfactory results; but whilst admitting that freely, they had yet to wait to ascertain the permanency of its effects. Trephining he had no experience of, but the results advanced by Major Elliot were good reasons for utilising the method.

Mr. THOMSON HENDERSON (Nottingham) said that their practice must be based upon a rational physiology; the success of iridectomy as a means of relieving tension was established, but it was originally an empirical procedure, and it remained for them to put it upon a rational basis. That basis could only be done by an investigation of the circulatory conditions of the eye, such as he had indicated in his experiments and the deductions therefrom, and the experiments upon cerebral and ocular circulation by Dr. Leonard Hill.

Mr. H. HERBERT (Nottingham), discussing the appearance of scars after iridectomy for glaucoma, said that only those scars which were invisible, or nearly so, could with safety be asserted as solidly knit scars. It was possible in almost all other scars to show that over them there was an abnormal conjunctival œdema—i.e., that there was filtration from the eye through the scar into the subconjunctival tissue. He showed a section of a "small-flap" wound in which the scar was partly filled with loose fibro-cellular tissue and in which serial sections had proved the absence of any fistula, yet in that eye there had been œdema over the scar. It was confessedly easy to obtain a reduction of tension in an eye by cutting widely into the sclera, but the defect of that procedure was the want of control in the degree of reduction, the eyes tended to get soft. The question was how could they best secure control over filtration, by sclerotomy or sclerectomy? He thought by sclerotomy. As yet the method was in its infancy and its possibilities had been imperfectly explored. For instance, numerous modifications of the small-flap operation at once suggested themselves should variation prove necessary. In hard, blind eyes sclerotomy at present often proved efficient only in removing pain, the tension being imperfectly reduced at least for a time. And there were a few secondary glaucomas in which the need of freer filtration was obvious.

Mr. F. RICHARDSON CROSS (Bristol) said that without question physiology and pathology must be at the basis of their conception of treatment. In his view the work of Weber and that of Priestley Smith had established the primary facts of the importance of the filtration angle; and whilst he congratulated Mr. Henderson on his work and hoped he would continue it, as yet he could not say his faith in the older theories was disturbed. In acute glaucoma there could be no question that iridectomy was the best operation, and that operation was the only treatment. Chronic glaucoma was a different condition; the most perfect iridectomy might fail to relieve the tension permanently. He had always tried to make his incision a long shelving one, commencing, say, 2 mm. back from the limbus. In a number of cases of hydrophthalmos he had had remarkably successful results by doing Herbert's small flap sclerotomy with Bishop Harman's "twin scissors," and he was of opinion that for these cases it was preferable to iridectomy. As a rule, he should continue to do iridectomy in simple and chronic glaucoma, as well as in acute cases; but should tension recur he should use the sclerotome, preferably Bishop Harman's.

Dr. ADOLPH BRONNER (Bradford) said he had tried various methods of operating for glaucoma. In acute and subacute conditions he performed posterior sclerotomy first, if possible, and then iridectomy. If tension recurred he used the trephine. In chronic cases he still preferred iridectomy, except in cases of arterio-sclerosis with increased blood pressure in feeble and nervous patients—then he trephined. He showed a modified form of trephine which he found convenient in use; it had an outer sheath which steadied the trephine in boring and prevented wobble.

Mr. N. BISHOP HARMAN (London) said no speaker had as yet considered the various merits of these operations from the patient's point of view. Granting for the sake of argument equal value in iridectomy, sclerotomy, and sclerectomy, which operation was most commendable from the point of view of the patient's general condition? For acute glaucoma he believed in a wide iridectomy; the condition was severe, and demanded an operation which even though severe was undoubtedly reliable. In chronic glaucoma the case, although serious enough, did not present so formidable an aspect to the patient's mind. The loss of vision might be small or only occasional, even the field might be but little affected; in such a case an iridectomy, with the necessarily wide laying open the eyeball, strict confinement in bed for at least a week, the certainty of considerable resultant astigmatism, presented no attractive prospect. The confinement in bed alone was a serious item in old folk with feeble hearts

and circulations, and there is no doubt these considerations had deterred not a few surgeons from advising operation in times past and had favoured the use of miotics. Contrast with the risks of iridectomy the simplicity of the procedure in Herbert's operation, the one with which he was familiar—the advantages were manifest. There need be no pain at the operation; the risk of injury to the eye was the smallest; he had no hesitation in permitting patients to sit up in bed the day after the operation, so that the disturbance of an old person's condition was the least possible; very little, sometimes no, astigmatism was caused by the operation; and lastly, in the event of a failure to secure a permanent lowering of tension it was easy to repeat the operation, indeed, he proposed this week to do a third operation upon a patient in whose eyes the benefit of the previous operations had not been maintained. This particular case was of interest; the man's sclerotics were extraordinarily tough and gristly, so that the flap produced had very little pliability. He thought that in such cases the tip of the flap should be excised, as had been suggested by Herbert. The differences of the texture of the sclerotic and its effects upon operative procedure were worth considering.

Mr. W. H. H. JESSOP (London) said that the discussion was one of the greatest importance. He considered there were great differences in acute and chronic glaucoma. In acute the large peripheral iridectomy, preceded, if necessary, by a posterior scleral puncture, was the proper procedure. In chronic glaucoma iridectomy was frequently of little use and even dangerous, and it was in these cases he now performed Herbert's sclerotomy in preference to that of Lagrange. He had no experience of trephining, but intended to try it.

Mr. CHARLES WRAY (Croydon) said that, admitting all that was claimed for the new operations to be true, his early experience of operations in chronic glaucoma left him credulous of the advantages of operation over the continued use of miotics. He had cases which had maintained their stand for 15 to 30 years, and that without risks, such as soft eyes and detached retina.

Dr. T. HARRISON BUTLER (Coventry) had tried Elliot's operation with satisfactory results. He had had difficulty in getting trephines that would cut; so far Freeland Fergus's had proved the best. He had had difficulty by reason of the disc of tissue falling into the anterior chamber. One point he thought should be called attention to, and that was the grave risk attaching to operations upon eyes in which the periphery of the field approached the fixation spot; operation might secure permanent fall of tension, but it was liable to cause loss of macular vision. On the matter of the circulation of the eye, it was interesting to note that a recent German author had brought forward a series of observations upon which he based the thesis that there was no interocular circulation! Then there were the observations of Professor Arthur Thomson, which indicated that circulation might be limited to the small pump-like action of the scleral spur.

Mr. J. JAMESON EVANS (Birmingham) said he had looked up the hospital notes of the last two or three years' cases of glaucoma. He found 9 acute and 3 absolute cases, for all of which iridectomy was performed; 5 subacute and 33 chronic cases, for which filtration operations were done, half Herbert's wedge, and the other half trephining. His general conclusions were in favour of iridectomy for acute glaucoma and trephining with or without iridectomy for chronic cases. Trephining was, in his experience, the easiest operation and caused the least reaction; it was easy to repeat, and it caused no disfigurement.

Mr. WILFRID ALLPORT (Birmingham) had performed 40 operations after the fashion of Herbert's wedge-operation, mostly in chronic cases, with excellent results in every case. For acute glaucoma no scleral operation was so satisfactory as scleral puncture followed by wide iridectomy.

Mr. JOHN HERN (Darlington) said that were he to put himself in the position of the patient, as suggested by Mr. Harman, he would certainly prefer a wide peripheral iridectomy for acute or chronic glaucoma in preference to any of the newer scleral operations. With the incision placed well back in the sclera, as had been described by Mr. Cross, there was the best guarantee of success.

Dr. A. F. MACCALLAN (Cairo) said the condition of the iris should determine our choice of operation. If the iris was atrophied, then the possibilities of absorption were diminished, so that something else than iridectomy was required.

Mr. CLAUD A. WORTH (London) said in his view atrophy of the iris was not so important as the possibility of the existence of adhesions of the iris at the filtration angle; where these existed iridectomy was almost certain to fail.

Dr. H. SECKER WALKER (Leeds) said that for acute glaucoma he believed in iridectomy, but he had no faith in it for chronic glaucoma. He got better results with Lagrange's operation than with iridectomy, and better still with Herbert's operation. The small flap operation he found comparatively easy to do, quite painless, it gave excellent results, and it could be repeated in case of only partial success.

The PRESIDENT recalled the days when cocaine was unknown, and how on occasions they had to perform iridectomy in acute glaucoma without even a general anæsthetic; once he operated on both eyes at one time.

Major ELLIOT, in reply, maintained that the success of iridectomy lay mainly in the procuring filtration through the scar. This could be determined quite easily when it was specifically looked for; it was as easy to find as pitting of the shins in œdema of the legs. He advocated trephining for acute as well as for chronic glaucoma; he maintained that it was a safe proceeding, which iridectomy was not. It was not necessary to perform scleral puncture to make it safe or enable it to be performed, as had been acknowledged by some speakers. In fact, the harder the eye the easier the trephining, and there was no risk with ordinary care that the aqueous would escape too rapidly. The occurrence of quiet iritis had been referred to; it certainly followed trephining, though he doubted if it was true iritis, but it could be prevented by the routine use of atropine on the third day. Iridectomy he held advisable in trephining, but merely for its mechanical effects. As to the discussion between Herbert and himself, it came to this: Herbert considered trephining did too much, whilst he (Elliot) thought sclerotomy did too little. He could confirm Mr. Harman's observations concerning the differences in the texture of the sclera of patients.

Dr. CLEGG, in reply, considered trephining good and safe for acute glaucoma, and instanced his four successful cases.

Mr. PRIESTLEY SMITH, in reply, said he had a great admiration for Mr. Henderson's work, but could not follow him in his conclusions that cerebral and ocular pressures were always the same. Did he mean that when ocular pressure was thrice what it ought to be the brain was subjected to a similar excess pressure and without any symptoms? The problem they had to consider was how to secure a filtration scar that would be the best for the majority of cases. Lagrange, Elliot, and Fergus removed pieces of the sclera; Herbert displaced a piece. The apparent test was the production of œdema. The true test was not apparent œdema, nor the tension, nor visual acuity, but the field of vision as mapped with the perimeter.

PATHOLOGY.

WEDNESDAY, JULY 26TH.

President, Professor R. FRASER CALDER LEITH (Birmingham).

The PRESIDENT, after a few words of introduction, mentioned with regret that Professor Charles Richet was unable to be present, and as he had not sent his paper the following abstract was read: 1. The penetration into the blood of a heterogeneous (= native) albumin—that is, of one not altered by digestive processes—produces a special state of hypersensibility to this same albumin: this is anaphylaxia. 2. Anaphylaxia by digestive channels (or in other words alimentary anaphylaxia) is due to some ingested albumins not having been sufficiently elaborated by the digestive juices. 3. The anaphylactic state can only be explained by the presence in the blood of a special non-toxic substance, but capable of giving, with antigen, an extremely toxic one. This non-toxic substance is toxogenin. Its presence is proved by this, that on mixing the blood of an anaphylactic animal with the antigen one obtains a substance that is immediately toxic. 4. Once toxogenin has been formed in the blood, it disappears from it only very slowly, if even it does ever disappear, so that the anaphylactic state continues for weeks, months, or perhaps years. 5. The presence in the blood of a special toxogenin allows one to make for certain diseases a

diagnosis by anaphylaxis, but this requires scientific investigation, for up to the present the cases in which anaphylactic diagnosis is strict, as with tuberculin, are not numerous, but one may suppose that this method will be perfected. 6. One can combat the anaphylactic state by injections, repeated at frequent intervals, of very small quantities of antigen (anti-anaphylaxia). 7. All subsequent injections of serum or of antigen may produce serious accidents if the second injection is made more than ten days after the first. 8. Anaphylactic accidents affect the nervous system especially—for example, cardiac, vaso-motor, and respiratory. 9. "Idiosyncrasy" of the older writers can be explained in great part by previous anaphylaxis, in part by previously acquired immunities, and partly also by the inheritance of the anaphylaxes and immunities of their parents. 10. Anaphylaxia and immunity are not antagonistic. In many cases immunity and anaphylaxia march side by side after the injection of an antigen.

Dr. WALTER D'ESTE EMERY (London) then read his opening address on

Hypersensitiveness in its Various Manifestations, especially in Relation to Serum, Vaccines, and Tuberculin,

in which, after a brief historical introduction, he drew especial attention to the researches of Arthur on rabbits, in which the anaphylactic reaction to re-injection of serum was mainly local, and to those of Otto, Rosenau, and Anderson on the more sudden and dramatic effects of the injection of serum into a guinea-pig, previously sensitised by a small dose of the same substance, as being the starting points of our knowledge of anaphylaxis. Dr. Emery proceeded to outline the conditions necessary for the development of anaphylaxia. These are the presence of a foreign substance, probably always of protein nature, in the blood or tissues, and a certain incubation period. The incubation period varied according to the size of the sensitising dose, as a rule being from 10 to 15 days, but when large doses were used the period might be as long as 45 days. Dr. Emery mentioned that in Theobald Smith's phenomenon the reaction occasionally occurred in as short a time as half a minute. This depends on the rapidity of absorption, being most rapid in intracerebral injections, next in intraperitoneal and in subcutaneous injections. The possibility of anaphylaxis to non-protein substances, such as iodoform, was discussed, and the suggestion that these acted by splitting up the proteins of the body and thus giving off proteins which did not occur normally was adopted. As regards the symptoms which occur on re-inoculation in man, Dr. Emery pointed out that the symptoms resemble Arthur's phenomenon in rabbits rather than the intense shock which occurs in guinea-pigs, and that the differences in the phenomena might be caused by the rapidity with which the protein gained access to the brain, as shown by Baldwin in the case of tuberculoprotein. Dr. Emery remarked that all parts of the tissues were involved in anaphylactic shock. There were nervous, respiratory, circulatory, alimentary, and cutaneous symptoms. With regard to serum disease in man, he alluded to its connexion with asthma and its possible causation in some cases by previous sensitisation of the patient by eating horseflesh. Dr. Emery called special attention to the local reaction observed after repeated re-inoculation of serum at the same site of inoculation or in places in which previous injections had been made. He mentioned that there were no data as to the duration of the anaphylactic state in man. Periods of from one to nine years were known in guinea-pigs; in man it sometimes lasted as long as three years. In rabbits it generally lasted a matter of weeks. White mice were not susceptible. The anaphylactic condition could be avoided by: (1) giving series of injections at short intervals; (2) giving minute doses of antigen; (3) by heating the serum; (4) by anæsthetising the guinea-pig before inoculation; and (5) by giving doses of calcium chloride, &c. Dr. Emery believed in the beneficial effect of calcium chloride in preventing serum sickness. He also made brief reference to the rôle of anaphylaxis in general medicine in cases of food poisoning, susceptibility to certain drugs, &c., and in tuberculosis and other infective diseases.

Dr. SCOTT (London) then proceeded to discuss the source and probable nature of the anaphylactic poison. The poison responsible for symptoms of anaphylaxis, the anaphylactin in Friedberger, is regarded by him as being derived from the various antigens which are capable of setting up the supersensitive state, the hypothesis being that the complement acts as the antigen through the intermediation of an antibody, probably the ordinary amboceptor, precipitin, or lysin. The possibility that it is not the antigen but the amboceptor, normal or immune, which provides the poison must be considered in the light of the experiments of Keysser and Wassermann. These observers have prepared anaphylatoxin by digesting inorganic suspensions—kaolin and barium sulphate—with fresh guinea-pig serum. Here no antigen is present. Normal amboceptor is apparently the only substance capable of providing the toxin.

Professor G. SIMS WOODHEAD (Cambridge) continued the discussion. He stated that 15 years ago, when working with some diphtheria and other antisera, a batch of guinea-pigs which had been previously used all died from subsequent inoculation. In the light of recent work he now recognises that they were typical instances of anaphylaxis. Further, when working with "serum toxin" as introduced by Cartwright Wood, they sometimes gave injections of unheated serum toxin, and these injections were followed by complex symptoms which may be compared to Arthur's phenomenon, and he felt sure that they were producing local anaphylaxis. He agreed with Dr. Emery that the lytic changes in the cells and solid tissues must be taken into consideration, even though they might not be so important as those associated with the body fluids.

Professor A. S. F. GRÜNBAUM (Leeds) stated that in certain cases anaphylactic phenomena had appeared in man after the sixteenth or later injection of antituberculous serum in relatively large doses. This is not easily explained by current theories. Antitoxin itself did not play any part in the phenomenon of anaphylaxis, and he thinks that disease might modify the anaphylactic state. He quite agreed that keeping the serum diminished the amount of anaphylaxis. Was this the result of loss of complement? He suggested that the following facts require taking into account: (1) nature of disease; (2) age of serum; (3) probability of presence of toxin in the serum; and (4) possibility that repeated injections of serum acted like repeated injections of bacterial vaccine, and produced a negative phase.

Dr. GOODALL (London) asked Dr. Emery whether serum disease in man meant anaphylaxis. In his experience the usual result of giving serum in man was negative in about 70 per cent. of cases. Some got serum disease generally in from seven to nine days or up to three weeks. Sometimes symptoms came on immediately after the second injection, and again sometimes in a day or two. He drew attention to the frequency with which those who suffer from asthma get serum sickness. In fact, he would not advise anyone to have serum who suffered from asthma. He stated that he had seen serum sickness simulate measles very closely. He noted that patients suffering from diphtheria who got serum sickness did very well. Serum sickness, in his opinion, is less frequent now than formerly.

Dr. JAMES RITCHIE (Edinburgh) stated that he was anaphylactic to animals, and that the smell of such an animal as the horse gave him bad attacks of asthma. He had been exposed to the action of tetanus toxin, and as a result had injections of antitetanic serum. In about two hours he had an attack of asthma with severe urticaria. He would not again use antitoxic serum without considerable hesitation. He then detailed his work with Dr. Miller on the complement fixation test in tuberculous cases. The method he used was an elaborated Wassermann. His clinical experience went to prove that cases treated with tuberculin did better than untreated cases. Cases which gave the complement fixation test always proved to have multiple foci.

Dr. EMERY replied briefly to the questions asked, and stated that persons fed on raw horseflesh and the expressed juices always had serum sickness when tested with an injection of horse serum. He thought that probably there is more horseflesh eaten than is suspected. Boiling does not destroy its power of sensitising animals, though it destroys it sufficiently to make it impossible to test for it.

STATE MEDICINE AND INDUSTRIAL DISEASES.

WEDNESDAY, JULY 26th.

President, Professor ALFRED BOSTOCK HILL (Birmingham).

The PRESIDENT, in the course of his introductory remarks, said that in a public health sense, tuberculosis was the one pressing problem ready to be dealt with by every means in

their power. There was another point on which he thought a word not out of place. That was the marked change which had taken place both within and without the profession in the conception of State medicine and State hygiene. Intimately associated with the work of the hygienists was that of amelioration, in which all branches of the profession must take part if the national work was to be done satisfactorily. It was absolutely essential for their work that they should carry with them public opinion. The public must lean on the dicta of the physician and surgeon, but they would not lean on the dictum of the medical officer of health—the man in the street would not—until they were sufficiently educated and convinced of the importance of the work. Therefore, one of their principal duties at present was the education of the public in matters of hygiene.

Dr. JOHN ROBERTSON (Birmingham) read a paper on

The Notification of Tuberculosis.

He said that the most important objective in the prevention of disease was an accurate and speedy method of ascertaining where disease existed. Little or no value could be attached to notification if nothing followed the receipt of it. There must be machinery not only for prevention but also for treatment. He thought the Local Government Board had acted wisely in delaying general compulsory notification, because little or no means were in existence for dealing with patients in the direction of cure or prevention. Provided that they had the machinery for dealing with the notified case, and that they did not harm the patient by bringing down on him all the restrictions which applied to the small-pox patient, there appeared to be a necessity for compulsory notification, not only that their statistics should be as complete as possible, but that the exceptional patient should not be able to raise an action for damages which he alleged to be due to notification. There was one objection to compulsory notification which did not now exist. He referred to the practice of not telling the patient the true nature of his disease. The medical attendant must do this now if the patient were to be treated by modern methods.

Mr. A. E. LYSTER (Chelmsford) read a paper on

Sanatoriums.

He admitted that sanatoriums must play some part in solving the tuberculosis problem. Those in authority and occupying high places both inside and outside the profession said that the sanatorium was the chief solution of the problem; so much so, that the Chancellor of the Exchequer had announced his intention of spending 1½ millions in one year and 1 million each succeeding year mainly for the provision and maintenance of sanatoriums. Mr. Lyster contended that sanatoriums should occupy quite a subsidiary place in the solution of the problem. It was quite easy to carry out sanatorium treatment in the homes of at least four-fifths of those affected, and this could be done by providing a habitable shelter at home. The utility of the sanatorium was grossly exaggerated. He did not believe the statistics published by sanatoriums; he knew they were untrustworthy and misleading. Their cases were most carefully selected. He treated all his own cases in their own gardens in canvas shelters. No better way could be devised for isolating a sufferer than by isolating him in a habitable shelter in his own garden, where he could be tended by those near and dear to him. He suggested there must be compulsory notification, and then that a habitable shelter should be provided for those who had garden or backyard space. For those who had no such space he suggested that instead of providing sanatoriums every sanitary authority, or, if there was to be a National Tuberculosis Committee with local advisory committees, that such be empowered to purchase land in the vicinity of the town, upon which should be built cottages according to the number of cases; that a small garden should be allotted to each, and that a habitable shelter should be placed in each garden. An allowance should be made to the sufferer according to circumstances.

Dr. R. W. PHILIP (Edinburgh) read a paper on

Tuberculosis Dispensaries.

He said that the great purpose of tuberculosis dispensaries was that there should be no case of the disease, even in its earliest stages, undetected or uncared for. It was best in the interests of the antituberculosis campaign that the dispensary should be constituted a separate institution. To link it with the existing general hospitals was likely to lead to failure and disappointment. He wanted the disease to be taken as a special study worthy of the closest thought and highest effort. There was risk in making the dispensary merely a part of the office of the medical officer of health.

Dr. W. CAMAC WILKINSON (London) said that tuberculin dispensaries offered not only the best but the only means of satisfactorily dealing with the problem of tuberculosis among the poor. It was simple, cheap, effective, and comprehensive. There were 5000 cases in Birmingham urgently needing help, and there was no other way to help them than through tuberculin dispensaries. Sanatoriums only dealt with 10 per cent. of the sufferers, and the amount spent upon them was more than sufficient to provide the best form of treatment for every victim of the disease.

Dr. C. KILLICK MILLARD (Leicester) said that the Corporation of Leicester had just decided by a unanimous vote to start a municipal tuberculosis dispensary. He was satisfied that there was nothing antagonistic between sanatorium treatment and tuberculosis dispensaries, or tuberculin dispensaries. He believed that tuberculin had a great future before it, and if further experience justified present hopes it followed that tuberculin would be used in every dispensary and sanatorium. The health department, guided by the medical officer of health, was necessarily the centre of all effort for the prevention of disease, and he thought it was a mistake to put dispensaries under separate control.

Sir WILLIAM J. THOMPSON (Registrar-General for Ireland) said that since 1907 the death-rate from tuberculosis in Ireland had fallen from 2·7 to 2·3 in 1910 per 1000. This meant 1663 less deaths from consumption, or an average of 32 deaths less per week. The tuberculosis death-rate in Dublin had fallen from 4·6 to 3·7 in the same time. This had been brought about mainly by the work of the Women's National Health Association. A most important work of this association was the "after-care of patients" who had been already at sanatoriums. The association felt that patients very soon lost what they had gained at the sanatorium if they were allowed to go back to the wretched surroundings, but if these patients were encouraged and helped to carry out the sanatorium treatment at home it would put them over that dangerous stage between being discharged and able to take up full work.

Dr. HALLIDAY G. SUTHERLAND (London) said that tuberculin was used in dispensaries both as a diagnostic and therapeutic agent. It was used in selected cases, as indeed it had been in Germany and all over the world, but it should not be divorced from general and medicinal treatment. There was no specific for tuberculosis. Dr. Wilkinson and his school regarded the tuberculin reaction as specific. That was quite wrong. It had been absolutely proved that the reaction occurred in typhoid fever, measles, pneumonia, and syphilis. Further, 70 per cent., even of a healthy German cavalry regiment, reacted to tuberculin. If they had gone to Dr. Wilkinson no doubt they would have added to his list of cured. It was a great mistake to divorce tuberculin from other forms of treatment.

Dr. R. MURRAY LESLIE (London) said that they were in agreement with Dr. Philip in regard to the paramount importance of domiciliary visitation in the prevention of tuberculosis, and he would specially draw attention to the valuable work in this connexion done in the rural districts by the caravan crusade against tuberculosis carried out in recent years by the National Health Association of Ireland and the Women's Imperial Health Association of Great Britain. At the best, sanatorium treatment was only suitable for a small fraction of the cases, the great bulk of which must be dealt with by agencies such as anti-tuberculosis dispensaries. Tuberculin treatment was simply one of many methods which had its due place in the treatment of this disease, and if scientifically valuable would be used in tuberculosis dispensaries, sanatoriums, and elsewhere.

Sir WILLIAM OSLER (Oxford) pleaded for the association of the tuberculosis dispensary with the general hospital and county infirmary.

Dr. J. C. MCWALTER (Dublin) said that the ordinary opinions as to sanatoriums were based on fallacies. It would cost at least £40,000,000 a year to treat all the cases of tuberculosis in Great Britain. The Chancellor of the Exchequer was about to allow only £1,500,000 a year. It would be far cheaper to have convalescent homes where a

patient could be treated in the pretuberculous stage. They ought to hesitate before placing a burden on the ratepayers, because the great cause of sickness was poor food and bad housing.

Dr. IDA E. FOX (Ashover Sanatorium) spoke about the home treatment of tuberculosis, and said it was of little use unless preceded by sanatorium treatment.

Dr. W. B. KNOBEL (Belbroughton) said that the cause of phthisis was infection plus loss of immunity; that infection was to be found especially in milk. Loss of immunity produced by bad hygiene or some other condition occasioned the disease. The cure of phthisis lay in a restoration of immunity, and the permanence of the cure depended upon after-care, in which the tuberculosis dispensary was of great value. Many cases were undoubtedly cured by tuberculin alone, but many were cured by sanatorium treatment alone. More than these together could be cured by sanatorium treatment plus tuberculin, and more still would be cured by those two plus some method of dealing with secondary infections.

Dr. A. H. BYGOTT (Barking) said that the medical officer of health did not want to interfere with the person who conducted the dispensary; his object was simply to coördinate the work with others, and it was desirable that he should do so.

Mr. H. J. EGERTON H. WILLIAMS (Sheffield) said that it seemed to him that in the present state of their knowledge and the difficulties of coming to a conclusion as to whether this or that case was cured, it was sufficient for corporations to undertake the education question for the present.

The PRESIDENT, in conclusion, said that sanatoriums alone did not solve the problem, and the same might be said of the tuberculosis dispensary of Dr. Philip, the tuberculin dispensary of Dr. Camac Wilkinson, and the shelters of Mr. Lyster—all were useful under certain conditions and could not be neglected, but by themselves had only limited applications.

Dr. F. E. WYNNE (Leigh, Lancs.) read a paper on

Domestic Hot-water Supplies as a Factor in the Production of Lead Poisoning.

He said that he wished to draw attention to the enormous excess of lead which he found in samples taken from the hot-water taps of private houses. In 30 observations of water taken from houses in all parts of the borough of Leigh there was invariably lead in the sample taken from the hot tap, even when the cold water showed none, or only a trace. In several cases the hot water contained over 2 grains of lead to the gallon. A similar state of affairs had since been observed at Ashton-under-Lyne. In his annual report for 1910 the medical officer, Dr. J. W. Talent, remarks: "During the year samples of drinking water were tested for lead—25 taken from cold-water taps, 6 from hot-water taps. Of those taken from the cold-water taps, three showed slight acidity, but no lead was present in any. Of the six taken from the hot-water supply, three showed a marked quantity of lead. It is evident that anyone drinking water from the hot-water tap in such cases as the three in question would run a decided risk of lead poisoning. The matter was freely discussed in the local press, and an advertisement pointing out the danger was inserted in the same." This discrepancy in the amount of lead contained in the hot- and cold-water supplies was altogether too great in the case of Leigh water to be accounted for by any possible increase of the solvent power of the water due to its temperature, and it was also out of proportion to the extra length of piping through which the hot water passed. It was clear, therefore, that the hot water was somewhere exposed to lead in a way in which the cold water was not. After a little inquiry Dr. Wynne learned that this contact took place in the so-called copper cistern, the great majority of which were heavily weighted with lead.

Dr. J. BROWN (Bacup) said that Dr. Wynne had done a public service in directing the attention of the medical profession to the danger of the fraudulent use of lead in the cisterns sold as copper. No doubt that accounted for the large amount of lead, viz., 2 grains per gallon, found in some samples. Usually there was a long length of lead pipe to the hot-water tap.

THERAPEUTICS, INCLUDING DIETETICS.

WEDNESDAY, JULY 26TH.

President, Sir ROBERT M. SIMON (Birmingham).

This Section met in conjunction with the Section of Anatomy and Physiology. A discussion took place on

The Merits of a Relatively Low Protein Diet.

Professor CHITTENDEN (Yale University), in opening the discussion, made the following statement:—1. Dietetics as a part of the physiology of nutrition is entitled to the same careful and thorough study as any other branch of biological science, while the opinions and theories connected therewith should be formulated upon evidence that is both comprehensive and reliable. 2. It is a fair argument that the quantity of food consumed daily should be proportional to the needs of the body. In order to avoid excess or deficiency, it is important to ascertain what the real needs of the body for food are; how much food is needed by the average man under ordinary conditions of life to repair tissue waste and to furnish fuel for the required energy. It is not the part of wisdom to accept unquestioningly dietary standards based simply upon the everyday habits of mankind under the assumption that because civilised people make a practice of eating daily a certain amount of food, that quantity must represent the real needs of the body. 3. Various data are presented tending to show that the ordinary conception of the protein requirement of man is an exaggerated one. A large number of data recently collected among the American people indicates that many people at least, apparently in health and vigour, and with ordinary resistance to disease, do live at a much lower level of nitrogen metabolism than the ordinary accepted standards call for. Additional experiments just completed corroborate the view that normal individuals are able to maintain their usual condition of health, with, indeed, more or less improvement, on relatively small amounts of protein food. Bio-chemical study of these individuals shows that their metabolism is unimpaired. The partition of urinary nitrogen, &c., is in nowise disturbed. Utilisation of the nitrogen of the food, as well as the fat, is maintained at the proper level on a relatively low protein diet. 4. Various data from State institutions are in harmony with the view of the adequacy of a relatively low protein diet. 5. Brief discussion of the results presented by other investigators in the study of protein metabolism, as the people of Bengal, leads to the conclusion that the alleged bad effects of low protein intake are not to be associated with the quantity of nitrogen, but with other factors, such as the character of the food, involving its availability, &c. An attempt is made to show the necessity of a ration that is well balanced—one in which the various physiological factors are given due consideration. Nitrogen and calories by no means constitute the only elements to be considered in a so-called standard dietary. Distinction is to be drawn between the needs of a growing organism and the needs of an adult who has attained his growth. The need of protein per kilogramme of body weight in the two cases must be different. Experimental data, however, show that even in the early periods of growth the protein of the food constitutes a surprisingly small part of the diet of the suckling infant. The fully-developed man, having an abundance of fat and carbohydrate in a readily available form to meet the energy requirements of his body, can, it is believed, live with perfect health on a few grammes of nitrogen per day. To serve its full purpose in the economy, however, man's food must be in a form readily assimilable, free from a large excess of indigestible material.

Dr. D. CHALMERS WATSON (Edinburgh) said that the excess of protein commonly taken was disposed of as waste and affected individuals differently. The tuberculous apparently thrived on more, while the gouty tolerated less. A chart was exhibited which showed a progressive increase of meat consumption rising from 3–50 lb. per head during the past 50 years. Experiments illustrating the effect of bread and flesh feeding on animals were cited, showing in the latter an increase in the fæcal nitrogen. Sections of the kidney showed in the bread-fed animals granules restricted to the base of the epithelial cells, while in those on a meat diet the granules were widely distributed in the cells indicating increased functional activity. A further illustration of comparative diet effects was afforded by comparing young

rats of the same age, fed respectively on bread and milk and on meat, those on the carbohydrate diet being half as large again as those fed on meat. Sections through the naso-pharynx showed healthy mucous membrane in the bread-fed rats, but a state of catarrh and shedding of epithelium in those fed on meat.

Lieutenant-Colonel C. H. MELVILLE, R.A.M.C., compared the deductions from experiments and experience, commenting on the limitations and fallacies of the former, and the broad and natural conditions in the latter. He advanced the view that a liberal protein diet was adopted by the conquering races, while these inferior in courage and strength were addicted to a carbohydrate diet, and not the best of that, like the inhabitants of Southern India. Experiments carried out with carefully prepared and regularly administered food in good quantity and of good quality might give good results, even with a small proportion of protein, but taking things as they came and obtaining such food and in such condition as they were able most men required a higher proportion of protein in order to maintain their health and powers. Indeed, it was more a question of quality than quantity, depending largely on the proportion which could be digested and assimilated.

Dr. ROBERT HUTCHISON (London) said he believed that for the average mortal the question of excess of protein was not as important as many appeared to think. Some cranks and faddists assumed a strong attitude against free consumption of protein, but Nature said, "You need not trouble, my children, I have settled this matter long ago." Experience was the best test of truth and constantly exposed the theorists. He characterised the experiments of Dr. Watson Chalmers as "solemn trifling." Apart from the protein factor there were a thousand differences between a meat and lactocarbohydrate diet which he had not taken into account. The diagram representing the supposed increase in meat consumption per head was specially misleading, as it only represented imported meat with a rapidly increasing population and took no account of home-grown flesh food which alone sufficed for the community 50 years ago. Moreover, the increase shown was associated with a progress in improvement in the health of the community. In spite of the relatively low protein equivalent of milk, this represented a high proportion compared to bodyweight in an infant. There was no definite evidence that excess of protein did any harm or was really accountable for the occurrence of gout or renal disease. Could it be said that Professor Chittenden had proved the security of a low protein diet or had disproved the advantage of excess. For there was an advantage in stimulating metabolism which meant fuller life, fuller efficiency, and greater resistance to disease. There might be an economical advantage, a low protein diet was cheaper.

Dr. WILLIAM RUSSELL (Edinburgh), who professed himself a warm disciple of Professor Chittenden, said that in regard to the numbers of persons suffering from protein excess there was presented a scientific basis for conclusions that had been arrived at clinically. He emphasised the special value of Professor Chittenden's work in connexion with groups of individuals continuing an ordinary life and unrestricted diet, though one which was accurately estimated. Physicians had to deal with patients who were often overstraining their powers of assimilation in endeavouring to maintain their strength, and the question to him was, did they need to do so? Apart from other things, there remained the baneful influence of the intestinal effects of excess of protein.

Dr. ALEXANDER HAIG (London) also supported the views expounded by Professor Chittenden. He contended that the habits of mankind could not be regarded as a standard of what was needful and wholesome. The standard to be aimed at was represented by 90 grammes of protein daily, or 9 grains per pound of bodyweight. Any gross deviation above or below this led to ill-health. Relative starvation reduced the output of uric acid, slowed the capillary circulation, caused cardiac dilatation, and impaired the quality of the blood. Much more was needed by the very young. A nursing infant received 31 grains per pound of bodyweight and a child of 12 months 40 grains. This produced a physiological balance. He added, deficiency of salt led to defective formation of hydrochloric acid.

Dr. E. P. CATHCART (Glasgow) insisted that the quality rather than the quantity of protein was important. Experiments on dogs showed that the minimum dietary containing the proper amount of protein was attained with dog's flesh. Throughout the animal kingdom there was idiosyncrasy in relation to food. The protein supplied an important stimulant to digestion.

Dr. A. C. F. RABAGLIATI (Bradford) delivered a very complex statement on the distribution of energy, which was a matter that went much beyond protein metabolism.

Dr. WOODS HUTCHINSON (New York) expressed his sense of the importance of Professor Chittenden's work. There was a wide range in the potentiality of proteins, that of fish being much lower than that of animal flesh. Experiments with isolated lengths of intestine had shown that fæcal matter was not merely the residue remaining in the bowel, but was matter that, having been digested and absorbed, was resecreted into the intestine after rejection in the body, which only selected and retained what was suited to ready assimilation. Experience of food values had been tested through centuries. Nations, classes, and individuals had determined what was most suitable to each. On the whole, it might be said that those most extravagant in the matter of protein consumption were superior in power to others. Japanese vegetarians settled in America improved vastly under a more liberal protein diet, so that whereas on arrival their strength equivalent was only 35 per cent. of a white man it increased with an extended diet to 65 per cent. Excess in meat diet was by no means the only factor in the production of gout, and in regard to kidney affections two-thirds were the result of direct infection. A due proportion of protein and carbohydrates was necessary in all diseased conditions, even diabetes.

Dr. J. HADDON (Hawick) gave his experiences as a fruitarian and vegetarian with great enthusiasm, noting a doubling in the output of urea attending an animal diet.

Dr. A. B. OLSEN (Caterham), speaking of sanatorium treatment, said a vegetarian dietary had been adopted by choice, the protein element being gradually eliminated.

Professor CHITTENDEN, in reply, pleaded for reconsideration and progress in dietetics.

TROPICAL MEDICINE.

WEDNESDAY, JULY 26TH.

President, Sir FRANCIS LOVELL, K.C.M.G. (London).

The PRESIDENT, in opening the proceedings, said he did not propose to give a formal address nor make a lengthy speech. He would confine himself merely to a few words in view of the amount of work which the section had to get through. He could not refrain from referring to the great loss which the Liverpool School of Tropical Medicine had sustained through the untimely death of Sir Rubert Boyce, F.R.S., who had been a prominent worker in that school. He himself could testify to the great advantages which certain colonies had derived as a result of Sir Rubert Boyce's visits. On his advice measures had been initiated which had already borne fruit, and would continue to do so in the future, conferring marked benefits upon the inhabitants of those colonies. The President also alluded to the cordial relations which now existed, and were likely for long to exist, between the schools of tropical medicine in London and Liverpool. Their aims were similar, and in their various researches the workers of the respective schools were constantly in communication with one another with mutual benefit. He congratulated the Liverpool School upon the conferring of the honour of K.C.B. on Professor Ronald Ross.

Dr. CHARLES J. MARTIN (London) then opened a discussion on

Plague—in its Endemiological and Epidemiological Aspects.

He said that as it was necessary to be concise he would confine his remarks chiefly to the occurrence of plague during the last 15 years. He could not marshal all his evidence before them in the time at his disposal nor refer to all the authorities he had consulted. But when the paper he had prepared came to be published it would be found to contain a copious list of references. With the help of lantern slides Dr. Martin showed, along with other views, some maps indicating the various recognised endemic areas of plague throughout the world. In the majority of these animal plague was known also to occur, and in those where rat plague was not reported he thought that closer investigation would furnish proof of its existence. It was hardly possible in the limited time at his disposal to trace how, of late years, plague had diffused itself all over the world. Dr. Martin then paid a tribute to the value of the annual summaries of

the incidence of plague in various parts of the globe begun by the late Dr. Netten Radcliffe for the Local Government Board and continued in recent years by Dr. R. Bruce Low. Appearing in 1894 at Hong-Kong and Canton, the infection in all probability being introduced from the endemic area in the province of Yunnan, plague invaded Formosa in 1895 and reached Bombay in 1896. Spreading gradually over both hemispheres, by 1900 all quarters of the globe became involved to a greater or less extent. The problem was to ascertain how plague had been spread. Bubonic plague was not regarded as directly infective, but nevertheless it was potentially a source of infection. For plague bacilli might settle in the lungs and then be coughed up, infecting the air of the sick room. Some epidemics of pneumonic plague are thought to have started in this way. It was an interesting question how primary plague pneumonia arises. It might start from a secondary pneumonia occurring in a bubonic case, the expectoration of the patient, often suffering from a wandering delirium, being spat all over the bed and the floor or walls of the room, such cases being difficult to control. Afterwards such infection might breed true and produce only pneumonic cases, becoming in this way a man-to-man infection. But the present pandemic of plague had been characterised by a paucity of pneumonic cases. The disease had spread over the world as a bubonic infection. The association of animal plague with that of man had long been recognised, and all authorities were now agreed that rat plague was immediately associated with the development of human plague epidemics. How, then, is plague spread from rat to man? Two suggestions had been put forward: 1. That infected rat excreta deposited on the ground might reach abrasions or scratches on the hands or feet of human beings, and that possibly rat excreta might reach grain and other food for man and give rise to infection through the alimentary canal. Experiments have shown that though these theoretical dangers might exist they could not have played any part in the production of the extensive outbreaks which had occurred of late years. 2. That, as in some other diseases, the plague bacilli were transmitted from animals to man by a suctorial insect; and the insect concerned had been long suspected to be the flea. After referring to the work of investigators in various parts of the world, showing the part played by the flea in carrying plague from rats to man, Dr. Martin related a number of experiments in India devised to show that the flea was the transmitting agent. It had been objected that rat fleas did not bite man, but Liston in India had demonstrated conclusively that the Indian rat flea did bite man when it could not find a rat to feed upon. Moreover, when rats are dying from plague the fleas leave them and seek another host; the more rats that die the more fleas are looking for other hosts; thus man is attacked more frequently during epizootics than at other times. Bubonic plague is caused by the puncture of the skin by the infected flea. General insanitary conditions which foster rats aid in the diffusion of plague. Dr. Martin spoke of infection by clothing sent long distances. In these cases fleas were generally wrapped up in the bundle. The seasonal prevalence of epidemics and epizootics of plague depended on some biological factor. Experiments showed that the number of fleas on rats varied with the season, the maximum number being found on rats in March and April, which in Bombay were the worst months of plague epidemics. Temperature above 85° F. appeared to have the effect of diminishing the amount of plague in India, while a temperature below 80° increased it. Any measures which prevented transmission of fleas to animals would prevent infection by plague. The rat-flea theory, in short, explains all the epidemiological facts.

Professor W. J. R. SIMPSON (London) congratulated Dr. Martin on his able paper. The facts adduced seemed to show the association of human and animal plague with the flea as transmitting agent. His own opinion was that the communication of plague through infected food could not be altogether excluded. Referring again to fleas, he said that rat-catchers in their work got infected by fleas and became infected by plague. He thought, however, that the importance of the flea might be over-estimated and might lead to neglect of other agencies. He compared the importance of the flea in plague to that of the fly in typhoid fever. The theory of insect carriers tinged our ideas. Insects were carriers of protozoal diseases which have a definite life-history in the insect, and such disease could not be spread in any other way, but it might be otherwise in the case of a bacterial infection like plague. He admitted that fleas play a part, but not the whole part, in the spread of plague epidemics. Enough, however, had been proved about the rat-flea theory to make it the basis of administrative action in India. He advocated more application of the accumulated knowledge as to plague, for little effect seemed so far to have followed the measures employed, more than 600,000 persons having died in India from plague in the first half of the present year.

Dr. MAJOR GREENWOOD (London) dealt with some of the statistical points connected with plague prevalences in India. He spoke of the severity of the disease in some Punjab villages and believed that three factors influenced the severity of these local epidemics: (1) the size of the village; (2) the period of the plague season at which the village was attacked; and (3) the situation of the village in the infected area. He thought that perhaps the Indian experience did not apply to all epidemics in other parts of the world.

Dr. F. M. SANDWITH (London) spoke of the behaviour of plague in Egypt. Hitherto the cases in Lower Egypt had been bubonic as a rule; those in Upper Egypt pneumonic.

Dr. H. S. STANNUS (Nyasaland) suggested that congregation of fleas on rats at the breeding seasons might be associated with the behaviour of plague, rat nests being notoriously infested with fleas.

Dr. L. W. SAMBON (London) gave a large amount of information about the old beliefs as to plague in animals. He thought that recent writers had forgotten the old ones. The cat and the dog were viewed as dangerous in reference to plague in the old days, and their destruction was advised as a preventive measure. He spoke of the bed-bug as well as the flea as a transmitter of plague.

Dr. A. J. CHALMERS (Colombo) referred to the experience of Ceylon, to which island large numbers of coolies from India were brought annually by ships. He thought that having regard to the large amount of immigrants from India infection might be likely to escape detection, and there were plenty of rats and fleas in Ceylon. Occasional cases of plague had occurred on coolie ships, but the disease had so far never gained a footing in Ceylon. He could hardly account for this immunity.

Dr. A. BALFOUR (Khartoum) said that there had not been any epidemics of plague in the Soudan, but whether this had relation to the hot climate he could not say. He spoke of iodoform as likely to be useful as a practical measure in keeping off fleas; this suggestion had been made by a German observer whose name he could not recall.

Mr. JAMES CANTLIE (London) believed that the seasonal variations in plague incidence had relation to temperature. He spoke of climatic bubo, which he regarded as a forerunner of plague, such cases occurring, in his experience, before a plague epidemic and also after it had subsided. The bacillus of climatic bubo, sometimes termed pestis minor, did not cause plague; but he believed it to be a stage in the development of the true plague bacillus. Step by step the bacillus of climatic bubo might increase in virulence until a plague epidemic was established.

Dr. G. F. PETRIE (London) said there had been no concurrent spread of rat plague in Manchuria during the recent human epidemic. There were plenty of opportunities for rats to acquire plague during the epidemic; for example, by gnawing human corpses, many of which remained unburied during the height of the outbreak. The origin of the Manchurian epidemic was obscure, but there was suspicion that the tarabagan, a species of marmot, which was known to be susceptible to plague, might have been an agent; the evidence implicating it was, however, indirect. The flea which lived upon the tarabagan bit human beings. This animal hibernated during the cold weather, and it was thought that perhaps the fleas also hibernated, and thus the infection persisted from one season to another.

Dr. MARTIN then replied upon the various points which had been raised. He did not regard the rise in temperature as inhibiting the plague bacillus. As regarded iodoform, he admitted it would keep off the fleas, but it would also, he suggested, keep away one's fellow men, the odour being so obnoxious to most people. He did not pretend to explain the mediæval epidemics on our present knowledge. The spread of the disease in the olden time was far more rapid than in the present day. He thought that if the characters of the plague bacillus were changed a little, this would produce a septicæmic form of plague as in the rat, and it

would then spread like wildfire. He had a conviction that the flea in biting man introduced into his blood the contents of its stomach, but this had not yet been demonstrated. The flea passed large quantities of fæces on the skin, and these often contained virulent plague bacilli, which, if rubbed into the punctures made by the flea, inoculated plague into man. There was as yet no proof that the flea's salivary gland was infected by the plague bacilli. He agreed with Dr. Sambon that dogs and cats might become sources of danger to man. He had no experience of climatic buboes, and there was no evidence that these were a manifestation of the attenuated virulence of plague bacilli.

The proceedings then terminated.

THE ANNUAL EXHIBITION.

(*Continued from p. 338.*)

II.—DRUGS.

THE display of drugs was full of interest, though there were fewer exhibits in this section than is usually the case. That fact, however, was not without its advantages, since a more complete and leisurely inspection could be made of the good things that were shown. Once again it was evident that the greatest care and skill are being exercised to obtain a high degree of purity of drug and to present it in a form best suited to the needs of the case. "Elegance," too, was a feature of the various pharmaceutical exhibits shown, and this department of the exhibition lent decided colour and decorative effect to the vista of stalls. In many instances there were some attractive preparations in the shape of stately columns of crystal growths or of specially prepared crystallised drugs. At the stall of the Hoffmann-la-Roche Chemical Works, of 7 and 8, Idol-lane, London, E.C., there was a fine display of alkaloids and chemicals. Crystalline crops of strychnine and crystalline specimens of guaiacol formed part of the decoration of the stall, but, in addition, there were digalen, a standardised preparation of digitalis, giving, it is said, the typical action of the drug without any unpleasant by-effects; omnopon, a soluble opium containing the total alkaloids of the drug; secacornin, a special standardised preparation of ergot; thigenol, an organic sulphur compound having antiseptic and antipruritic properties; and thiocol, a soluble and odourless guaiacol compound which has been used with good results in pulmonary diseases, one advantage of its use for children and delicate persons being that it is said not to produce gastric disturbances. The exhibit of Messrs. Burroughs, Wellcome, and Co., of Snow Hill Buildings, London, E.C., was most tastefully executed and had an additional attraction in the shape of a series of growing medicinal plants—nux vomica, digitalis, cardamoms, aconite, colocynth—brought from the botanical gardens in the firm's grounds at Dartford, where their fine chemical products are manufactured. The list included a series of tabloid and soloid products, Wellcome brand sera, vaccines, and tuberculins, and epinine, the synthetic substance possessing the suprarenal action in a high degree. Messrs. C. J. Hewlett and Son, Limited, of 35–42, Charlotte-street, London, E.C., showed a number of pharmaceutical preparations found to be of excellent service to the practitioner. Amongst them were a physiologically standardised ergot, a classic pepsin and bismuth mixture, "iodermiol," a non-staining and non-irritating preparation of iodine, and a series of concentrated liquors. Messrs. Southall Brothers and Barclay, Limited, of Lower Priory, Dalton-street, and Dale End, Birmingham, exhibited examples of their departmental work, laboratory equipments, chemical and crystallising laboratories (for iodine, potassium iodide, sodium sulphate, potassium citrate), standard tinctures from the galenical laboratory, palatable elixirs, glycerols and syrups, and so forth.

Messrs. A. and M. Zimmermann, of 3, Lloyd's-avenue, London, E.C., presented a large number of fine pharmaceutical products, including some organic silver preparations, organo-therapeutic preparations, and some recent remedies in the shape of Biebrich Scarlet R, which, it is said, promotes epitheliation of wound surfaces; amidoazotoluol, acting similarly but quicker; a new tuberculin (Rosenbach), an immune substance, "I.K.," and "nastin," employed by Professor Deycke in the treatment of leprosy. There were a good many objects worthy the attention of the medical man at the admirably set out stall of Messrs. Parke, Davis, and Co., of 50, Beak-street, Regent-street, London, W. The exhibits were striking in giving evidence of the advances made in pharmaceutical preparations and of a determination to meet the requirements of modern therapeutics. The exhibit included a series of serums and a complete list of the bacterial vaccines prepared under the supervision of Sir Almroth Wright in the laboratory of St. Mary's Hospital. There were also tuberculins for the ophthalmic and cutaneous diagnosis of tuberculosis, and a series of elegant standardised galenicals, as well as a pretty selection of "glaseptic" nebulisers and sprays.

Messrs. A. Wander, Limited, of 1 and 3, Leonard-street, London, E.C., in addition to bringing to the notice of the visitors their ovaltine, which, as our analytical columns have shown, is a combination of diastasic malt extract, milk, eggs (ovo-lecithin), exhibited a combination of malt extract with iron iodide, which is said to ensure the therapeutic action of iron and iodine without gastric disturbance or constipation, and to be free also from the effects known as "iodism." Messrs. Fassett and Johnson, of 86, Clerkenwell-road, London, E.C., exhibited for the Messrs. A. C. Barnes Company the silver proteid compound argyrol, which has been used successfully in ophthalmia and genito-urinary diseases; in addition, there was "ovo-ferrin," an iron proteid combination which is designed to avoid the undesirable effects of iron while securing its tonic action. There were excellent examples of fine pharmaceutical preparations and pure chemicals on the artistically arranged stall of Messrs. Brady and Martin, Limited, of Newcastle-upon-Tyne, who devote special care to the purity of therapeutic agents. There were an array, also, of capsules, pills, and tablets, and a series of physiologically, as well as chemically, standardised tinctures. There were some good old and new friends in the exhibit of Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C. Their "aeriser" is well known as an atomiser which "renders fluid like smoke"; the powder pill, called a "pulverette," has also been before the profession for some time—the drug in powder form is enclosed in a kind of eggshell made of sugar coating. "Grindeline" is a comparatively new preparation for asthma which is said not to induce a "drug habit"; it contains amongst other things grindelia with euphorbia, trinitrin, and potassium iodide. The exhibit included also a new preparation of bismuth and pepsin ("liq. gastro-rube"), mercury atoxylate cream, and an oxygen generator and "oxinhalator." Messrs. W. A. Wharram, Limited, of 115 and 117, Vicar-lane, Leeds, showed a series of elegant pharmaceutical preparations chiefly in liquid form. Such were a liq. bismuth co. c. pepsin, a linctus heroin hydrochlor., a liquor santali comp., and a liquor antisepticus, with thymol, eucalyptol, boric and benzoic acids as agreeable antiseptic agents. The exhibit included a neutral syrup of the hypophosphites and an iodine ointment, odourless and producing no stain. Lymphoid compound for oral administration and lymph serum for hypodermic use formed the subject of the exhibit of the British Organo-therapy Co., Limited, of Carlton House, Lower Regent-street, London, S.W. The claim urged in favour of these products is that they are valuable in the treatment of nervous and mental conditions arising from cell degeneration, disturbed metabolism, and auto-intoxication. Close by the Denver Chemical Manufacturing Company, of 41, St. Ann's-road, Bow, London, E., exhibited specimens of their anti-phlogistine, a scientific cataplasm which has been found of signal service in the relief of pain and in the reduction of inflammation and congestion. Miol (The Miol Manufacturing Company, Limited, 82, Southwark Bridge-road, London, S.E.) appears to be holding its own as a special food in debilitated conditions. It is composed, as has been shown in our analytical columns, of active malt with olive oil, iodine, and phosphorus, and is suggested as a pleasant and effective substitute for cod-liver oil.

Glycerophosphate preparations were given considerable prominence at the stall of Messrs. Huxley's Pharmaceutical Products Company, of 59, Dingwall-road, Croydon. Thus there was a non-saccharine syrup of acid glycerophosphates, a syrup of glycerophosphates with formates, with hæmoglobin, pepsin, red bone-marrow extract, and so on. The exhibit included a menthol and wintergreen cream, and sal-antisepticus (a powder containing well-known antiseptics). It is impossible in the space at our

disposal to enumerate all the fine pharmaceutical products exhibited by Messrs. Wyleys, Limited, of Coventry. There were some excellent liquores, tincturæ, and misturæ submitted for inspection, and many excellent forms of administration were shown, as, for example, medicated pastels, perles, and compressed tropels. We have already reviewed some of the surgical exhibits of Messrs. Reynolds and Branson of Leeds, but they are wholesale chemists as well as surgical instrument-makers, and their exhibit included some elegant drugs and pharmaceutical preparations, amongst which were a preparation of bismuth and pepsin, physiologically proved preparations of digitalis, ergot, Indian hemp, squill and strophanthus, suppositories of bismuth subgallate, and a series of admirable unguents. The Bayer Co., Limited, of 19, St. Dunstan's-hill, London, E.C., had an imposing show of many well-known pharmaceutical products introduced by them. Amongst new ones were adalin, a derivative of urea combined with bromine, described as a safe and efficient hypnotic; ferro-sajodin, a combination of iron with the well-known organic iodine compound, prepared for use in scrofula and rickets so as not to disturb the digestion; gynoval, a valerian derivative; sophol, a new organic silver compound for use in ophthalmological practice; spirosal, an external application for rheumatism; and thyresol, an advance on sandal-wood oil. The Charles H. Phillips Chemical Company, of 14, Henrietta-street, Covent Garden, London, W.C., exhibited two products, a milk of magnesia and a phospho-muriate of iron compound. The former is a uniform "milk" containing a specially prepared hydrate of magnesia, which serves as an excellent antacid; the latter contains the phosphates of potash, magnesia, lime, and iron, with the hydrochloride of quinine, a formula which indicates its value as a general tonic. Amongst the pharmaceutical preparations exhibited by Messrs. James Woolley, Sons, and Co., Limited, of Manchester, were a useful sodium phenate solution, a tablet containing the same agent plus red gum and eucalyptus oil, suggested for use in post-nasal catarrh and relaxed throat and in certain gastric troubles; a liquor thymol. alkalinus, a hæmoglobin capsule, and a series of soluble gelatin capsules. Synthetics were in evidence at the stall of Messrs. Zimmer and Co. (Frankfort-on-the-Main), who were represented by Messrs. Widenmann, Broicher, and Co., of 33, Lime-street, London, E.C. Amongst these may be mentioned allosan, a derivative of santalol, which has been, we understand, efficient in the treatment of gonorrhœa; euquinine, or ethyl-carbonate of quinine, which is tasteless, its action being physiologically that of quinine, but without "quinism"; validol (menthol and valerianic acid), a sedative and preventive, it is stated, of sea-sickness; and validol camphorate for allaying pain in dental decay.

The chief substance exhibited by the Saccharin Corporation, Limited, of 10, Arthur-street West, London, E.C., was novocain, described as "the non-irritant local anæsthetic." There is considerable evidence in its favour compared with cocaine, and its compatibility with the active principle of the suprarenal gland, as well as its complete solubility in water, are unquestionable advantages. There was also exhibited at this stall pergenol, a solid compound of hydrogen peroxide and borax, dissolving in water and yielding at once a solution of peroxide of hydrogen and boric acid, a powerful disinfectant and antiseptic fluid, the advantages of which in medical practice have already been described in our analytical columns.

It is probable, judging from the obvious attention which the visitors gave to the pharmaceutical products displayed, that this section proved to be next in interest to the surgical exhibits.

(To be continued.)

EPSOM COLLEGE: FOUNDER'S DAY.

THE annual distribution of prizes took place at Epsom College on Founder's Day, July 29th, in the presence of a large gathering of people, including Sir William Church, Sir Henry Morris, Sir Shirley Murphy, Dr. Norman Moore, Dr. Frederick Taylor, Dr. F. Needham, Mr. G. H. Makins, Dr. C. Caldecott, Mr. Purnell Purnell, Mr. Stanley Boyd, Dr. F. de Havilland Hall, and several distinguished laymen.

After service in the College Chapel the counting of votes for the Hodgkin prize took place. This prize is given in alternate years with the Wakley prize, and consists of an illuminated certificate and a cheque for £14, awarded on the recommendation of the masters and by the votes of the schoolboys. It was adjudged this year to G. N. Wrightson by a very large majority.

The visitors then inspected the handsome memorial tablet recently erected in the chapel to commemorate the long and valued services rendered to the College by the late Sir Constantine Holman. The tablet is made of alabaster and has two upper corner panels carved in slight relief on a gold mosaic ground. The cross at the top and the band between the narrow moulding are both of green Irish marble. The following is the inscription:—

To the Glory of God and in Memory of
Sir CONSTANTINE HOLMAN, M.D.,
Who devoted many years of untiring care to the welfare of this College, of which he was ever a steadfast friend and benefactor.
VICE-PRESIDENT OF THE COLLEGE, 1892-1910.
TREASURER, 1887-1906.
Born, 23rd October, 1829. Died, 18th August, 1910.

The headmaster, the Rev. T. N. H. SMITH-PEARSE, gave the usual report of the school work, and referred to the loss sustained in the deaths of Sir Constantine Holman and Mr. Hugh E. Vardon, the latter of whom had made provision for the "Hugh Vardon" scholarships. He spoke of the services rendered to public schools by Sir Henry Morris in connexion with the recent decision of the General Medical Council that public schools could be recognised as places at which the preliminary sciences might be studied, the time thus given being counted towards the first year of the medical curriculum. The well-equipped laboratories of the College had attracted much attention from visiting members of the General Medical Council.

Dr. NORMAN MOORE, who distributed the prizes, said that all the 11 great medical schools of London had boys from that College. He referred in succession to various additions to knowledge made by the different medical schools of London, and gave a very interesting account of them. A colleague of Sir Henry Morris, Sir Charles Bell, had made the second greatest discovery in physiology—viz., the existence of separate nerves for motion and sensation. He particularly dwelt on St. Bartholomew's, which was connected with our great foundation of liberty, for three persons of the foundation had been among those who obtained Magna Charta for us. The work of Epsom College, he said, was divided, like the work of most public schools, into two halves of study—literature and science. He discussed the advantages of a literary training, and impressed on his hearers the delights which literature, when it came to form part of their minds, would confer throughout life. He made a point of the appeasing influence of literature, showing how the old-time hostility between Highlanders and Lowlanders in Scotland had been dissipated as a result of the literature of Sir Walter Scott. As to science, he spoke of its unifying influence on mankind, and instanced among other things Kitasato's work. He urged his hearers to be followers of both literature and science, and contemners of neither.

Sir HENRY MORRIS proposed a vote of thanks to Dr. Norman Moore, and emphasised the connexion already pointed out between such a school as Epsom and medicine, the association between medicine and the hospitals, and of these with the development of science.

In addition to the ordinary school prizes certificates were presented to the members of the Officers' Training Corps, Cadet Officer Crimby receiving the King's Coronation medal.

Among pupils of the school who have been distinguished in various medical fields since last Founder's Day are R. A. F. Eminson and W. R. Wilson, who took respectively second- and third-class honours at the Natural Sciences Tripos at Cambridge; Captain H. C. Winckworth, R.A.M.C., created Chevalier of the Crown of Italy; J. A. B. Hicks, appointed assistant pathologist and curator of Westminster Hospital Museum; C. W. Morris, appointed house surgeon at University College Hospital; B. F. Eminson, who gained the William Travers prizes at Charing Cross Hospital for medicine, midwifery, and public health; B. C. Maybury, appointed casualty officer and resident anæsthetist at St. Thomas's Hospital; and H. G. Dodd, passed Second M.B. Durham with honours.

THE LANCET.

LONDON: SATURDAY, AUGUST 5, 1911.

The National Insurance Bill.

THE House of Commons during the week has been debating in committee what must be to our readers the most critical parts of the National Insurance Bill now that Clause 8 of this intricate and far-reaching measure has been temporarily settled. Clause 12 dealt with the provisions to be made in the case of contributors who are inmates of institutions such as workhouses or asylums which are supported by public authorities, or such as hospitals and sanatoriums supported perhaps by charitable and perhaps by public funds. Clause 13 dealt with the benefits to be administered by approved societies or Local Health Committees, and under it the whole question of club medical practice came in for discussion. Clause 14 dealt with the administration of medical benefits.

The position and future of the voluntary hospitals under the Bill was the subject of a very earnest debate on July 31st when Clause 12 first came up for discussion. There were those, on the one hand, who argued that the Bill would greatly increase the work thrown on the hospitals, while at the same time the financial position of these charities would be seriously hampered. Mr. AUSTEN CHAMBERLAIN, taking this view and speaking for 44 hospitals in the midland counties, maintained that the financial loss that these institutions would incur would be in no case under 50 per cent., and in some instances would reach 75, 80, or even 90 per cent. He emphasised the detriment to the public that would result from any such paralysis of the training institutions in medicine and surgery, and suggested various ways in which this difficulty could be met. Mr. LLOYD GEORGE considered that the fears as to the adverse effect on hospitals were exaggerated, and that the lessening of work and the new sources of income that would be tapped had alike been left out of consideration. He argued further that there was no ground to suppose that the contributions of either employers or employed would be materially lessened. Mr. AUSTEN CHAMBERLAIN, however, moved an amendment providing that any payment under the Act shall, if the patient be an inmate or patient of a hospital or institution supported wholly or partly by voluntary subscriptions, be divided between that hospital or institution and his dependents (if any) in such proportions as the Local Health Committee may determine. Dr. CHRISTOPHER ADDISON, speaking on this amendment, predicted that soon after the scheme was established there would be a great addition to the work of the hospitals. This would necessitate the organising of a proper standard between the hospitals and the insurance scheme and some organisation maintained, through the Local Health Committee was the proper way to deal with this hospital question. The sick fund was not the right fund out of which to take the money. This point of view was strongly supported by several members, and Mr. CHAMBERLAIN'S amendment was withdrawn. An amendment by Mr. LLOYD GEORGE, however, was carried to enable an agreement to be entered into with a charitable institution by an inmate who has no dependents, whereby his sick benefit may be paid in whole or in part towards his maintenance in the hospital. The amendment further provides that in the case of a married woman entitled to sick benefit in addition to maternity benefit, no part of the maternity benefit shall be paid to the dependents, the whole accruing to the hospital for her maintenance. Clause 12 was then agreed to, the debate in the House well reflecting the diverse views and necessary uncertainties of all who know the circumstances of hospital administration. No one can say under this clause whether the hospital incomes from charity will so seriously decline that the State, in the character of an increasing contributor, may not ask for some amount of control that would alter at once the existing conditions of scientific work and medical education.

The consideration of Clause 13 produced a debate that will be for many years memorable in the medical profession. The main lines of the discussion can be followed in the summary of our Parliamentary correspondent, while the daily press has done full justice to its enormous importance. The clause, as we have said, dealt with the whole matter of club practice, inasmuch as under it fell the question of how far the administration of medical benefits should remain with the various existing medical aid associations and how far with the Local Health Committees created by the Bill. In a simple amendment Dr. ADDISON proposed to transfer the whole of the administration of medical benefits from the various approved societies to the Local Health Committees, and supported the strongly manifested medical views in a convincing speech. He demonstrated quietly but effectively the public danger of permitting the management of what amounts to a national health service to remain under the control of organisations of varying ideals and different standards; while once again, and from each part of the House, Members heard the difficulties under which club practice has for so long been carried on, its inefficiencies, and its injustices to the medical profession. The Chancellor of the Exchequer, who allowed that he was personally in favour of the amendment, left its fate to the opinion of the House, when by the remarkable vote of 387 to 15 the administration of medical benefits under the Bill was transferred to the Local Health Committees. This may be regarded as a triumph.

Around Clause 14 the principal fight was now centred, for it will be remembered that Mr. LLOYD GEORGE definitely promised, during the debate on Clause 8, that if anything during the consideration by the Committee of Clause 14 should make it necessary—that is to say, that if it was found out of order or inconvenient to discuss such matters as wage-limit on Clause 14—he would undertake to have Clause 8 re-committed. In this way Clause 14 became

of vital interest to the medical profession, as being concerned both with the definition and distribution of medical benefits. We may take it for granted that every one of our readers knows, at any rate, the general bearings of the clause as it stood in the Bill. There were down no less than 14 pages of amendments to this one clause. Three were, however, of outstanding importance. The Chancellor of the Exchequer had put down an amendment to provide that the Local Health Committee should be able to make arrangements with duly qualified medical practitioners for insured persons to receive attendance and treatment "in accordance with regulations made by the Insurance Commissioners," and had set out at considerable length the provisions of these regulations. In this manner the Chancellor of the Exchequer proposed to provide a fair distribution of insured patients among the practitioners willing to attend and treat them, while the right on the part of an insured person was also recognised to select from a properly prepared panel the practitioner by whom he wishes to be attended. These proposals of the Chancellor, it may be remembered, were foreshadowed in the statement which he originally made to ourselves. Dr. ADDISON had put down an amendment providing that, under the regulations made by the Insurance Commissioners, authority should be given to the Local Health Committee administering medical benefits to arrange that persons whose incomes exceeded the limit fixed by the Insurance Commissioners should make their own arrangements for receiving medical attendance and treatment, the Committee contributing from the funds out of which medical benefit is payable towards the cost of such medical attendance and treatment. Dr. ADDISON'S amendment therefore touched upon the difficult subject of wage-limit in a judicious and tentative manner. More in keeping with the views of many general practitioners was the amendment to the same clause of Sir PHILIP MAGNUS, which provided that no insured person should be entitled to medical benefit if his average income from all sources in the calendar year preceding the date at which he became entitled to sickness benefit exceeded the sum of £104. Our readers know already from the long and accurate accounts in the daily press what was the fate of these amendments. In spite of some able arguments from its proposer and from Sir ROBERT FINLAY, Sir ALFRED CRIPPS, Sir HENRY CRAIK, and others, Sir PHILIP MAGNUS'S amendment for the fixation at £104 of the maximum income of persons to receive medical benefits under the Bill failed to secure support. The amendments of Mr. LLOYD GEORGE and Dr. ADDISON were accepted, and under these the Local Health Committees will be the arbitrators with regard to the payment of fees for medical services by insured persons able to do so. The clause as amended represents, we believe, the general expectation of the medical profession.

METROPOLITAN HOSPITAL SUNDAY FUND.—The Lord Mayor presided over a meeting of the council of this Fund which was held on August 1st at the Mansion House to receive the report of the Committee of Distribution. It was recommended that £56,500 should be distributed among 166 hospitals, 59 dispensaries, and 32 nursing associations.

Annotations.

"Ne quid nimis."

THE POST OF CHIEF MEDICAL OFFICER TO THE LONDON COUNTY COUNCIL.

WE announced last week with much regret the impending retirement of Sir Shirley F. Murphy, chief medical officer to the London County Council, consequent on the reorganisation of public health administration of the Council. On August 1st it was resolved by the Council "that applications be invited by public advertisement from qualified persons whose age will not exceed 50 years on Jan. 1st, 1912, for the position of medical officer of health of the County of London and school medical officer for the County of London, at a commencing salary of £1250 a year; and that members of the staff be not precluded from making applications for the position."

CANCER RESEARCH.

THE investigation of the problems of cancer proceeds apace, and every year is adding to our knowledge of the facts connected with the disease. It is true that we have not yet answered the two chief questions, its cause and its cure, but our knowledge is increasing, and we have little doubt that before long it will receive still more important additions. In the last issue of THE LANCET was printed the ninth annual report of the Imperial Cancer Research Fund, and from that it will be seen that material additions have been made to our knowledge of the subject. The Fund is peculiarly happy in having the coöperation of the Registrar-General in obtaining statistics of the incidence of cancer, for societies for the investigation of cancer in other countries have so far depended for their statistics on figures collected by the voluntary assistance of the medical profession, and this leads to much unnecessary work. One important point that statistics have brought out is that the increase of cancer during the last decade is referable to certain anatomical regions and not to others; thus in males the increase is almost confined to the alimentary canal, while in females it mainly affects the same system, although the breast also suffers. Much has been done to investigate the relation between the tumour and the animal in which it appears, and it seems to be shown that it is not any special peculiarity of soil which favours the growth of a cancer, for transplantable tumours grow as well in normal animals as in those in which they first appeared; yet a spontaneous tumour can hardly ever be implanted into an animal in which there has arisen a spontaneous tumour. As to treatment, experiments have proved that it is to some extent possible to modify the growth of propagated cancer in animals, but it has not yet been found possible to arrest the growth of spontaneously arising tumours, and it is at least doubtful whether any real progress is to be made along these lines. Thus, this report, though not as yet affording us any clear indication of a method of preventing or destroying cancer, has distinctly advanced our knowledge, while it stimulates our hope of more direct results. In the present number of THE LANCET appears a paper by Mr. C. J. Bond of Leicester on the theory of cancer. He discusses fully the mode in which a cancer arises, and he adduces evidence which appears to him to support the conclusion that the complex cell changes which we associate with cancer have been built up by variational changes from the normal type, and that one of the stages passed through is represented by the various forms of benign growth. The formation of a tumour he regards as an adaptive response on the part of individual cells or cell-groups to

environmental change of three kinds—either a change in the stimuli which reach the cell from the outside world, or a change in nutrition, or in the activities in the other cells which compose the organism. The striking condition of the skin of the chest wall which is known by the name of "cancer en cuirasse," and which follows carcinoma of the breast, has always received much attention since it was described and named by Velpeau in 1838, though indeed it had been noticed by Howard in 1792. This condition has long been considered to be due to a malignant infiltration of the lymphatics of the skin; but lately this view has been challenged by Mr. W. Sampson Handley, who has done so much to advance our views of the mode of spread of malignant disease. Mr. Handley considers it to be an œdematous infiltration of the tissues due to lymphatic blocking. Sir George T. Beatson has submitted to careful histological examination the skin of a patient who was afflicted with this form of malignant disease, and has described the case very fully in another column. He is convinced by what he found that the ordinary view is correct and that the condition is certainly due to the spread of the malignant growth along the superficial lymphatics. It is possible that both views are correct and that the "cancer en cuirasse" has a different pathology in different cases, but it is certainly a matter that should be settled, for though the disease is not common it cannot be described as very rare. The problems of cancer are of vast importance, and though we are not in view of the end there can be no doubt that we are making progress. The difficulty lies in the complexity of the matter. A letter from Mr. Harry Lyle and a brief record of a case of recurrent melanotic sarcoma by Dr. Charles H. Lilley indicate other lines of observation to be followed. Mr. Lyle considers that the part played by simple inflammation on the prevalence of malignant disease is not sufficiently recognised, while Dr. Lilley's clinical note warns us of the long interval over which recurrency may take place. In every direction—clinical, biological, and statistical—there is great work to be done, and there is certainly a prospect ahead that the research of those who do it will receive better attention.

SUMMER CLOTHING FOR MEN.

DURING the long spell of magnificent weather that has been such a notable feature of this Coronation year the question of how to dress comfortably must often have perplexed the professional man confined to city life, and therefore to some extent forced to observe the conventions. Of late years there has certainly been a far less rigid adherence to these conventions than, say, 20 or 30 years ago; but the legal and medical professions, at any rate, have been on the whole conservative in this respect. With regard to headgear, the ordinary silk hat of the town dweller has long been criticised; but it must be admitted that in spite of many attempts to displace it in popular favour it remains the *sine quâ non* for certain society functions, though not now so indispensable for many others where a short time ago it was quite compulsory. We do not understand why the white tall hat has fallen out of use; it was lighter to wear, cooler to look at, and, so long as there was no black band to suggest that the wearer was in mourning for the last remnants of his respectability, its appearance was cheerful. Straw hats, that now form so large a proportion of the summer headgear of our town population, are certainly cool and light; the soft panama variety looks more comfortable, but not only is it much more expensive, but from a medical point of view it has a drawback. Whatever type of hat is worn the lining should be soft and elastic, so that there is no constriction anywhere round the brow; yet the panama offers so large a surface of attack for sudden wind that it must be tight to the forehead. The air-space above the head should be ventilated. Air itself is a bad conductor of heat, and if a deep layer of air is interposed between the head and the head covering, this forms the best protection against the effects of sun, provided, of course, that the air layer is kept cool by free ventilation. Although the tall hat to some extent retains its vogue, the double-breasted frock-coat has almost disappeared for daily use; but we still seem to cling to funereal black as the appropriate hue for city life. Our climate is so variable that we cannot always assume that a fine warm morning will be followed by a hot day; therefore we cannot always at the beginning of the day dress appropriately for the ensuing eight hours or so. Woollen stuff for material, and a loose fit, will secure comfort, and protection from extremes both of heat and cold. Light coloured garments are naturally cooler than dark ones, as they reflect instead of absorb the sun's rays; but a permeable texture is of much more importance than colour; it is necessary for health and comfort that free passage should be allowed for evaporation from the skin, inasmuch as this is the most effective physiological means of cooling the body. Dwellers in tropical countries generally wear white cotton clothing, very light in texture, being careful, however, to protect the head from the sun's direct rays by some form of turban, and the abdomen from chill by several folds of material, forming a cummerbund. With our variable climate we must be cautious, even in the hottest weather, how far we imitate the habits of people whose weather is so settled one way or another as to afford no topic of conversation. The male garments of the present day, save where a ceremonial occasion or a professional convention alters the circumstances, are loose in texture, not tightly fitting, and not necessarily dark in colour. They are hygienically reasonable and practically well adapted for the requirements of ordinary life, and we rejoice in the emancipation from actual discomfort that is implied in them for many of our readers. On the whole, it seems to us that the general tendency of modern fashions in masculine dress is towards reasonableness and comfort; while with regard to women, the increase in active exercise on their part that is now almost universal, and the spread of liberal views in education, have wrought a great change in all ranks of society.

THE OXFORD OPHTHALMOLOGICAL CONGRESS 1911

THE Oxford Ophthalmological Congress, which assembled at Keble College, Oxford, on July 13th last, was well attended, especially by members from the other side of the Atlantic. The business session was opened by an address of welcome by the Master of the Congress, Mr. Robert W. Doyne, reader in ophthalmology in the University of Oxford. He was followed by Professor Arthur Thomson, who dealt with the anatomy and physiology of the parts about the so-called "filtration angle" of the eye. His remarks were illustrated by a series of beautiful lantern slides. Dr. Lieven of Aachen then spoke on salvarsan, and he was followed by Major R. H. Elliot, I.M.S., of the Government Ophthalmic Hospital at Madras, who described lucidly his operation for trephining the sclera in cases of glaucoma. He has performed the operation on 403 eyes, and he analysed the results in 66 of the patients who had returned for observation. Major Elliot's very practical communication was well received by a crowded audience. The afternoon was devoted to the witnessing of operations performed by Mr. Charles Higgens of London and Dr. S. Lewis Ziegler of Philadelphia. The opportunity was also taken of inspecting a number of interesting eye cases assembled by the staff of the Oxford Eye Hospital. On the following day addresses dealing with subjects of interest

to ophthalmic surgeons were delivered by Professor Francis Gotch, Dr. StClair Thomson, and Dr. Francis Low. In the department of physiology, microscopical specimens, new instruments, ophthalmoscopic drawings, novel operations, and so forth were shown or demonstrated by Mr. H. Herbert, Major G. H. Fink, Dr. F. W. Edridge-Green, Dr. Wiston Baker, Dr. Thomson Henderson, Mr. R. Granville Waddy, Dr. Wendell Reber, Mr. P. E. H. Adams, Mr. R. J. Coulter, Mr. A. Bernard Cridland, Dr. T. Harrison Butler, Dr. Alexander G. Gibson, Mr. H. G. Armstrong, Dr. R. M. Truter, Mr. R. W. Doyne, Mr. Sydney Stephenson, and others. In addition to all this, many firms of repute showed the latest optical and surgical appliances. The social side of the Congress (always a feature at these meetings) was represented by the official dinner held in Keble Hall on July 13th, the chair being taken by Sir William Osler. The chief guests included the Vice-Chancellor of the University of Oxford and Dr. W. Lock, the warden of Keble College. Other affairs included a garden party at Balliol College, a visit to the Clarendon Press, and a smoking concert at Keble College.

THE SEA AND ITS VOTARIES.

DERIVED perhaps from their insular instincts there is a conviction in the minds of probably most British people that in matters regarding the recuperation of health there is nothing like the sea. "A blow from the briny" is a very common recommendation in slackness, and is meant to suggest that sea air is salutary. In not a few cases that is a delusion. It is true that as a rule there is nothing to be said against the quality of sea air; it is cool, pure, and clean, its supply is unlimited and ever fresh, and yet there may be found by medical men a reason for warning their patients about the drawbacks of the environment. The amusements offered at the seaside may be so varied compared with those of a quiet country life that the temptations of fishing, bathing, sailing, and water sports in general are difficult to resist, even although it is the visitor's common experience time after time that the sea does not exactly suit his general health. "I love the sea, but the sea somehow does not suit me," are the words with which such an individual sums up his case. It is a mischievous idea in the layman's mind that the remedy for all weak states of health is necessarily sea air. It is not always that the individual seeking strength can respond to the powerful and exciting stimulus of the bracing sea air; the digestive, secretory, circulatory, and eliminatory systems may be goaded to an energy of which they are incapable, by reason of a general debilitated condition; they are not able to do their work without exhaustion, and the last state of that man may be worse than the first. When sea air disagrees with the temperament digestive disturbances arise, and if the excretory functions are not in good going order, as in the case of the so-called bilious individuals and plethoric persons, headaches, giddiness, and a train of symptoms commonly summed up as "biliousness" makes an appearance. As a rule, the effect upon such cases of the less stimulating country air is magical. When that is so, it means that the great human machine and its complexes gain vigour best by repose. When strength has been restored in this way the medicine may be changed and the tonic air of the sea be prescribed with the greatest advantage. The matter is of some moment to the man who finds that a seaside holiday is a strain upon his means, for if sea air does not suit his particular needs he is not only throwing his hard-earned money away but receiving, it is possible, a set-back to his health. He may, however, justify his adherence to the seaside on the ground that it does his wife and children good—and he will be admired for that view—but in such a case the indications for him, at all events, are first the country or even a stay at home, and then the sea or mountain air. There can be no more satisfactory formula for the restoration of the hard-worked person than first a soothing, restful environment and then a tonic one. To plunge straight into the tonic, invigorating air of the seaside is an irrational procedure for many "run-down" cases. A stimulus given when there can be no response is a debit on what strength is left. It is no axiom, therefore, that the sea spells health.

RUPTURE OF THE SUPRASPINATUS TENDON.

IN the *Boston Medical and Surgical Journal* Dr. E. A. Codman has reported two cases of a very rare injury—complete rupture of the tendon of the supraspinatus. A healthy woman, aged 52 years, was referred to him by her medical attendant on March 7th, 1909. On Oct. 3rd, 1908, while hanging clothes on a line, she endeavoured to toss over a heavy blanket and felt something snap in her shoulder. She felt an intense pain and the arm fell and hung by her side. Her medical attendant found no thickening or ecchymosis and radiography was negative. Since then she had been unable to abduct the arm and suffered pain, especially at night. The symptoms generally were such as Dr. Codman has described in subacromial bursitis, but the following points were different. There was little atrophy of the deltoid, and it even appeared to be hypertrophied in consequence of apparent swelling of the joint beneath. Under the fibres of the deltoid, beneath the acromion, and over the joint, there was distinct deep fluctuation as if the whole bursa was full of fluid. Though the patient could not start abduction, when the arm was passively abducted to about 140° she could by a strong contraction of the deltoid for an instant prevent the arm from falling, but the slightest downward pressure caused it to drop to the side. External rotation was about one-half of normal. An incision was made between the fibres of the deltoid, and the roof of the bursa was found thickened with granulation-like bodies. On opening the bursa about half an ounce of straw-coloured fluid escaped. The floor was found to communicate with the joint, because practically the whole supraspinatus was torn from its insertion and retracted inwards. By holding the bursa wide open, pulling down the arm, and raising the elbow from the table the retracted end of the supraspinatus could be seen. This was caught with a tenaculum and pulled down enough to suture it with four heavy silk threads to the portion attached to the tuberosity. After the operation the arm ached at times, but she gradually recovered complete use of it. In March, 1911, function was perfect, and the only sign was that the deltoid was unusually prominent in consequence of fluid in the bursa. In the second case, an ostler, aged 40 years, who had always been strong, was seen on Dec. 21st, 1910. About three and a half months previously, whilst tightening the girth of a horse, he felt something give way in his shoulder and fell. He immediately lost power in his arm, but managed to complete saddling without raising it. His medical attendant thought he felt slight crepitus, but a skiagraph was negative. On examination it was first thought that he was suffering from the adherent type of subacromial bursitis, but the same conditions were found as in the previous case, and also there was a distinct depression just above the tuberosity of the humerus. Rupture of the tendon of the supraspinatus was diagnosed. On operation straw-coloured fluid escaped from the bursa, which communicated with the joint. The supraspinatus had retracted so far that it could not be seen, and with some difficulty the tendon was caught with a tenaculum and pulled forward. It was sutured to the tuberosity with

heavy silk prepared with paraffin. Abduction was not allowed for three weeks, and then the patient began to use the arm. On March 25th, 1911, he could easily place his hand on the top of his head, but full abduction was still weak. The function of the supraspinatus was as good as in the previous case at the same period after operation. In only one other case has Dr. Codman diagnosed complete rupture of the supraspinatus. The patient, a powerful man, who declined operation, four years after the injury was unable to start abduction. Partial rupture of the tendon of the supraspinatus Dr. Codman regards as common. He has no difficulty in finding it in the dissecting room. It is usually not more than half or a quarter of an inch in breadth, and does not interfere much with the function of the arm. Such ruptures are best considered with the subacromial bursitis, which they cause. They are beneath the serous base of the bursa, which may or may not be torn through. If straw-coloured joint fluid is found on opening the bursa careful search will usually demonstrate a small opening into the joint at the point of rupture. Usually suture is unnecessary, and healing takes place if the inflamed portion of bursa over the rupture is clipped away with scissors.

SUMMER HEALTH PROPAGANDA IN AMERICA.

THE Chicago Department of Health is essentially an educational department. It teaches what is too often neglected in schools, and, what is equally necessary, it attempts to teach those who are too old to go to school. Every week the department issues and sends free of charge to "those who should be benefited by it" a small bulletin popularly written to disseminate the advice and information the sanitary authorities have to give. At the present time this consists of practical suggestions for coping with the heat, and, above all, for preventing the diseases that are so fatal among infants and children during the summer months. Then a big poster has been placarded with illustrations showing the typhoid dangers of summer resorts. In one corner the railway platform and departing train is depicted. Then comes the country road with manure carts and motor-cars, and the dirty farmyard where children are drinking from a pump close to the manure heap. Further on there is a river with a water intake and people bathing close to a sewer outfall. While yet further under the shade of trees a picnic party is enjoying a meal in the open air, but flies are coming over the food straight from a privy that is close at hand. Finally, what is called Summertown Hotel derives its water-supply from a well dug at a lower level than the graves of the cemetery that is close by. In August and September there is generally an increase of typhoid fever at Chicago. This coincides with the return from such summer resorts of many inhabitants. They are therefore warned not to go where there are shallow wells near barn-yards or where the water-supply comes from a river that receives sewage. When there is reason to suspect the water it should be boiled and a sample sent to Chicago for analysis. Automobile parties should carry their own water-supply with them. There are special bottles and other contrivances that will keep the water cool. Milk should be pasteurised and the farms whence it comes visited, and not patronised if they are not clean. Any place swarming with flies must be avoided; flies are clear evidence that there is filth in the neighbourhood. "Clean, safe food cannot be served in a dining-room in which there are swarms of flies." Chicago, with its good water-supply and the care taken in watching over the milk-supply, is much safer than summer resorts that have sanitary defects. But there are some summer resorts where the drinking water is pure, the bathing water clean, the scavenging so well done that there are hardly any flies. These places should be encouraged by extensive patronage. The newest development in Chicago teaching is the efforts made to make the public understand the danger of house-flies. "Filth *plus* flies and fingers equals fever" is a new sort of arithmetic now taught. Newspaper wrappers are printed bearing the picture of a fly and the inscription "Kill that fly," when the Americanism "swat" is not used. Then we have maxims such as "Don't forget that one fly swatted now will save a million swats two months hence." Or else the authorities resort to such rhyme as—

> "This is our summer battle-cry,
> Muzzle the dog; swat the fly,"

followed by the warning, "Where flies multiply there the babies die." This is all good work, particularly as the householder is told how to avoid the flies denounced as so dangerous. A little common kerosene mixed with crude carbolic acid, 1 per cent. of acid, or 1 ounce of acid to a quart of kerosene sprayed upon garbage will prevent flies coming and kill eggs and larvæ. Manure that cannot be covered over should be treated with one pound of sulphate of iron in a gallon of water. It does not affect the value of the manure, but kills the maggots. Still, the best of all precautions is the prompt removal of garbage or manure.

THE library and offices of the Royal Society of Medicine are closed until Sept. 1st.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on July 27th, Sir Henry Butlin, the President, being in the chair. It was resolved to grant Diplomas of Membership to 95 successful candidates, and it was also resolved to grant, in conjunction with the Royal College of Physicians of London, Diplomas in Public Health to 20 successful candidates. Newnham College was added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, biology, and physics. A letter to the President from Dr. Edmund Hobhouse was read, asking the President, on behalf of the medical and surgical staff of the Sussex County Hospital, to accept for the College a complete skeleton of mollities ossium and such other specimens as should be considered desirable. The best thanks of the Council were voted to the staff of the Sussex County Hospital for their gifts.

THE "ENSEIGNEMENT MEDICO-MUTUEL INTERNATIONAL."—The session of this body, generally known as the "E.M.I.," will be held in Scandinavia from August 12th to 30th, and, thanks to the efforts of Professors Ehlers (Copenhagen), Johannessen (Christiania), and Wanrinski (Stockholm), promises an interesting programme. The following visits have been arranged:—At Copenhagen: Rigs Hospital, the Modern Hospital of Mont l'Evêque (1300 beds), the Finsen Institute, the Institute of Serotherapy, the communal establishments of hygiene, schools, sewerage plants, the modern municipal dairy (to be visited at 2 P.M., when in active work), a Danish gymnastic course for women, and a conference on medical education in Denmark. At Christiania: the State Hospital, the Modern Communal Hospital, the Dikemark Insane Asylum, the municipal school, the city sanitary institutions, and the climatic sanatoriums. At Stockholm: the special hospital for contagious diseases, the Swedish Hospital for the Care of Children, the primary school, the new abattoir, the Bureau of Hygiene, the public baths, the water-supply, and the new sanatorium for tuberculosis. Other interesting topics for study in applied hygiene will be the schools for the crippled, physicotherapy, alcoholism, and leprosy at Bergen; the working of the refuse incinerator and the Hospital for Tropical Diseases at Hamburg; the Institute and the Museum of Hygiene at Berlin. Finally, a visit will be paid at the close of the session to the International Exhibition of Hygiene at Dresden. For further information application should be made, enclosing an international postage coupon, to the headquarters of the "E.M.I.," 12, Rue François Millet, Paris, XVI^{e}.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on July 27th, Sir THOMAS BARLOW, Bart., K.C.V.O., being in the chair.

The following gentlemen having passed the required examinations were admitted Members of the College: Hildred Bertram Carlyll, M.D. Cantab., L.R.C.P., Ivor Jones Davies, M.B. Lond., Filippo Melandri, M.D. Bologna, John Parkinson, M.D. Lond., L.R.C.P., Edward Palmer Poulton, M.B. Oxon., Frederick George Thomson, M.D. Lond., L.R.C.P., and Arthur Gurney Yates, M.D. Edin.

Licences to practise physic were granted to 97 gentlemen who had passed the necessary examinations.

In conjunction with the Royal College of Surgeons of England Diplomas in Public Health were granted to the following candidates:—David Main Baillie, Samuel Lindsay Brohier, John Phillip Henry Davies, Reginald Inglis Douglas, William Henry Wilson Elliot, Lieutenant-Colonel, I.M.S., D.S.O., William Charles Dillon Hills, James Bonnell Howell, John Johnstone Jervis, Robert Henry Hatten Jolly, Thomas McCririck, John McKenzie, Captain, R.A.M.C., Bernard Moiser, Henry Pratt Newsholme, Jitendra Nath Rai, Bikrama Jit Sahni, Percy Herbert Stirk, William Reginald Margetts Turtle, Ernest Alfred Freear Wilkes, Charles Frederic Wood, and William Allan Young.

On the nomination of the President, the Council, and the Library Committee the following elections were made:—Censors: Dr. John Mitchell Bruce, Dr. David Bridge Lees, Dr. Samuel Hatch West, and Dr. Percy Kidd. Treasurer: Sir Dyce Duckworth, Bart. Emeritus registrar: Dr. Edward Liveing. Registrar: Dr. Joseph Arderne Ormerod. Harveian librarian: Dr. Norman Moore. Elected members of the library committee: Sir William Allchin, Dr. Humphry Davy Rolleston, Dr. Arthur Francis Voelcker, and Dr. Raymond H. P. Crawfurd. Curators of the museum: Sir William Henry Allchin, Dr. Seymour John Sharkey, Dr. Frederick William Andrewes, and Dr. William Hunter. Finance committee: Dr. Howard Henry Tooth, C.M.G., Dr. George Newton Pitt, and Dr. Hector William Gavin Mackenzie. Examiners: Chemistry—Mr. William Holdsworth Hurtley and Mr. Hugh C. H. Candy. Physics—Mr. Alfred Henry Fison and Mr. Herbert Stanley Allen. Practical pharmacy—Dr. Arthur Philip Beddard, Dr. Edmund Ivens Spriggs, Dr. William James Fenton, Dr. Alfred Ernest Russell, and Dr. Arthur Robertson Cushny. Physiology—Dr. Marcus Seymour Pembrey and Mr. Francis Gotch. Anatomy—Dr. Christopher Addison. Medical anatomy and principles and practice of medicine—Dr. Wilmot Parker Herringham, Dr. Richard Grainger Hebb, Dr. Lauriston Elgie Shaw, Dr. Judson Sykes Bury, Sir Hugh Reeve Beevor, Dr. James Galloway, Dr. Arthur Francis Voelcker, Dr. Wilfred James Hadley, Dr. Cyril Ogle, and Dr. Wilfred John Harris. Midwifery and diseases peculiar to women—Dr. Charles Montague Handfield-Jones, Dr. Arthur Hamilton Nicholson Lewers, Dr. Arthur Francis Stabb, Dr. George H. A. Comyns Berkeley, and Dr. John Shields Fairbairn. Public health: Dr. Henry Richard Kenwood (Part I.) and Dr. Louis C. Parkes (Part II.). Tropical medicine: Dr. Frederick William Andrewes (bacteriology) and Dr. William John Ritchie Simpson, C.M.G. (diseases and hygiene of the tropics). Murchison scholarship: Dr. Sidney Philip Phillips and Dr. Hector William Gavin Mackenzie.

The following communications were received from: 1. The clerk of the Privy Council, enclosing copies of the programme of the Third International Congress for the Study and Prevention of Infantile Mortality to be held at Berlin, Sept. 11th–15th next. 2. The Brighton and Sussex Medico-Chirurgical Society, concerning the extent of practice by unqualified persons, and the dangers arising therefrom. 3. The Imperial Merchant Service Guild, concerning tests for colour vision. 4. The registrar of the General Medical Council, enclosing a report from the Public Health Committee of the Council, concerning changes in the regulations for the Diploma in Public Health. (This matter was referred to the Committee of Management). 5. The secretary of the Royal College of Surgeons reporting proceedings of the Council of that College upon June 8th and July 13th last.

Dr. StClair Thomson was appointed a delegate of the College to the International Laryngo-Rhinological Congress to be held at Berlin, August 30th to Sept. 2nd of this year. On the nomination of the Council, Dr. S. J. Sharkey was appointed a representative of the College in the Senate of the University of London, Sir William H. Allchin having resigned.

Sir William S. Church, Bart., K.C.B., was, on the recommendation of the Executive Committee of the Imperial Cancer Research Fund, re-elected a member of that committee.

Dr. Arthur Newsholme was re-elected a member of the Executive Committee of the Imperial Cancer Research Fund.

The PRESIDENT announced that the Council had recommended that the Baly medal for distinction in the science of physiology should be awarded to Dr. William Dobinson Halliburton. He also announced that the Bissett Hawkins medal in hygiene had been awarded to Dr. Clement Dukes for his work on the Hygiene of Public Schools.

A report was received and adopted from the committee appointed to consider a paper, entitled "Suggestions to Medical Practitioners respecting Certificates of Causes of Death," submitted by the Registrar-General.

A report was received and adopted from the committee appointed to consider a letter from the Medico-Psychological Association of Great Britain and Ireland in which was suggested the institution of a Diploma in Psychological Medicine. The report was as follows:—

The committee appointed by the Comitia on March 2nd, 1910, to consider the request of the President of the Medico-Psychological Association that the College should institute a special Diploma in Psychological Medicine, reports as follows:—

That whilst it is inexpedient to establish a special diploma in one branch of medicine, it is desirable that medical practitioners practising in insanity should be encouraged to obtain a high standard of knowledge and efficiency in their profession.

The committee therefore recommends that Members of the College who desire to do so, should be permitted to present themselves for a further examination in Psychological Medicine, and, if they satisfy the examiners, have their success recorded on the letters testimonial of their Membership.

To this end the committee recommends the enactment of the following regulations:—

PROPOSED REGULATIONS.

1. Any Member of the College may ask permission to present himself for further examination in Psychological Medicine.

2. The further examination in Psychological Medicine shall be held on such dates as the Censors' Board may from time to time determine.

3. Candidates shall be examined in:—(1) Psychology, and the Study of Conduct in relation to Mental Disorder; and (2) Psychological Medicine, and the Jurisprudence of Insanity.

4. Candidates shall be examined by written questions on each of the subjects mentioned above; the practical knowledge of the candidates shall be tested in an Institution for the Insane, and the candidates shall be examined *vivâ voce* in all the subjects of the examination.

5. On the letters testimonial of every Member who satisfies the examiners in Psychological Medicine a statement to that effect shall be engrossed, and signed by the examiners, accompanied by a certificate by the registrar.

Form to be engrossed on the Letters Testimonial.

A.B. die mensis A.D.
in Medicinâ Psychologicâ examinatus satisfecit nobis Examinatoribus.
Ita testamur { A.B. / C.D. } Examinatores.

6. Every Member who satisfies the examiner will be permitted to add to any mention or description of his Membership words purporting that he obtained distinction in Psychological Medicine.

The annual report of the Imperial Cancer Research Fund was received.

The report dated June 27th from the Committee of Management was received and adopted. The report recommended:—

1. That the Darlington Technical College be added to the list of institutions recognised by the Examining Board in England for instruction in Chemistry and Physics.

2. That the Portsmouth Fever Hospital, Milton, be added to the list of fever hospitals recognised by the board for instruction in infectious diseases.

3. That Washington University, Washington, U.S.A., be placed on the list of universities whose graduates in medicine are admissible to the final examination of the board under the conditions of paragraph IV., Section III. of the Regulations.

4. That until further notice an additional examination in Part I. for the Diploma in Public Health be held in the month of April in each year.

Another report, dated July 11th, from the Committee of Management was received and adopted. The report recommended:—

1. That the following institution, which has been visited by a member of the committee and reported as fulfilling the requirements of the board, be added to the list of institutions recognised by the Examining Board in England for instruction in Chemistry, Biology, and Physiology: Newnham College.

2. That Dr. Norman Moore be appointed the Visitor to the examinations of the Egyptian Medical School for the examinations to be held in December next.

After some further formal business the PRESIDENT dissolved the Comitia.

THE RADIUM INSTITUTE.

THE Radium Institute, which was founded, at the suggestion of King Edward two years ago, by Sir Ernest Cassel and Viscount Iveagh, is to be formally opened on August 14th. This institution is devoted to the work of scientific research and to the skilled application of radium in the treatment of disease. On March 23rd the institute was inspected by His Majesty King George, who was accompanied by the Queen, and on July 10th it was again honoured with a visit by their Majesties Queen Alexandra and the Empress Marie Feódorovna of Russia. On the occasion of these visits demonstrations were given by the medical superintendent, Mr. A. E. Hayward Pinch, and by Mr. W. Lester Alton, director of the chemico-physical laboratories. Quite recently Madame Curie has isolated radium, and describes it as a white metal oxidising

FIG. 1.

The façade of the Radium Institute.

in water, burning paper, turning black on exposure to air, and having the property of adhering firmly to iron. It is, however, with the compounds of radium that treatment is carried out, and we find on inquiry that the Radium Institute in London has stored in its building a larger supply of radium than is possessed by any other institution in the world; and so priceless is the commodity from a commercial point of view that we hesitate to estimate in terms of pounds, shillings, and pence the value of the precious element at 16, Riding House-street.

The Radium Institute and the Medical Profession.

A letter dated May 6th, 1911, from Sir Frederick Treves, chairman of committee, addressed to the medical superintendent, so exactly indicates the line of professional conduct to be followed in work at the institute that we freely paraphrase it. The letter stated in the first place that it was desirable that the medical superintendent should limit as far as possible his responsibilities in connexion with the patients who attended at the institute to indication of the specific treatment to be employed in each case, as well as the details of that treatment; to ensuring that the treatment was carried out; and to declining to treat any unsuitable case. The diagnosis of the malady from which the patient is suffering will rest with the practitioner introducing the patient, and should the medical superintendent not agree with the diagnosis submitted he will discuss the matter with the practitioner; and should a third opinion be considered necessary, will call in, when the patient is a gratuitous one, a member of the honorary consulting staff. When difficulty as to diagnosis arises in the case of a paying patient, and a third opinion is needed, the practitioner will name the consultant unless he wishes to leave the nomination to the medical superintendent. But the patient must pay the fee of the consultant, no matter whether the consultation is held at the institute or at the consultant's house. In no case will the medical superintendent, acting on behalf of the institute, accept a fee for taking part in any consultation, and the honorary consulting staff, as a staff, are concerned only with the gratuitous patients treated at the institute, and no fee of any kind will be charged to such patients for any treatment carried out in the institute. For all special treatment requiring, for example, a gynæcologist, the paying patient must pay such fees as are usually paid for like services. The medical superintendent's responsibility for the care of patients does not, of course, extend outside the institute.

Sir Frederick Treves's full letter is so simple and clear a document that it might well be framed and hung in the corridors of the institute, if only to convince everyone that the institute cannot be made use of to put fees into the pockets of any specially selected members of the medical profession.

Regulations for Patients.

The following regulations for the admission of patients have been drawn up:—

Patients will only be treated at the Radium Institute in association with, and through the introduction of their medical adviser. At their first visit they must either be accompanied by their medical adviser or must bring with them his written statement of the case giving details of the treatment already employed. New patients will be seen on Tuesdays and Thursdays between the hours of 10 A.M. and 4 P.M., but the exact day and hour of any consultation must be arranged previously (by letter) with the medical superintendent, to whom all communications should be addressed.

Medical practitioners are cordially invited to be present during the treatment of their patients, and to assist in the same whenever practicable.

The medical superintendent on receiving a first inquiry from an individual for treatment posts off the following letter in reply:—

DEAR .....,—In reply to your letter of inquiry respecting the Radium Institute, I beg to inform you that patients can only be treated in association with, and through the introduction of their medical adviser. I shall, therefore, be pleased to forward full particulars to your medical man if you will favour me with his name and address.—Yours truly,

A. E. HAYWARD PINCH, Medical Superintendent.

On receiving an answer giving the name of the medical practitioner the medical superintendent writes to that gentleman in the following terms:—

DEAR .....,—In compliance with the request of your patient, M ..... I beg to forward you herewith particulars of the conditions under which patients are admitted to the Radium Institute for treatment, and the charges for the same.—Yours truly,

A. E. HAYWARD PINCH, Medical Superintendent.

The charges referred to are as follows:—

	£	s.	d.
For first consultation at the Radium Institute, the patient being accompanied by his or her medical adviser, or bringing from such medical adviser a written history of the case...	2	2	0
For treatment:			
1. When lesion is situated on external surface of body			
(*a*) With apparatus containing not more than 50 milligrammes of radium.			
Per sitting	2	2	0
(*b*) With apparatus containing more than 50 milligrammes of radium.			
Per sitting	4	4	0
2. When lesion is situated in cavity—e.g., larynx, uterus, urethra, &c.			
Per sitting	5	5	0

In regard to necessitous patients the following letter is sent to any such on application for free treatment:—

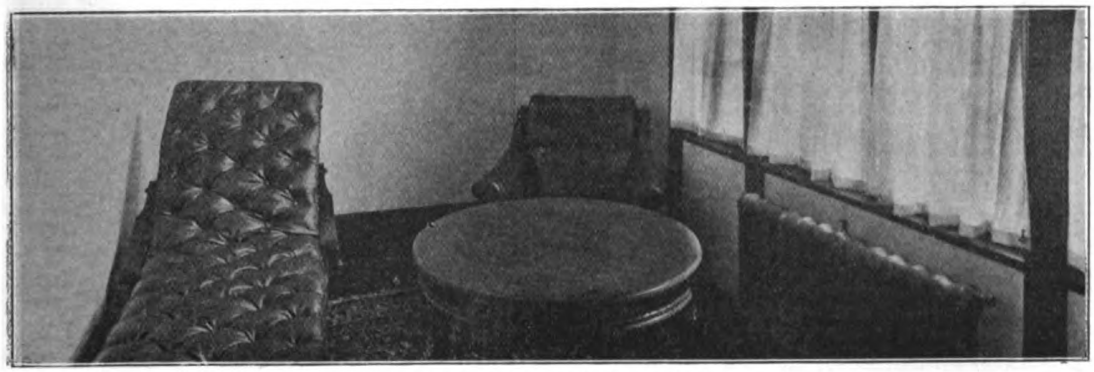
DEAR .....,—In reply to your letter of inquiry, I beg to inform you that necessitous patients are only admitted to free treatment at the Radium Institute if certified by their medical adviser to be suitable subjects for charity. If you will, therefore, be good enough to ask your medical man to fill up the enclosed certificate, and forward it to me, together with any notes with which he may furnish you, I will write fixing a day and hour for your attendance at the Radium Institute.—Yours faithfully,

A. E. HAYWARD PINCH, Medical Superintendent.

FIG. 2.

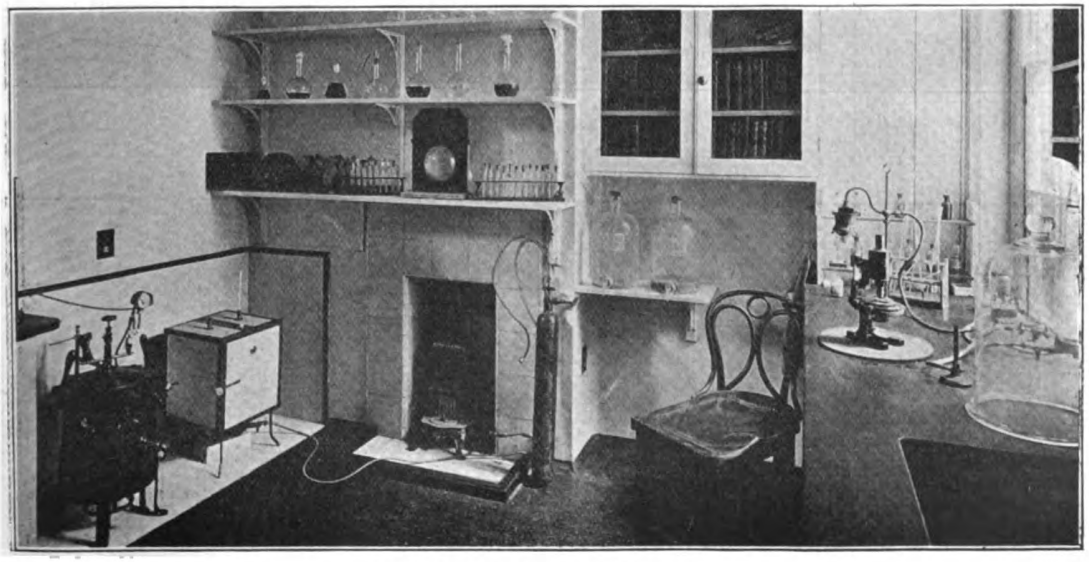
A consulting room, Radium Institute.

FIG. 3.



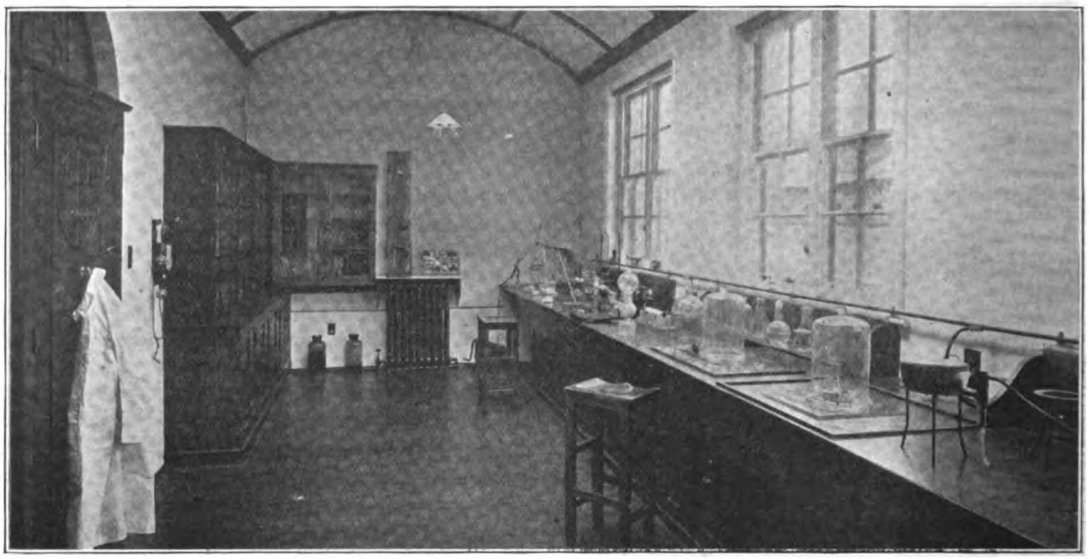
A cubicle for treatment, Radium Institute.

FIG. 4.



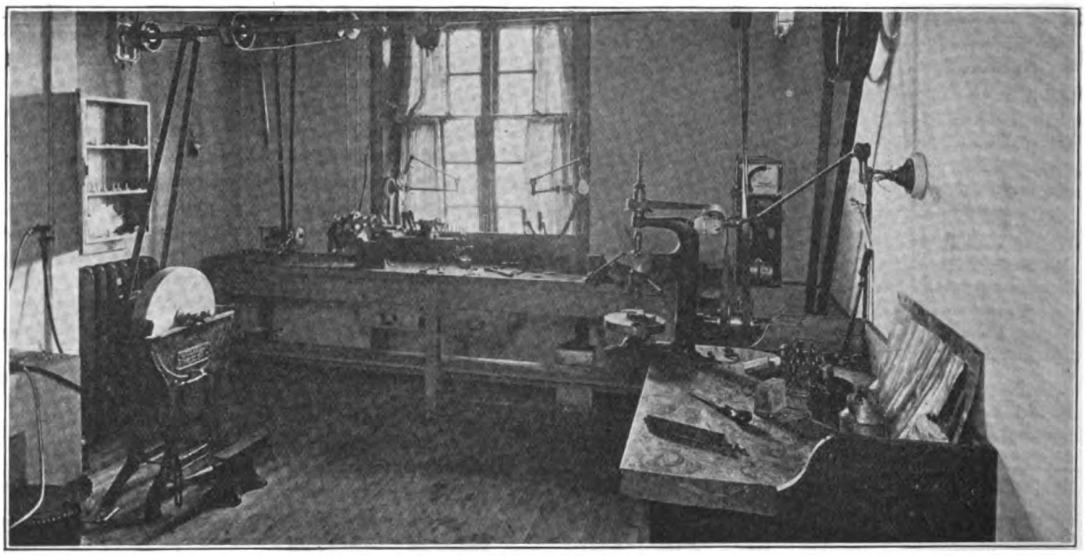
Pathological laboratory, Radium Institute.

FIG. 5.



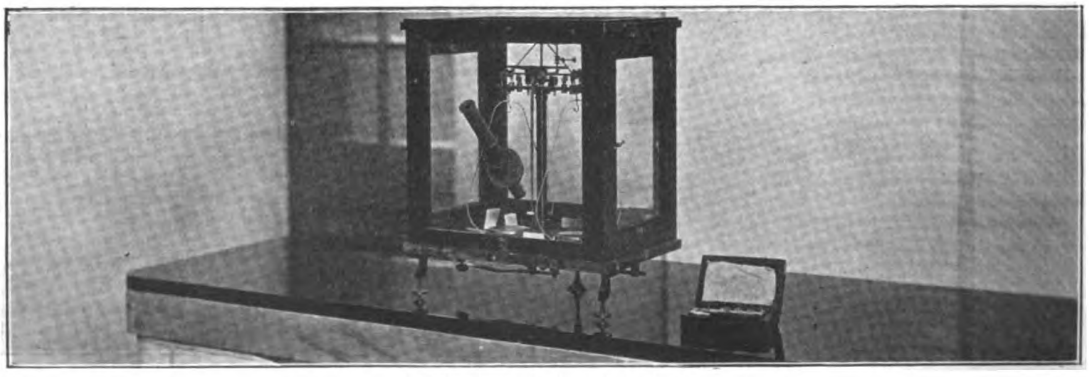
Chemico-physical laboratory, Radium Institute.

FIG. 6.



Engineer's shop, Radium Institute.

FIG. 7.



Alton's balance, Radium Institute.

The certificate referred to runs thus:—

I HEREBY CERTIFY THAT

M.....
residing at.....
is suffering from..... ; that ..... is in necessitous circumstances, and is to the best of my knowledge a fit and proper case for gratuitous treatment at the Radium Institute.

Name of Practitioner.....
Qualification.....
Address.....
Date.....

Medical practitioners are cordially invited to be present during the treatment of their patients, and to assist in the same whenever practicable.

Medical men desiring information concerning the activity of specimens of radium salts can have the necessary information supplied from the chemico-physical laboratory of the institute at the following scale of fees for the examination of radium salts and the examination or preparation of radium applicators.

	£	s.	d.
(*a*) Measuring the amount of radium contained in specimens of radium salts	2	2	0
(*b*) Measuring the amount of radium contained in various forms of radium applicators	2	2	0
(*c*) Analysis of the rays emitted from various forms of radium applicators	5	5	0
(*d*) Preparation of radium applicators. (To be made for medical men only.)			
1. Circular or square discs	2	2	0
2. Cylindrical and special designs	5	5	0
(*e*) Examinations of water, minerals, and the like, for radioactivity	2	2	0

Whilst reasonable care will be taken of all specimens and apparatus sent to the institute for examination, &c., it must be clearly understood that the examination of such specimens and apparatus is undertaken at the owner's risk, and that the institute cannot accept any liability with regard to the same.

Entering Riding House-street from Portland-place, the façade of the building of the institution presents itself as peculiarly suitable to the style of the architecture in its neighbourhood. Our illustration (Fig. 1) affords an excellent representation of the building.

On entering the institute we find on the ground floor the necessary accommodation provided for the reception of patients both well-to-do as well as necessitous, and for the diagnosis of the cases presented. The first floor is fitted up for the treatment of patients, the second floor is devoted to scientific research, and the third floor is reserved for the workshops and the tools required to make the institution quite independent of all outside help in the matter of apparatus of all kinds, scientific and otherwise.

The consulting-rooms, one of which is shown in Fig. 2, are five in number on the ground floor, two of them being for well-to-do patients, two for the poor, and one for gynæcological examination. The equipment throughout the building is of the most aseptic character, and this characteristic of the place is well seen in the out-patient waiting-room, where the walls are tiled, the corners rounded, and the floor made of teak.

A further indication of the modern equipment of the institution is noticed in the fact that one of Tilley's chairs specially constructed for Killian's intubation method is already installed.

The first floor of the building is given up to treatment of patients, there being cubicles for treatment for the poor and for the rich. Fig. 3 indicates better than a description in words the style of one of these cubicles.

On the second floor ample accommodation is supplied for scientific research. Fig. 4 shows the pathological laboratory, and anyone acquainted with modern research would notice at once the latest pattern Zeiss microscope fitted with the most reliable appliances for dark-ground illumination; an up-to-date Minot microtome will not escape observation, nor a Leitz microtome freezing apparatus. On the same floor Mr. Alton, the director of the chemico-physical work, has his laboratory, and Fig. 5 indicates very clearly the excellent arrangements provided for this important branch of scientific study. The photographic room deserves a word of praise, and indeed it must have been fitted up absolutely regardless of expense.

On the third floor is a neat and well-equipped engineer's shop (Fig. 6), in which all the apparatus required for the work of the institution is manufactured.

The basement contains a room specially fitted for Mr. Alton's balance. This balance (Fig. 7) rests on a slab supported by two pillars, and these pillars pass through the foundations to such a depth that absence of any vibration is assured. Close to this room is the commodious safe for the storing of the radium.

The Radium Institute has for its patron His Majesty the King, and its presidents are the Viscount Iveagh and Sir Ernest Cassel. The Executive Committee is composed of Sir Frederick Treves, the Hon. W. E. Guinness, Mr. Felix Cassel, the Hon. J. Strutt, Sir Lauder Brunton, Sir William Ramsay, Sir Malcolm Morris, and Sir Joseph John Thomson. The honorary consulting staff consists of Mr. W. H. Clayton-Greene, Dr. Herbert French, Mr. W. H. H. Jessop, Dr. J. H. Sequeira, Dr. W. H. H. Tate, Mr. Herbert Tilley, and Mr. J. W. Thomson Walker. The technical assistant is Mr. John F. Holding, and the architect is Mr. T. P. Figgis, F.R.I.B.A.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was held on July 13th and 14th at the Royal College of Physicians, Dublin, under the presidency of Dr. JOHN MACPHERSON.

Regret was expressed at the resignation of the veteran editors of the Journal of the association, Dr. H. Rayner and Dr. A. R. Urquhart, and Mr. H F. HAYES NEWINGTON (the treasurer) expressed the high appreciation by the association of their prolonged and able services.

Mr. HAYES NEWINGTON moved the adoption of the report of the Committee on the Medical Inspection of School Children and paid a high tribute to the good work done at Darenth.

The installation of the new President, Dr. William R. Dawson, followed a vote of thanks to the out-going President, Dr. Macpherson. Dr. DAWSON presented, on behalf of the subscribers, a silver casket and an illuminated address to Dr. Edward Courtenay, on his retirement from the office of Inspector of Lunatic Asylums in Ireland.

Dr. DAWSON, in his presidential address, discussed the geographical distribution of insanity in Ireland and compared it with that of other conditions, such as density of population, pauperism, and poverty, emigration, the death-rate (both general and tuberculous), criminality, and alcoholism, and illustrated his remarks with statistical diagrams. These showed that insanity prevailed in the agricultural counties, chiefly of the south and east, Ulster and Connaught being relatively free, and that pauperism had a similar distribution. It bore some, but not a marked, relation in local incidence to that of the emigration rate, criminality, and chronic alcoholism, but none, apparently, to density of population, rateable value of land, proportion of aged persons, death-rate, or drunkenness. The amount of insanity ascribed to alcohol in Ireland was small. Secondarily, it was found that pauperism and poverty were not necessarily alike in distribution. The President was hopeful for the future.

Dr. WILLIAM GRAHAM (Belfast) read a paper on Psychotherapy in Mental Disorder, a subject which, though little discussed here, had attracted widespread attention in France, Germany, and America, where men of international reputation had applied the methods with, it was said, singular success. The classical methods of psychotherapy were: (*a*) suggestion, waking and hypnotic; (*b*) therapeutic conversation; (*c*) psycho-analysis; (*d*) occupation; and (*e*) re-education. (*a*) Suggestion as a therapeutic agent had been over-estimated; nevertheless, it was of value in certain types—e.g., alcoholism, sexual perversion, obsessions, phobias, multiple personality, and other forms of mental disturbance. (*b*) Therapeutic conversation (Dubois's method) consisted in explaining to the patient the origin and significance of his disorder so that the explanation became persuasion. This method was valuable in the less intractable types of disorder before the perverted idea had become too deeply rooted. But the patient was liable to get too dependent on the therapeutist, so that when removed from his influence a relapse was likely; and it was applicable only to a group of milder cases. (*c*) Psycho-analysis. This method (identified with the name of Freud) rested on the view that many disorders arose from the inability of the personality to assimilate certain experiences, such as those of a painful emotional character, and from the conflict thus set up between opposing groups of thought. The therapeutics consisted in making

clear to the patient the source of this conflict by bringing into the clear light of consciousness the submerged factor, and in thus re-establishing mental unity and integrity. This method had given best results in long-standing obsessions, psychasthenias, phobias, hysteria, and paranoid states. Freud's view over-emphasised the element of sexuality. The method was applicable to some types, but the tendency to confine psychotherapy to it must be rejected. (*d*) Occupation meant all methods that distracted the patient's attention from himself. Its main value lay in its power to train the attention. (*e*) Re-education, in Dr. Graham's opinion, was the crown of the whole psychotherapeutic movement. In some cases it implied suggestion and therapeutic conversation, in others psycho-analysis, in still others occupation; in all it sought to restore the normal psychic balance by teaching the patient how to regulate emotion, train the power of will, and direct properly his attention. In the primary stages of all mental developments, in the formation of character, in the beginning of pathological states, the value of this method could not be over-estimated.—The paper was discussed by Dr. MARY MACKENZIE, Dr. C. H. BOND, Mr. J. O'CONOR DONELAN, Dr. E. MAPOTHER, Dr. HELEN BOYLE, Dr. T. W. MCDOWALL, Dr. J. G. SOUTAR, and Mr. M. J. NOLAN.—Dr. GRAHAM replied.

Dr. M. A. COLLINS (Ewell Colony) read a paper entitled "Causes of Sudden Death in Epilepsy and some Points in the Treatment of Epilepsy." Dr. Marchand had said that, apart from accident, an epileptic fit never caused death; yet that authority had collected 15 cases of sudden death during a fit—two of them in his own experience. The epileptic colony at Epsom had been open seven years, and there 30,000 fits were recorded during the past year. Probably 200,000 fits had occurred since the establishment was opened; and 10 cases were recorded in which death occurred during, or almost immediately after, a fit. In 2 there was choking after food, and 1 death ensued from suffocation during a fit at night time. Of the 7 cases remaining, in 1 there was mitral and aortic disease together; in 2 there was adherent pericardium; in 3 advanced fatty disease of the heart, with evidence of chronic heart failure; and in the other cerebral tumour was found. He regarded the colony treatment as ideal, and it resulted in a great physical improvement of the patients. There would shortly be opened at Ewell a new hospital villa of the most recent type, to accommodate 50 acute patients. His results from changes in dietary had been somewhat contradictory, but he found fewer fits per night after a meat dinner than after fish. The results favoured a diminution of meat, but not its absence. The effect of bromides had been very variable. In two cases which were intolerant of bromide opium was proving useful. Digitalis in one who had a large number of fits brought about an 80 per cent. reduction in the fits.—The PRESIDENT said that when investigating the condition of the city of Dublin for the Royal Commission on the Feeble-minded he found that epilepsy was regarded as more of a family disgrace than was insanity. It was considered that knowledge of a fit on the part of the employer would lose the man his work. Expense was an important matter for a poor country like Ireland.—Dr. J. B. SPENCE, Dr. D. BOWER, Mr. HAYES NEWINGTON, Dr. J. F. DIXON, Mr. B. C. A. LEEPER, Dr. T. DRAPES, Mr. NOLAN, Dr. BOND, Dr. FLETCHER BEACH, Dr. G. W. GREENE, Mr. E. D. O'NEILL, and Mr. DONELAN discussed the paper, and Dr. COLLINS replied.

In the evening a banquet was held at the Royal College of Surgeons under the presidency of Dr. Dawson. There was a large company present, including his Excellency the Lord Lieutenant of Ireland, the Under Secretary for Ireland, the Presidents of the Colleges of Physicians and Surgeons, the Recorder of Dublin, the Bishops of Canea, Meath, and Clogher, as well as Dr. Macpherson, Mr. Hayes Newington, the Chairman of the Prisons Board, Mr. T. I. Considine (Inspector of Lunatic Asylums in Ireland), Dr. Drapes, and Dr. Percy Smith. The Lord Lieutenant, in reply to the toast of his health, proposed by Dr. MACPHERSON, referred in enthusiastic terms to the recent Royal visit to the city, and expressed his deep sympathy with the work carried on by those who laboured at the treatment of the insane. "The Medico-Psychological Association" was proposed by the Vice-Chancellor of the National University of Ireland in a speech in which he advocated the creation of a B Sc. degree for a knowledge of mental diseases. Dr. DAWSON, in replying, spoke of the monotony of the work, and said that workers in the field needed all the encouragement they could get. "The Visitors" was proposed by Dr. DRAPES, and acknowledged by the Bishop of Canea and the President of the College of Surgeons. The Lord Lieutenant proposed a hearty vote of thanks to the President.

Other papers, read on the following day, were as follows: The Personal Equation in Alienism, by Dr. DRAPES (Enniscorthy); Note on Hereditary Insanity from a Practical Standpoint, by Mr. LEEPER; Certain Observations on the Morbid Histology of General Paralysis, by Professor SHAW BOLTON; Clinical Evidence *re* the Toxic Nature of Insanity, by Dr. COLIN F. F. MCDOWALL (Cheddleton) and Dr. W. T. SEWELL (Newcastle), was read by Dr. MCDOWALL; Mental Symptoms in Association with Choreiform Disorders, by Dr. MAPOTHER.

In the afternoon, by the kindness of the Fellows of the Royal Zoological Society, a garden party was held at the Society's gardens.

NATIONAL VETERINARY CONGRESS.

THE twenty-ninth annual meeting of the National Veterinary Association was held at Carnarvon on July 26th and 27th. Even if the attendance at the Congress was not large, all those present were extremely keen, and much useful information was presented and exchanged. Mr. T. SALUSBURY-PRICE presided, and in his address referred to the recent finding of the Tuberculosis Commission.

A paper on Veterinary Education in Relation to Public Health was read by Dr. O. CHARNOCK BRADLEY, who remarked that the recent rapid advance of veterinary science within the past 20 years is shown by the establishment of specialism within the ranks of the profession. Previously the training of the student, said Dr. Bradley, resolved itself into producing a general practitioner. Now the potential specialist has to be taken into account in the planning of the curriculum. All students upon obtaining a diploma will not become general practitioners; a proportion of them will enter the public services and will almost inevitably sooner or later have to concern themselves with questions of public health. Therefore the teaching of to-day differs markedly from that of 20 years ago. It would certainly not be sufficient to say that the duty of the veterinary officer of health ceases when he has succeeded in procuring a safe and efficient meat- and milk-supply, though this apparently in the minds of many sums up his function. In the matter of milk-supply a knowledge of the conditions under which the milk producer should be placed is necessary. This involves the consideration of suitable housing, feeding, water-supply, ventilation, and drainage. In other words, the officer must be conversant with the principles of building construction, the different nutritive values of foodstuffs and their effect upon the quantity and quality of milk yield, the possible adulterants and impurities of food and their effects, the source, storage, adequate amount, and distribution of water-supply, as well as the injurious effects of impurities of water, the necessary amount of air space and the methods by which excreta may be removed and disposed of, and the means in general by which the milk-yielding animals may be maintained in a state of health conducive to the production of sound milk. In his work relating to meat inspection the veterinary officer must use his knowledge of anatomy, of the peculiarities incident to breed, sex and age of the effects of foodstuffs, of the pathological changes met with in the organs and flesh of the domestic animals, and the possibility of their producing detriment to the health of the consumer. Without clinical veterinary knowledge the would-be supervisor of the milk- and meat-supply is at a great disadvantage. The medical officer of health and the veterinary officer work along the same lines up to a certain point, but the paths of the two soon diverge. The medical officer has to concern himself with the housing and feeding of man and the combating of diseases, many of which are peculiar to the human race. The veterinary officer has to regard similar features as they apply to animals. In particular he must be conversant with the clinical and pathological features of those diseases of animals which are transmissible to man.

Mr. J. W. BRITTLEBANK (Manchester), in discussing the

paper, said that it should not be assumed that the education of the veterinary student is inefficient, but a special training in the subjects laid down by Dr. Bradley would produce an ideal veterinary officer of health.

Mr. W. WOODS (Wigan) urged the profession to prepare men to fill the new appointments that are likely to be made. In order to carry out sound supervision of milk-supply it will be necessary to obtain a mixed sample of milk from the dairy, and if tubercle bacilli are present then it will be necessary for every cow to be tested. Large laboratories will have to be established all over the country, and medical and veterinary practitioners will be responsible for the efficient working of these establishments.

The following motion was proposed by Professor WOODRUFFE and carried :—

That the National Veterinary Association, in general meeting assembled, approves the action of the Council of the Royal College of Veterinary Surgeons in appointing a committee to consider the question of education in public health matters, and desires to urge upon the Council the need for prompt action in the interests of public health.

A paper on Sclerostomiasis in Equines, presented by Dr. H. E. ANNETT, provided an interesting subject for debate. Dr. Annett observed that amongst the horses and donkeys which were under his charge for treatment for the production of various therapeutic sera the ravages of this disease forcibly attracted his attention. The nearest allies of the sclerostomes are the parasites of the genus ankylostomum or uncinaria, and the study of the members of this genus in man more particularly, but also in the dog and other animals, has, as is now well known, given most remarkable and surprising results, but these are greatly surpassed by those which have arisen in the course of the more recent work on the sclerostomes. Dr. Annett carried out a series of experiments with the object of discovering if drugs could be conveyed to the seat of infection in a sufficient state of concentration to be effective. For this purpose he employed gelatine capsules coated with cellulose, but the experiments have not yet reached a stage at which any definite knowledge in this particular direction can be arrived at.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7921 births and 4210 deaths were registered during the week ending July 29th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been equal to 12·0, 11·8, and 12·1 per 1000 in the three preceding weeks, further rose to 13·6 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these towns averaged 12·4 per 1000, while in London during the same period the mean annual death-rate did not exceed 11·9 per 1000. The recorded annual death-rates in the 77 towns during last week ranged from 6·5 in West Hartlepool, 6·8 in Hornsey, 6·9 in Reading, and 7·0 in Stockton-on-Tees to 19·1 in Wolverhampton, 19·2 in Liverpool, 19·5 in Stoke-on-Trent, and 20·8 in Bootle. The 4210 deaths from all causes in the 77 towns last week exceeded by 459 the low number recorded in the previous week, and included 722 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 423 in the four preceding weeks. Of these 722 deaths 533 resulted from infantile diarrhœa, 62 from measles, 56 from whooping-cough, 42 from diphtheria, 18 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 2·3 per 1000, against 1·0 and 1·4 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 236 in the four preceding weeks, further rose last week to 533, and caused the highest annual rates of 3·7 in Birmingham, in Bootle, and in Cardiff, 3·9 in Dewsbury, 4·4 in Birkenhead, 4·8 in St. Helens, and 5·8 in Wigan. The 62 fatal cases of measles were equal to the number recorded in the previous weeks, and included 21 in London and its suburban districts, 5 in Wolverhampton and in Liverpool, 4 in Bristol, 3 in Bolton, and 3 in Manchester. The deaths referred to whooping-cough, which had been 43 and 52 in the two preceding weeks, rose again last week to 56; 14 deaths were recorded in London and its suburban districts, 5 in Manchester and in Sunderland, and 4 in Hull and in Cardiff. The fatal cases of diphtheria, which had been 45 and 40 in the two preceding weeks, were 42 last week, of which 12 were registered in London and its suburban districts, 4 in Liverpool and in Blackburn, and 3 in Stoke-on-Trent and in Birmingham. The 18 deaths from scarlet fever were 4 fewer than the number in the preceding week, and included 4 in Liverpool, 2 in London, and 2 in Bradford. The 11 fatal cases of enteric fever were equal to the number returned in the previous week, and included 2 in Wigan. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1358 in the 15 preceding weeks, had further increased to 1412 on Saturday last; 209 new cases of this disease were admitted to the hospitals during the week, against 191, 204, and 199 in the three previous weeks. These hospitals also contained at the end of last week 842 cases of diphtheria, 316 of measles, 27[illegible] of whooping-cough, and 48 of enteric fever, but not one of small-pox. The 1185 deaths from all causes in London last week showed an increase of 200 upon the low number returned in the previous week, and included 115 which were referred to diseases of the respiratory system, against 119 and 113 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 194 and 188 in the two preceding weeks, declined to 173 last week, and 347 inquest cases were registered. The causes of 28, or 0·7 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death during last week were duly certified in London and its eight suburban districts, in Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Stoke-on-Trent, Salford, and in 46 other smaller towns; the 28 uncertified causes of death in the 77 towns last week included 6 in Birmingham, 4 in Liverpool, 3 in South Shields, 2 in Handsworth (Staffs.), and 2 in Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 835 births and 488 deaths were registered during the week ending July 29th. The annual rate of mortality in these towns, which had been 14·9 and 13·9 per 1000 in the two preceding weeks, rose again last week to 14·9. During the first four weeks of the current quarter the annual death-rate in these Scotch towns averaged 14·6, and was 2·2 per 1000 above the mean rate during the same period in the large English towns. The annual death-rate during last week in the eight Scotch towns ranged from 9·9 and 11·7 in Aberdeen and Paisley to 16·2 in Leith and 22·2 in Greenock. The deaths from all causes in the eight towns last week showed an increase of 31 on the number in the previous week, and included 73 which were referred to the principal epidemic diseases, against 57 and 63 in the two previous weeks; of these deaths, 40 resulted from diarrhœa, 17 from whooping-cough, 6 from diphtheria, 4 from measles, 4 from scarlet fever, 1 from enteric fever, and 1 from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 2·2 per 1000, the mean rate last week from the same diseases in the 77 English towns having been 2·3. The deaths from diarrhœa, which had increased from 14 to 28 in the three preceding weeks, further rose last week to 40, and included 33 of infants under two years of age; 23 deaths occurred in Glasgow, 7 in Edinburgh, 4 in Greenock, and 3 in Leith. The fatal cases of whooping-cough, which had been 23 and 17 in the two previous weeks, were again 17 last week, of which 12 were recorded in Glasgow. The 6 deaths attributed to diphtheria were 3 in excess of the number in the previous week, and included 2 in Glasgow and 2 in Perth. The 4 fatal cases of measles showed a decline from the numbers in recent weeks and included 3 in Glasgow. The 4 deaths from scarlet fever were equal to the number returned in the

preceding week. The fatal case of enteric fever was registered in Glasgow, and that of small-pox in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had been 47 and 51 in the two preceding weeks, were 48 in the week under notice, and were 13 below the number in the corresponding week of last year. Of the 488 deaths from all causes in the eight towns last week, 159, or 33 per cent., were recorded in public institutions, and 18 were attributed to different forms of violence. The causes of 18, or 3·7 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 654 births and 362 deaths were registered during the week ending July 29th. The annual rate of mortality in these towns, which had been equal to 16·7 and 16·8 per 1000 in the two preceding weeks, declined to 16·4 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these Irish towns averaged 16·0 per 1000; in the 77 English towns the mean annual death-rate during the same period did not exceed 12·4, while in the eight Scotch towns it equalled 14·6 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 22·5 in Dublin (against 13·7 in London), 14·2 in Belfast, 16·3 in Cork, 11·5 in Londonderry, 13·6 in Limerick, and 15·2 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week did not exceed 9·5 per 1000. The 362 deaths from all causes in the 22 towns last week showed a decrease of 9 from the number in the preceding week, and included 87 which were referred to the principal epidemic diseases, against 35 and 53 in the two preceding weeks; these 87 deaths were equal to an annual rate of 3·9 per 1000, which was 1·5 above the mean rate from the same diseases in the 77 English towns. These 87 deaths in the Irish towns last week from the principal epidemic diseases included 70 from diarrhœal diseases, 7 from measles, 6 from whooping-cough, 2 from scarlet fever, 1 from enteric fever, and 1 from diphtheria, but not one from small-pox. The deaths attributed to diarrhœal diseases, which had increased from 8 to 36 in the three preceding weeks, further rose last week to 70, and included 62 of infants under two years of age; of these 70 deaths, 39 occurred in Dublin and 24 in Belfast. The 7 deaths from measles were 3 in excess of the number in the previous week and were all registered in Dublin. The 6 fatal cases of whooping-cough were equal to the number returned in the previous week, and included 3 in Dublin. The 2 deaths from scarlet fever and the fatal cases of enteric fever and diphtheria were all recorded in Dublin. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 52 and 40 in the two preceding weeks, were 44 in the week under notice. Of the 362 deaths from all causes in the 22 towns last week, 108, or 30 per cent., were recorded in public institutions, and 6 were referred to different forms of violence. The causes of 8, or 2·2 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·7 per cent. in the 77 large English towns, and was equal to 3·7 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeon: F. E. Bolton to the *Hindustan*. Surgeon: A. V. J. Richardson to Chatham Hospital.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenant-Colonels retire on retired pay: Sir Joseph Fayrer, Bart., Thomas H. F. Clarkson, David M. Saunders, and Herbert W. Austin (dated July 29th, 1911); and George W. Brazier-Creagh, C.M.G., and Daniel Hennessy (dated August 2nd, 1911).

The undermentioned Majors to be Lieutenant-Colonels: Bertal H. Scott, vice J. R. Forrest, retired (dated June 21st, 1911); Brevet Lieutenant-Colonel Oliver A. Julian, C.M.G., vice B. H. Scott, supernumerary to establishment (dated June 21st, 1911); and Eustace A. Burnside, vice H. L. E. White, retired (dated July 3rd, 1911).

The undermentioned Majors are placed on retired pay (dated July 28th, 1911): Robert J. D. Hall, Charles E. G. Stalkartt, Christopher J. Healy, and Thomas J. Lenehan.

Major Francis J. Wade-Brown retires on retired pay (dated July 29th, 1911).

The undermentioned Lieutenants are confirmed in their rank: Charles M. Finny, James D. Kidd, William S. R. Steven, Gordon Wilson, Edward G. S. Cane, Francis A. Robinson, William A. Frost, Douglas Reynolds, Charles D. K. Seaver, William T. Graham, Walter Bisset, William L. E. Fretz, and Patrick Hayes.

Lieutenant-Colonel T. Daly, commanding the Station Hospital at Dalhousie, has been appointed for duty at the Station Hospital, Peshawar Cantonment. Lieutentant-Colonel H. H. Brown has been transferred from Rawal Pindi to take up charge of the Military Hospital at Murree. Lieutenant-Colonel C. C. Reilly, at present holding medical charge of the Royal Military College at Sandhurst, has been selected for a tour of service with the Southern Army in India. Lieutenant-Colonel S. B. Wilson has been placed under orders by the War Office to proceed for a tour of duty at Jamaica during the coming trooping season. Major W. A. S. J. Graham has been transferred from Nowgong to the Station Hospital at Neemuch for duty. Major O. L. Robinson, from Meerut Cantonment, has joined at Kirkee. Major P. J. Probyn, D.S.O., on completion of a tour of service in North China, has been appointed to the Irish Command. Major K. B. Barnett, from Shorncliffe, has taken up duty at Eastbourne as medical officer in charge of effective troops. Major J. C. Jameson, on return from duty at Cairo, has been posted to Woolwich District. Major S. H. Withers, from Ambala Cantonment, has been appointed Senior Medical Officer at Gharial Camp, Murree Hills. Major G. S. Crawford, from Wormwood Scrubs Cavalry Camp, has returned to duty in the Irish Command. Major F. R. Buswell, from Kamptee, has been appointed to the Station Hospital at Jubbulpore. Major W. B. Wingfield, from Agra, has been appointed for duty at Chakrata. Captain M. F. Foulds, specialist in advanced operative surgery at Belfast, has been placed under orders to proceed to Mauritius during the coming trooping season. Captain E. S. Worthington, M.V.O, has been selected by the War Office for a tour of duty in North China. Captain W. F. Tyndale, from Kilbride Camp, has joined for duty at Dublin. Captain G. H. J. Brown, on completion of a tour of service in India, has been appointed to the Military Hospital at Strensall. Captain E. J. H. Luxmoore has been transferred from Canterbury to Dover.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel A. L. Duke, first-class agency surgeon and administrative medical officer of the North-West Frontier Province, has been appointed to officiate as Residency Surgeon and Chief Medical Officer of Baluchistan during the absence on leave pending retirement of Lieutenant-Colonel W. A. Sykes, D.S.O. H.E. the Governor of Bombay in Council has appointed Lieutenant-Colonel A. Street on return to duty to act as Senior Surgeon and Professor of Surgery to the Grant Medical College, Bombay, in succession to Major V. B. Bennett. Major A. T. Gage, director of the Botanical Survey of India, has been granted three months' leave of absence. Captain S. C. Chuckerbutty has been appointed Special Plague Medical Officer in the Irrawaddy Division. Captain D. G. Rai has been granted combined leave of absence from India for 15 months. Captain R. D. Saigol has been placed on special deputation duty at Amritsar. The services of Captain C. C. Murison have been placed at the disposal of the Home Department for duty at Surat as Civil Surgeon.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Major David L. Hamilton to be Lieutenant-Colonel (dated June 17th, 1911).

2nd London (City of London) Field Ambulance, Royal Army Medical Corps: Major William Salisbury Sharpe, from the 3rd London (City of London) Field Ambulance, Royal Army Medical Corps, to be Major (dated July 1st, 1911).

2nd North Midland Field Ambulance, Royal Army Medical Corps: Lieutenant Evan L. Jenkins resigns his commission (dated July 29th, 1911).

For attachment to Units other than Medical Units.—William Howard Edwin Stewart to be Lieutenant (dated April 14th, 1911).

INDIAN MEDICAL SERVICE EXAMINATIONS.

The following are the names of the successful candidates, arranged in order of merit, at the examination for Commissions in His Majesty's Indian Medical Service, which was held at the Royal Army Medical College and at the Examination Hall, Victoria Embankment, on July 24th, 25th, 26th, 27th, 28th, and 29th:—

	Marks.
John Alexander Sinton, M.B., B.Ch., B.A.O. R.U.I., D.P.H. Cantab., D.T.M. Liverp., Queen's College, Belfast	3806
Denis Fitzgerald Murphy, M.B., B.Ch., B.A.O. R.U.I., University College, Cork	3721
Edward Randolph Armstrong, M.B., Ch.B. Liverp., D.P.H. Cantab., D.T.M. Liverp., Liverpool University	3572
Charles James Stocker, M.B., B.C., B A. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital	3414
Eric Edward Doyle, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Royal Colleges, Edinburgh	3346
Cyril Macdonald Plumptre, M.R.C.S., L.R.C.P., Guy's Hospital	3303
Archibald Wallace Duncan, M.R.C.S., L.R.C.P., St. Mary's Hospital	3299
Edward Austen Penny, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Guy's Hospital	3257
George Blenkhorn Harland, M.B., B.S. Lond., Guy's Hospital and Durham University	3243
Leon Francis Brandenbourg, M.B., C.M. Madras, M.R.C.S., L.R.C.P., Madras Medical College and King's College Hospital	3238
John Edward Scudamore, M.B., B.S. Lond., London Hospital	3233
Henry Lewis Barker, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Mary's Hospital	3186

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps, for which 44 candidates entered:—

	Marks.
B. H. H. Spence, M.B., Ch.B. Edin., Edinburgh University	622·5
W. B. Laird, M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's Hospital	606
D. W. Bruce, M.B., Ch.B. Univ. Aberd., Aberdeen University	568
H. S. Blackmore, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S. R.C.S. Eng., University College Hospital	567
E. S. Calthrop, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Charing Cross Hospital	565
L. Buckley, M.B., B.Ch. Liverp., M.R.C.S. Eng., L.R.C.P. Lond., Liverpool University	564
F. R. B. Skrimshire, M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's Hospital	555·5
R. T. Vivian, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital	553
T. B. Osmond, M.R.C.S. Eng., L.R.C.P. Lond., B.A. Cantab., University of Cambridge and St. Bartholomew's Hospital	550
E. C. Deane, L.R.C.P. & S. Irel., L.M., Royal Colleges of Physicians and Surgeons, Ireland	549
S. P. Sykes, M.B., Ch.B. Liverp., Liverpool University	544
R. Davidson, M.B., Ch.B. St. And., Dundee University	542
E. G. H. Cowen, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Charing Cross Hospital	541
E. B. Allnutt, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital	537
J. M. Elliott, M.B., B.Ch., B.A., B.A.O. Dub., L.M., Trinity College, Dublin	535
H. E. Todd, M.B., Ch.B. Edin., Edinburgh University	529
J. L. Ritchie, M.B., Ch.B. Birm., M.R.C.S. Eng., L.R.C.P. Lond., Birmingham University	524·5
M. Drummond, L.R.C.P. & S. Irel., L.M., University College, Dublin, and St. Bartholomew's Hospital	522
A. G. J. MacIlwaine, L.R.C.P. & S. Irel., Queen's University, Belfast	520
W. Stewart, M.B., Ch.B. Edin., Edinburgh University	516

ITALIAN DECORATIONS FOR MEMBERS OF THE SERVICES.

The King has given the undermentioned officers His Majesty's Royal licence and authority to accept and wear decorations which have been conferred upon them by His Majesty the King of Italy in recognition of services rendered by them at the time of the earthquake in Southern Italy in the year 1908:—

Commander of the Order of St. Maurice and St. Lazarus: Surgeon-General James Gaussen MacNeece, Principal Medical Officer, 8th (Lucknow) Division, India.

Commander of the Order of the Crown of Italy: Major Gilbert Stewart Crawford, Royal Army Medical Corps.

Officer of the Order of the Crown of Italy: Captain Henry Stewart Anderson, Royal Army Medical Corps; Captain Harold Charles Winckworth, Royal Army Medical Corps; Captain Percy Arnold Lloyd-Jones, Royal Army Medical Corps; and Surgeon-Captain Robert Randon, Royal Malta Artillery.

Correspondence.

"Audi alteram partem."

INFLAMMATION AND MALIGNANT DISEASE.

To the Editor of THE LANCET.

SIR,—My excuse for sending this communication must be that in the researches which have been made on the origin of cancer, and which I have not the slightest desire to minimise, enough attention perhaps has not been paid to the relation between epithelioma and scirrhus and chronic inflammation. Long ago it was shown how frequently chronic mastitis preceded cancer of the breast. Still, I believe it was looked upon as a more or less accidental occurrence and not a *necessarily* pre-existing condition. Now what does chronic inflammation mean? It means that the inflamed tissue is invaded by a multitude of leucocytes, and continues to be invaded for an indefinite length of time. But at the end of this period a change seems to take place according to the age and resisting power not of the patient but of the tissue. In vigorous tissue these leucocytes are either absorbed or thrust forth in the form of an abscess. Where this does not happen and senility of tissue has taken place, resisting power having vanished, a malignant growth forms. This conclusion may be applied to the parts of the body where external cancers most frequently occur. In the tongue, as far as my experience goes, I have always been able to trace the malignant growth to a pre-existing source of irritation, as a sharp tooth or tooth-plate; in the lip to the well-known short clay pipe, or even to a projecting tooth; in the rectal cancers to fistula or fissures. And there is no doubt examples of pre-existing chronic inflammation may be quoted to almost any extent. So that I think one is justified in saying that chronic inflammation produced by some irritation or other is an invariable precedent to, at any rate, external cancer. In the breast, if a line be drawn horizontally across the organ through the nipple, every cancer I have seen (with few exceptions) has been situated in the upper segment, or at any rate not below the line. That is due, in my opinion, to the edge of the corset pressing against and causing continual irritation in the overlapping part of the breast. The only exceptions have been in old women, and in them the cancer has been situated in any part.

The cells of chronic inflammation are indistinguishable microscopically from cancer cells. The change into malignancy seems to be a gradual process and taking possibly a considerable length of time, this being due to the amount of resistance on the part of the tissues. Hence in feebly resisting tissues one gets the rapidly growing cancers sometimes seen. Until that resistance is overcome malignancy does not occur. If the inflamed area is removed before resistance has ceased, or even very soon after, there is an end of the matter. By resisting power I mean the ability to expel or absorb the invading cells. If after an operation for chronic inflammation or its sequels, such as an abscess, some of these invading cells are left behind and resistance has ceased, then a malignant growth may arise. A woman, aged 41, came to me in October, 1908, with a chronic abscess of the breast. She had had several children and had suckled her last baby up to a few months before. The abscess was opened, it healed up, and she went home. She returned in January, 1909, with a suspicious hardness deep down in the breast exactly at the site of the former abscess. The organ was removed, and a scirrhus of

the size of a small marble was found. The centre of the growth showed the usual stroma, but at the growing edge the cells were losing their round shape and were becoming elongated. Further away they had their usual round formation, exactly like the cells of chronic inflammation. Is it not reasonable to assume that this elongation is taking place at the seat of least resistance, and that these elongated cells will ultimately form the stroma of the cancer as it extends? At the time of the formation of the abscess the inflammatory cells were present, and doubtless were not all removed in the subsequent treatment. These, though not malignant then, developed malignancy later. I am convinced that if all the cell-ridden area had been excised there would have been no cancer. It seems that in any tissue the continued presence of these leucocytes which the tissue is unable to rid itself of makes for malignancy. When does the pre-malignant stage of cancer cease? I should say when these chronic inflammation cells are losing their round shape and becoming elongated. Resistance on the part of the tissues has become feeble or entirely ceased, and malignancy, or at any rate the commencement, has developed. The position may be stated thus: after remaining in the tissues for an indefinite period these cells, if not removed, elongate and become malignant. Repeated attacks of inflammation are not sufficient to produce this—they must be attended by retention of the cells in the tissue and gradual loss of resistance thereof. For instance, even after repeated attacks of gastritis in the drunkard cancer is rare, because probably these cells are absorbed without any delay. Showing the intimate relationship between cancer and chronic inflammation, if any source of irritation be removed before malignancy has set in the parts involved will most probably recover.

I am, Sir, yours faithfully,

H. LYLE,
Senior Surgeon to the Liverpool Hospital for Cancer and Skin Diseases.

Liverpool, July 26th, 1911.

ARTIFICIAL PNEUMOTHORAX IN TREATMENT OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I was very much interested in the important communications by Dr. C. Lillingston, Dr. L. Colebrook, and Dr. S. V. Pearson and Dr. A. de W. Snowden printed in THE LANCET of July 15th. The paper by Dr. Lillingston was most complete, and he seems to have mentioned almost all the possible misfortunes as well as the methods of safeguarding the patient, while the treatment is being carried out according to Saugman's technique. But I should like to discuss one point which surprised me not a little. He describes rather contemptuously the method of Brauer and Spengler as either obsolete or at any rate almost useless. About five years ago I spent nearly two years at Davos-Platz and Davos-Clavadel and heard much of this wonderful operation of Brauer's and saw some of his cases, and they seemed surprisingly successful.

Hearing, as Dr. Lillingston remarks, that the English cases in Davos could not return home last summer because there was no one in England capable of carrying on the treatment, I, at the request of sundry patients and doctors, went out last winter to Clavadel and there learnt all I could of these new developments of the artificial pneumothorax treatment. I have both assisted at and performed the initial operation and the after-fillings a good many times now, and from my comparatively small personal experience and the very considerable number of cases whose notes I have studied I have come to the conclusion that the initial open operation as performed by Brauer is not very dangerous, and that the dangers of pleural reflex, air embolism, sepsis, and so on are greater at the time of the earlier after-fillings, especially when Saugman's needle is used, as it invariably is used by Spengler, Frey, Neumann, Noble, and the other practitioners at Davos.

If this conclusion of mine is true, it seems to me that a combination of Brauer's initial operation, with the use of a fine trocar and cannula fitted to Saugman's needle-mount for the after-fillings, should make the procedure in the majority of cases free from the risks mentioned in Dr. Lillingston's paper. I had such a needle made for me by the Holborn Instrument Supply Company. Dr. Brauer and Dr. Spengler in their latest work on this subject describe some 113 cases of their own. In 26 it was not possible to make a pneumothorax owing chiefly to extensive adhesions, but of the other 87 patients, all having severe disease and going downhill before the operation, 65 per cent. were very favourably influenced by the operations, and in each case the prognosis is now either good or very good.

The technique needs great care on the part of the operator and his assistant, but there seems little doubt that the induction of an artificial pneumothorax is of the greatest use in the treatment of some apparently hopeless cases of advanced pulmonary tuberculosis.

I am, Sir, yours faithfully,

Brechin-place, S.W., July 24th, 1911. HERBERT RHODES.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN.

To the Editor of THE LANCET.

SIR,—Owing to certain difficulties arising out of the management of this hospital, and the manner in which the grievances in respect of such were dealt with by the board of management, we, the undersigned members of the medical staff, felt compelled, acting under legal advice, to take a certain course. As a result of this action we were called upon to resign our appointments by the board within seven days, and, declining to do so, we have received imperative notice of dismissal, and have ceased to have any connexion with the said hospital. We shall take steps to lay the facts of the disabilities under which we suffered before the profession, and also before certain medical and lay hospital authorities, and in the meantime trust that, should the vacancies upon the medical staff be sought to be filled by the board, would-be candidates, before applying for our late appointments, will make themselves cognisant of the conditions which prevail, and have prevailed, at this hospital both now and in previous years.

We are, Sir, yours faithfully,

ALFRED EDDOWES.
AGNES SAVILL.
G. W. DAWSON.
L. F. KNUTHSEN.

July 17th, 1911.

FRENCH MEDICAL OPINION ON THE BRITISH INSURANCE BILL.

(FROM OUR SPECIAL COMMISSIONER.)

Paris, July 26th, 1911.

THE members of the medical profession in France, and especially those who are members of militant medical unions, are watching with great interest and not a little anxiety the fate of Mr. Lloyd George's Insurance Bill. To them the paramount question is the free choice of the doctor. There must, they say, be no State medical functionaries, and no monopolies created for disposal by the politician who has influence over voters. It is as a medical practitioner and not as a successful canvasser at election times that patients should be able to select their medical attendant. The new Health Committees that are to decide how to carry out the legislative provisions are not likely in French opinion to be neutral in politics. Theoretically, all elected administrative bodies in England, except the two Houses of Parliament, are supposed to have no politics. A municipality is constituted merely for local purposes, though it is often elected now on the lines of the political parties; and this is also the case with less important bodies, such as, in England, the boards of guardians. What, then, is going to be the politics of the proposed Health Committees seems to our French neighbours a vital point. Are they likely to be free from all political bias? Are there, indeed, administrative bodies anywhere that can be considered as free from political bias? Medical men are not themselves absolutely free from political predilections, and their full representation on the committees would not alter this danger. When, in answer to these curious criticisms, I confessed that it seemed to me possible that the medical profession in England, if polled, would show a Conservative majority—a view which I knew many medical men would not agree with—the retort was immediately made that this might account for some of the

opposition to the Bill. I protested to my questioners that every effort had been made, on the contrary, to exclude politics from the discussion of the Bill, and that the Conservative party, by the voice of its leaders and in its journals, had expressed its approval of the general principles of the Bill. The idea of political bias was firmly rooted in their minds, and they continued to point out that a medical adviser must not be imposed on a patient because he had found favour in the eyes of some authority or other. If such authority is not guided in its choice by political motives, it is likely to be influenced by family or personal interests; in fact, by any number of considerations save the one and only reason that should govern the choice of the medical attendant.

The French View of Vested Interests in Club Practice.[1]

The only means of excluding influences that should not be brought to bear was, from the French viewpoint, to allow the medical practitioner to appoint himself. This, I explained, was exactly what would happen in the majority of cases. Any fully qualfied practitioner who was willing to do the work could inscribe his name on the panel, but there remained a minority of cases where the patient would not be free to send for the practitioner he might prefer. There were the medical men at present employed at regular salaries by the Friendly Societies, and these salaries were likely to be treated as vested interests which must not be disturbed. The same difficulty has arisen in France, though the term "vested interests" does not exist there. It is replaced by the very appropriate expression "acquired situations" (*situations acquises*). Dr. M. Vimont recently published an eloquent protest against the excess of consideration shown to "acquired situations" under the contract system. In the *Concours Médical* he explains that he has himself served as the medical officer of various Friendly Societies and quite understands the anxieties of these poorly paid practitioners. Nevertheless, he questions whether their position as the salaried medical officers of mutualist organisations or Friendly Societies can be considered as a vested interest. He draws a picture of the young practitioner remaining at home, depriving himself of holidays for fear of losing a patient, devoting himself with the utmost assiduity to the few patients who send for him, till at last, after much privation and many efforts he wins a good name and establishes a practice. This, indeed, is an "acquired situation," and is due entirely to personal effort and merit. But by-and-bye, though he has in no wise modified his manner of treatment and has been and is just as successful, his patients leave him one by one. They leave him because they join the Friendly Society of the industry in which they are engaged. At first, however, he continues to attend to wives and children, but in course of time even that fails him, for the Friendly Society extends its field of action and takes in the women and children as well. Here, then, is a vested interest destroyed by a Friendly Society, which imports a medical officer and makes him attend patients on charity terms with the aid of an elaborate system of advertising and touting. Then, as a climax, when a reform is proposed, it is urged with due solemnity that respect must be shown for the vested interest of the Friendly Society's medical officer; the vested interest of the very man who has destroyed by unfair competitive methods the best, the most worthy, form of vested interest that can possibly exist.

The "Medical Monopoliser."

The "medical monopoliser," as he is called in France, is one who acquires a vested interest in medical practice not by reason of his personal efforts and successful experience among the sick and the suffering, but by going about hat in hand soliciting a post, bringing outside influences to bear, getting people who have nothing to do with medical practice to recommend him to the lay committee managing a Friendly Society. He surrenders his personal independence, he consents to become the salaried servant of a number of persons who know nothing about the medical profession or medical matters, he accepts payment that is much below the prevailing custom, and thus damages not only his own interests—which Dr. Vimont holds him at liberty to do—but also the interests of all his colleagues, which is most unfair and most reprehensible. He allows himself to be imposed, to be forced, upon a sick man, instead of waiting until, as a consequence of the honourable exercise of his profession, the sick man is inspired with confidence in him and voluntarily sends for him. On one side we have the medical practitioner who has acquired a practice by his own skill, science, and hard work; on the other is a practitioner who owes his practice to the fact that he was appointed by a lay committee, and was willing to violate the fundamental principles of the profession of medicine. Where rests the vested interest? Does it rest with the independent practitioner or with the practitioner who has sold himself?

Proposed International Action in Regard to the Bill.

Mr. Lloyd George, on more than one occasion, has expressed his approval of the principle of free choice of medical attendant by the patient. But if the wage limit is to be maintained at £160 a year and the payment is not to be much higher than 6*s.* a year, then it seems quite obvious that many practitioners will suffer, and suffer severely, in their pockets. In fact, their vested interests will be affected.

The French practitioners with whom I discussed this matter viewed the prospect of British legislation setting such an example with little short of terror. Such a bad precedent, they said, would be extremely injurious to their British colleagues, and would check the campaign now successfully in progress in France against similar abuses. Would it not be possible, I was eagerly asked, for some representative British and French medical men to meet and draw up a joint manifesto? The *entente cordiale*, surely, was not a mere empty sound—a pretty sentiment with nothing practical about it. Here, in France, the economical difficulties besetting the medical profession were almost identical with those obtaining in England. Would it not lend greater weight to the demands brought forward if they were simultaneous and similar in both countries.

An Opportunity for Reform.

The great benefit of the proposed law is the panel, but only, my French friends say, if it is universally applied. It is bad enough that medical monopolies should have been created by Friendly Societies and medical aid clubs of all sorts, acting as private organisations established by private enterprise. Against such a procedure medical men have formed militant unions and have collected strike funds, and there have been many medical strikes throughout Europe. The Governments may plead that where freedom of association exists they are not responsible for what these associations may do. But Governments are responsible for the laws they present to Parliament. If, under private enterprise, a mischievous and bad system has grown up, a system that has been condemned by at least nine out of every ten medical practitioners in England, France, Germany, Belgium, and in fact throughout Europe, it surely is not the rôle of any Government, seeking to legislate for the public good, to give legal sanction to abuses. The Friendly Societies and medical aid clubs must no longer be allowed to impose upon their members such medical men as their managing committees may choose to appoint, or to oppress their medical officers. The Health Committees to be created under the proposed law will be able to see that the panel is open to all who are properly qualified. The club doctors of good professional repute should not lose anything by the abolition of their function as club doctors. They have only to put their name on the panel and their patients will continue to send for them just as before. If, on the other hand, they have not been acceptable to the patients, the law should have no right to interfere with the liberty of the patient and force him to accept medical attendance he does not wish to have. In Germany and in France, where strenuous resistance is being organised against such an abuse, its legal sanction by a British law would be looked upon as a retrograde measure likely to have an injurious moral effect throughout the continent.

[1] The article was written, of course, before the agreement was come to in the House of Commons on Clause 13 of the National Insurance Bill.

SEVENTH INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY.—This congress will be postponed from September, 1911, to the middle of April, 1912. This delay is due to the fact that many of the foreign committees have found the month of September very unsuitable for their members. Previous references to this congress were made in THE LANCET of May 20th, 1911 (p. 1395) and Sept. 17th, 1910 (p. 921).

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Extensive Outbreak of Ptomaine Poisoning at Bacup and Elsewhere.

AT Whitsuntide a severe outbreak of what seems to be ptomaine poisoning occurred in the Rossendale Valley of Lancashire, whereby over 150 people were affected, in some instances whole families being rendered seriously ill. Bacup was the chief centre of trouble and had the largest number of cases. The cause is alleged to be eating of potted meat at a time when the weather was such as to conduce to the formation of irritant substances which bring symptoms like those of ptomaine poisoning. Five such cases are reported as having ended fatally at Bacup. Three cases occurred at Oldham, two of the victims having eaten some potted meat at a friend's house in Bacup; while a third who had visited Bacup was reported to be suffering from ptomaine poisoning. Over 50 persons in Chesterfield required medical aid owing to a virulent attack of ptomaine poisoning, while a somewhat similar outbreak occurred in Over Peover in Cheshire after the Coronation festival, whereby about 40 persons were attacked with symptoms pointing to ptomaine poisoning.

Manchester Education Committee: Report on Manchester School Children.

From the report of the Manchester Education Committee I learn that the number of elementary school children at the end of last year was 121,087, and of these 7445 were under the age of five, a number equal to a percentage of 6·2 in Manchester schools, as compared with 6·9 in those of England and Wales generally. The number of scholars over 12 years of age was 22,853, and that between 14 and 17 years of age 40,000. The number continuing their education, either in evening or secondary schools, did not exceed 15,000, so that 25,000, or over 60 per cent., were attending neither day nor evening schools. It appears that for England and Wales generally over 74 per cent. of scholars do not continue their education either at day or evening schools. It is gratifying to find that since attention has been directed by the medical officer to physical defects on the part of the children, heed has been given to his suggestions in the case of 92 per cent. of the total number. As usual, a large number of children were found to be suffering from defects of sight. Many of the parents manifest a strong antipathy to their children wearing spectacles. This may in part be explained by the fact that the wearing of spectacles is considered to lower a child's value as a working unit when it comes to leave school. It may also be partly due to the reluctance to pay for the glasses. During the year 273 children were supplied with spectacles. It is stated that Jewish children, as a rule, have very bad sight, which, it is suggested, is partly to be ascribed to their having to learn Hebrew; for only the boys are taught Hebrew, and it is they who suffer much more than the girls from defective vision. Jewish children are better nourished than Gentile children, and the Jewish boys and girls reach a higher anthropometric standard than Gentile boys and girls. No cases of mental defect were found in nearly 1000 Jewish children, whereas 0 6 per cent. of Gentile children were found to be mentally defective.

British Universities Students' Congress.

About 50 delegates, representing 17 British universities and colleges, assembled recently in the University of Manchester. Amongst other interesting matters discussed was the question of the recognition of British medical degrees in Germany. It was reported that negotiations with the German Government asking it to repeal an ordinance withdrawing recognition to British degrees in the case of candidates for a doctor's degree in Germany had been successful in obtaining redress from all German universities outside of Prussia. Similar negotiations in the case of degrees at Swiss and Austrian universities had met with complete success. The question of the possibility of the interchange of examinations and the recognition of the courses of the various British universities within the Empire was discussed and referred to a committee.

Annual Report of Manchester and Salford Sanitary Association.

The annual report of this association for 1910 has just been issued. Thanks in part to the efforts of the association in regard to the "conquest of consumption," the view is expressed that some of our authorities seem to show a disposition to take action of the kind advocated by the association. The other two subjects which have engaged the attention of the association are the smoke nuisance and the care of the feeble-minded. Again there is a falling-off of revenue. It is truly remarkable what excellent work is done by this association, although the income is only about £90 per year. More might legitimately be expected from a great city like Manchester and an ancient borough like Salford. The cheap series of publications, such as "Health Lectures for the People" (1*d.* each), and leaflets for distribution amongst the community should be better known and funds provided for their distribution.

Opening of the New Extension of Salford Royal Hospital.

Lord Shuttleworth opened the new buildings of the Salford Royal Hospital on July 6th. With this extension the hospital equipment meets the most advanced requirements of medical and surgical science. The increase in beds is from 119 to 209. Lord Shuttleworth recalled the fact that his father was a physician and took an active part in combating the epidemic of cholera which swept over Manchester in 1831. After speaking of the remarkable advances in surgical practice during the last 60 years, his lordship touched upon the extreme desirability of municipal corporations giving themselves most thoroughly to the task of clearing away those places to which the horrible word "slum" was attached. He expressed the faith that the new extension would prove a priceless boon to thousands of the people in the present and in future times. The extension committee collected £50,000 in four years in aid of the hospital.

July 31st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Hospital Saturday and Sunday Funds.

THE joint honorary treasurers of the above-named funds have distributed £10,100 amongst the following institutions: Liverpool Royal Infirmary, £2075; Royal Southern Hospital, £1450; David Lewis Northern Hospital, £1425; Liverpool Stanley Hospital, £775; Liverpool dispensaries, £575; Liverpool Infirmary for Children, £550; Queen Victoria District Nursing Association, £525; Liverpool Eye and Ear Infirmary, £375; Liverpool Hospital for Consumption, £300; Hospital for Women, £300; and St. Paul's Eye Hospital, £300. Other institutions of lesser magnitude received sums varying from £250 to £25. The number of beds contained in the several charities determined the amounts apportioned.

Liverpool Maternity Hospital: "Coronation Year Fund."

In April last the Lady Mayoress made an urgent appeal on behalf of the Liverpool Maternity Hospital, and a "Coronation Year Fund" was opened which realised £2000 odd. Up to last March £10,000 had been raised towards the endowment fund, which Sir William Hartley made conditional on his erecting a new hospital. A promise of £500 has also been made by a lady, provided a like sum is forthcoming from other sources. To facilitate matters Sir William Hartley has now kindly consented to modify his original proposal, and will commence the building of the new premises, which are to be erected on the site of the old almshouses in Cambridge-street, when £15,000 shall have been raised, relying on the balance of the fund being obtained when the edifice is completed.

New Assistant Surgeon at the Royal Infirmary.

Mr. H. F. Woolfenden, F.R.C.S. Eng., surgical registrar to the Royal Infirmary, has been appointed honorary assistant surgeon in the room of Mr. T. C. Litler Jones, promoted honorary surgeon

August 1st.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The Abuse of Charity.

THE deputation appointed by the Royal Victoria Infirmary, Newcastle-on-Tyne, to visit other hospitals have just issued their report. It states that visits were made to the Leeds General Hospital, Manchester Royal Hospital, and the Liverpool Royal Hospital, and very careful and exhaustive inquiries were made. It has learnt that in Manchester and Leeds especially a real effort has been made to deal with the abuse of charities and the delay in the admission of patients; that in the metropolis these difficulties are less acute than in the provinces, hence less effort has been made to introduce any alteration in the mode of admission of patients. The house committee of the infirmary is understood to be now dealing with this report with a view to framing a scheme of admissions upon it. The main principles of the systems in the provincial hospitals visited are summed up in attempts (1) to admit patients through one channel; (2) to facilitate the admission of patients through the out-patient departments; (3) to bring into some co-relation the various waiting-lists of the honorary staff; and (4) to prevent the admission of unsuitable persons. It is reported that at the inspected hospitals the honorary staff had relinquished their positions as the sole admitting authorities, and have been content with the right to admit a certain number of cases per month; that to carry out the investigations necessary there were in the hospitals paid medical and surgical officers of superior standing to the ordinary house physicians and house surgeons; and that, further, there was in Leeds and Manchester a system of almoners working with the Charity Organisation Society. In Manchester there is, in regard to out-patients, a definite wage-limit per family, above which medical attendance and medicine are not given. It is considered that as the result of this report some similar scheme will be introduced by the house committee in the Royal Infirmary. This question of hospital abuse has been the subject of much discussion in the district. The district is so largely artisan, and the working man contributes, in weekly subscriptions of a penny or twopence, such a large proportion of the income—more than half the total hospital income last year—that it cannot be wondered this question has been hotly discussed from time to time and from several points of view in the last few months. The medical profession of the city and district is exceedingly anxious concerning the trend of affairs and would be glad to see some effective means of checking abuse. Whether the example of Manchester in the direction of a wage-limit will be followed is a great problem; it is to be hoped that it may, but such a point will certainly meet with great opposition from the working-man subscriber, who now avowedly considers the institution as existing for his especial benefit, on the lines of a benefit society, kept up mainly by his efforts; he is entirely unmindful of the original foundation of the charity—"for the sick and lame poor."

The National Insurance Bill.

A deputation of medical men from the Newcastle Division of the British Medical Association has been received by the local Members of Parliament—Mr. Edward Shortt, K.C., Mr. J. M. Robertson, and Mr. Walter Hudson. The deputation was headed by Dr. J. Don, Dr. H. L. Rutter, and Dr. T. Beattie, who spoke at some length concerning the Bill, voicing their wishes for adequate remuneration, a free choice of doctor by the patient, a free voice in the local management of health committees, and the establishment of a local medical committee with statutory recognition for the purpose of conferring with the local health committee. The Members gave a sympathetic hearing to the deputation and promised a full and complete consideration of the points laid before them. Mr. Shortt and Mr. Robertson also received a deputation from the Royal Victoria Infirmary; this was headed by Sir Riley Lord, Dr. G. H. Hume, Mr. R. H. P. Orde (secretary of the infirmary), Mr. Charles Irwin, and Mr. Cairns (of the Northumberland Miners' Association). This deputation dealt with the portions of the Bill which have special reference to hospitals, and mention was made of the endangering of subscriptions to hospitals, while the work of those institutions would be largely increased. The deputation thought there might be some sort of an arrangement by which the Treasury could supplement what was done locally, as was suggested by Mr. Lloyd George with regard to the extension of sanatoria work to women and children.

July 31st.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol.

PURSUING a policy already in effect in the departments of anatomy and physiology, the University has appointed a whole-time demonstrator to assist the professor of pathology, who in addition to his university post holds that of pathologist to the Royal Infirmary.

The Bristol Guardians and their Medical Officers.

Mr. F. C. Morgan, medical officer to the Eastville workhouse, having resigned, the Bristol board of guardians has been considering the advisability of a readjustment of the medical care of their workhouse inmates. Under the present arrangement the medical officer to the Stapleton workhouse receives £250 per annum with a residence, and £20 per annum for the headquarters homes, while the medical officer to the Eastville workhouse has received £250 per annum, with £30 in lieu of residence. The guardians' hospital committee recommends certain changes which aim at placing the work at both institutions under one chief medical officer with an assistant. It is suggested that the senior officer should reside at the Stapleton workhouse, receiving £330 with residence, the assistant officer living at the Eastville workhouse and receiving £100, with board, lodging, and washing, or £140 on condition that he lives close to the workhouse. This magnificent salary is offered for assistance in the case of both the workhouses and the headquarters homes. Its inadequacy was pointed out by Dr. W. L. Christie, one of the guardians, but the proposition was agreed to. Fortunately, the scheme is for 12 months only, and Dr. Christie gave notice to move that the resolution be rescinded.

Compulsory Notification of Tuberculosis.

The Bristol health committee has sent a report to the city council recommending the introduction of compulsory notification of phthisis. There is a system of voluntary notification in force in Bristol, and this, with the compulsory notification of institution patients recently introduced by the Local Government Board, has proved of so much value that it is felt advisable to extend notification till all phthisical patients are included.

July 31st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dr. Jessie Macgregor Prize in Medical Science.

THIS prize, which is in memory of the late Jessie Maclaren Macgregor, M.D. Edin., is awarded triennially for original work done in any branch of medical science during the three years preceding the award, and is of the value of £50. The award is in the hands of a body of trustees, consisting of the Dean of the Faculty of Medicine of the University of Edinburgh, the President of the Royal College of Physicians, Edinburgh, the treasurer of the Royal College of Physicians, Edinburgh (to whom applications have to be made), the President of the Royal College of Surgeons, Edinburgh, and three medical women, resident in Edinburgh, to be coöpted by the other four trustees. Applicants must have studied for at least one year at a school of medicine in Edinburgh, and must be either graduates of a Scottish University or holders of the triple qualification. The first recipient of the prize is Agnes Ellen Porter, M.D. Edin., the award being made for work done in the departments of bacteriology and physiology, and especially for research into the precipitative reaction in tuberculosis.

Outbreak of Small-pox in Lochee.

An outbreak of small-pox has occurred at Lochee, involving members of three families residing in the west end.

The first case was that of a man who had been suffering for a few days. The case was diagnosed as small-pox, and the patient was removed to hospital on July 22nd. Two days later another case hailing from the same property was discovered. The patient, in this instance a woman, was on intimate terms with deceased's family, and had assisted them in their affliction. She was also removed to the small-pox hospital at King's Cross, and both families were removed to the reception house. A third case was discovered on the 27th, that of a young woman who resided in the vicinity where the other cases occurred. The first case succumbed on the evening of his admission to hospital; the other cases are doing well. The origin of the outbreak has not been traced. The area in which the cases have occurred is in the open country.

Turriff District Hospital: Annual Meeting.

The annual meeting of the committee of management of the Turriff District Infectious Hospital was held on July 27th. Thirty-five patients have been treated in the hospital during the year ended May 15th last. Fourteen of these were cases of diphtheria and 21 scarlet fever. At the beginning of the year there was a balance of £35 0*s.* 5*d.* and at the end of the year a balance in hand of £29 11*s.* 9*d.* The clerk submitted a statement of the probable expenditure for the current year, which amounted to £494 11*s.* 9*d.*, less balance, leaving £465 to raise by assessment, £347 2*s.* 11*d.* falling to the Turriff district and £117 17*s.* 1*d.* to the burgh of Turriff. The meeting agreed to intimate accordingly.

August 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Hospitals and the Insurance Bill.

AT a meeting of representatives of the chief Dublin hospitals held last Monday to consider the effect of the National Insurance Bill on the hospitals of Ireland, the following resolutions were carried:—

1. That this conference is of opinion that the National Insurance Bill as introduced into Parliament will, if unamended, have an injurious effect on the income of the hospitals of Dublin.
2. That hospitals and dispensaries by which services are rendered to assured persons should receive the actual cost of the expenditure they have incurred for such services under conditions that will preserve the independence of the voluntary charitable institutions concerned.
3. That Clause 15 be amended so as to provide that hospitals and dispensaries should receive the same benefits as sanatoria.
4. That voluntary hospitals be excluded from contributing under the Bill, or, in the alternative, that power be given to the Insurance Commissioners to pay the contributions of employers in addition to the Imperial contributions in the cases of voluntary hospitals out of the funds at their disposal.
5. That in maternity cases treated in hospital wards the allowance be paid directly to the assured person.

Vital Statistics of Ireland.

The annual report of the Registrar-General for Ireland, just presented to Parliament, states that the mortality-rate per 1000 from phthisis in the years 1907, 1908, 1909, and 1910 has shown a successive decrease—viz., 2·7, 2·6, 2·4, and 2·3 respectively. The marriage-rate shows a decrease of 0·12 per 1000 as compared with 1909, the birth-rate a decrease of 0·2, and the death-rate of 0·1. Of the 101,963 births, 52,103 were of boys and 49,850 of girls. 97·2 per cent. of the children were legitimate, the highest rate of illegitimacy being in Ulster, 3·7 per cent., and the lowest in Connaught, 0·7 per cent. The number of emigrants who left Ireland in the year was 32,457.

Lunacy in Ireland.

The annual report of the Inspectors of Lunatics in Ireland was laid on the table of the House of Commons two weeks ago. The summary of the number of insane under care shows an increase during the year 1910 of 250; the corresponding increase in 1909 was 213. The average annual increase in ten years was 328. The number of insane in workhouses has decreased by 84. The percentage of recoveries to admissions was 36·5, being 1·9 lower than that for the previous year.

The Abbey Sanatorium.

Mr. Robert Hall, medical officer to the Abbey Sanatorium, Belfast, has presented his report for the half-year ending March 31st, 1911. Of the males, 19, and of the females, 11 (total, 30) were discharged as "greatly improved"; 142 (95 males, 47 females) were discharged as "improved"; 29 (16 males, 13 females) left "not improved"; 23 (12 males, 11 females) were "not long enough in sanatorium"; and 64 (43 males, 21 females) died; in other words, a total of 288 patients (185 males, 103 females) altogether were treated during the half-year. Of these, 105 (67 men, 38 women) were married, 35 (18 men, 17 women) were widowed, and the remaining 148 (100 men, 48 women) were single. Of the 185 males, the age-period varied from 5 to 73 years. The age-period 25 to 30 years supplied 26 cases; 25 were between 35 and 40; while between 30–35 years and 40–45 there were 24 each. Of the occupations, 89 were labourers, 24 housekeepers, 15 spinners, and 11 weavers; the others belonged to almost every type of worker. Mr. Hall recommends in his report the building of a large self-contained pavilion to accommodate female patients, the appointment of a second resident medical officer, the erection of a verandah round the front of the hospital, and an inter-telephonic exchange. He draws attention to the constantly arising difficulty that patients suitable for sanatorium treatment show a strong dislike to entering the infirmary lest they should be considered as paupers, yet this course is necessary, because the institution is under the Poor-law system. There should certainly be a broader field of admission by which the consumptive poor could enter this admirable sanatorium without being branded as paupers. The best solution would be for the public health committee of the city of Belfast to take over the charge of the place as the central authority. The Abbey Sanatorium was acquired by the Belfast guardians in the autumn of 1904, and was opened for 40 patients in January, 1905, while at the beginning of 1908 there were 265 beds. It is interesting to note that in 1905 (the year the Abbey was opened) 1116 patients died from consumption in Belfast, in 1906 the number was 1015, in 1907 it fell to 926, in 1908 it was 880, and in 1909 it was 811. Mr. Hall thinks that a wider field of admission to the Abbey would produce still more gratifying results. This sanatorium is an excellent example of what can be done for the Irish consumptive by an intelligent body of Poor-law guardians, aided by an enthusiastic medical officer.

Consumptives in Irish Workhouses.

At a meeting of the Strabane (county Tyrone) board of guardians held on July 25th a resolution was unanimously passed to the effect that separate accommodation for consumptive patients be provided, and that a committee be appointed to prepare a scheme for the approval of the board.

The Royal Sanitary Institute.

The twenty-sixth Congress of the Royal Sanitary Institute has been in every respect a great success. The discussions in all the sections and conferences have been admirable, largely in consequence of the prior publication in book form, obtainable by each member, of the various papers to be read. On July 25th, in the Conference on the Hygiene of Childhood, Sir John W. Byers (the President) delivered the inaugural address on the Hygiene of the Child, with Special Reference to Ireland, to which reference was made last week. Then followed two discussions, the first, introduced by Professor J. A. Lindsay, on the Hygiene of School Life; and the second, introduced by Dr. Alfred Greenwood, on Infantile Mortality in Large Towns. A most interesting discussion, in which several speakers took part, followed on the Dental Hygiene of Childhood, introduced by Mr. George Thomson, L.D.S. On the same day, in the Section of Sanitary Science and Preventive Medicine, the address of the President, Sir Lauder Brunton, Bart., was read in his absence, as we noted last week. A discussion on Sewage Purification and on Purification of Rivers and Estuaries followed. In the same section, on July 26th, Dr. J. King Kerr read a paper on Typhoid Prevention, Dr. W. J. Wilson and Dr. C. Dickson read one on the Viability of the B. Typhosus in Water and its Isolation Therefrom, and Dr. Thomas Houston made a communication on Epidemic Cerebro-spinal Meningitis. In the Conference of Municipal Representatives on July 25th, at which the Lord Mayor presided, Dr. P. Boobbyer read a paper on Municipal Hospitals. On the same evening Dr. Louis C. Parkes gave a popular lecture on the Prevention of Tuberculosis: a National Task. In the Section of

Engineering and Architecture, on July 26th, a paper was read on How a Town Succeeded without a Town Planning Act; and on July 27th, in the Sanitary Inspectors' Conference, one on the Smoke Nuisance and Dairies and Milk Supply. In the Conference of Women Dr. Eric Pritchard read a paper on the State Endowment of Motherhood, which gave rise to a very fine discussion. After this Dr. John McCaw read a communication on the Reduction of Infant and Child Mortality from Measles. Papers were also read on Women in Public Health and on Hygiene and Industrial Employment by Miss H. Martindale, H.M. senior lady inspector of factories; and one by Dr. Elizabeth G. Bell on Babies' Clubs, in which she described very fully these institutions in Belfast, which were greatly commended by Dr. Eric Pritchard. A vote of thanks to the Lady Mayoress for acting as President was carried. In the Conference of Medical Officers of Health Dr. Samuel Agnew read a paper on the Medical Officers of Health in Ireland. On July 29th Mr. P. C. Cowan gave an interesting presidential address at the Conference of Engineers and Surveyors, after which there were papers on the Discharge of Sewage into Tidal Waters, and on the Dust Nuisance. In the Conference of the Port Sanitary Authorities Dr. R. Thomson gave the presidential address, after which Dr. Herbert Williams of London read a paper on Plague Precautions in Reference to the Destruction of Rats, and Dr. W. Hanna of Liverpool read a communication on the Importation of Unsound Food. In the Veterinary Inspectors' Conference Dr. H. O'Neill read a paper on Meat Infection, and described the new Belfast public abattoir. At the final meeting of the Congress on Friday votes of thanks were passed to various local bodies and to the Earl and Countess of Aberdeen. Saturday was devoted to excursions.

Condition of Irish Schools.

In several papers read at the Sanitary Congress last week in Belfast attention was called to the insanitary condition of Irish primary schools. For years past the Board of National Education has been urging on the Treasury the necessity of fulfilling the promise made by successive Chief Secretaries to find funds to improve and maintain the school buildings. In many cases the expenses of cleaning and heating had to be borne by the teacher himself out of a stipend less than that of a policeman. At length the Government is to find funds to pay half the expense of cleaning and heating the schools, the other half being paid out of local sources. There is, however, no provision for the cost of installing heating and ventilating apparatus. The buildings themselves, moreover, are in many districts utterly unsuitable as school premises. "All types of school buildings are to be found," says our inspector, "from the well-equipped modern school down to the wretched thatched cabin by the roadside, or the equally objectionable erection in a graveyard." One can hardly expect a high standard of hygiene from working classes who receive their education in such surroundings.

July 31st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Diminution of Hydrophobia.

SINCE the first years when Pasteur's discovery of the antirabic vaccine was utilised for the treatment of persons bitten by mad dogs statistics have shown a constant decline in the number of deaths. In the year 1910 the numerical records of the Pasteur Institute, compiled by M. Jules Viala, *préparateur* in the antirabic department managed by Dr. Roux, show that 401 patients had antirabic treatment without any case of death being reported. In the year 1886 the number of persons who after being bitten were treated in the Pasteur Institute was 2671, and among them there were 25 deaths, but in 1896 there were 1308 patients with 4 deaths. Since that time the cases of hydrophobia have diminished from year to year, and the number of bitten persons treated annually at the Pasteur Institute has been under 1000 since 1902. There was 1 death in each of the years 1908 and 1909, the number of patients being 524 in the former and 467 in the latter. Among the 401 cases treated at the Pasteur Institute in 1910 there were 11 foreigners, including 3 of British and 8 of Spanish nationality.

The Physiological Effects of Aeroplane Flying.

The increasing number of aviators and the development of aeroplane flying have given opportunities for making some interesting observations on the physiological conditions incidental to this new method of progression. Several factors have to be taken into consideration. Rising to a great height in the air produces effects similar to those of mountain sickness—namely, giddiness, nausea, and headache; but owing to the rapid transition from a low level to a high one or conversely, the blood pressure if it is altered is not allowed sufficient time to become steady as it can do in mountain climbing; the conditions, in fact, have some resemblance to those of a balloon ascent or of an abrupt descent, and even more resemblance to what is seen in the case of subaqueous workers who are quickly brought to the surface from a diving bell, although in aviation the pressures are very much less. There are also great variations with different individuals, for attacks of mountain sickness and other discomforts due to change of pressure are experienced by some at a height of 1500 metres, while others are not affected until they reach 2000 metres. All the observations that have been made show that the blood pressure is increased, but only to a slight extent because it is counterbalanced by the free access of air which, according to the researches of Langlois, tends to reduce the blood pressure. Other factors to be considered are the duration of the flight and the encountering of difficulties. Nervous fatigue lowers the blood pressure and quickens the pulse. The nervous tension brought about by the necessity for being continually on the alert in presence of dangers has a special influence which varies according to the temperament of the individual. I had an opportunity of examining the aviator Beaumont when he came down from his machine after having won the prize for the European circuit. He was remarkably calm and his pulse-rate scarcely reached 85, but he told me that his great natural composure and his long practice in making ascents did not prevent him from having sensations of emotion and cardiac palpitation in moments of danger. As a general result it may be said that aeroplane flying does not cause any special form of illness. Increase of the blood pressure is the most constant phenomenon, but it is very difficult to collect comparable data from different individuals, because this hypertension is counteracted to a variable extent by such influences as the altitude, the length of the flight, the sensation of danger, and the amount of composure possessed by the aviator.

Dogs in the Medical Service of the Army.

The manœuvres in which the medical department of the army has been engaged with a view to the training of the officers both of the active forces and the reserve have once more shown that dogs may be taught to trace wounded men and guide relief parties to the place where they may be lying. Conclusive experiments have already been made at Nancy, at Rennes, and at Lyons, with the result that these dogs—the so-called *chiens sanitaires*—will henceforth be regularly attached to the service of the French army, and a national society has been formed for the purpose of providing a supply of trained animals. At Vincennes, where the recent manœuvres were held, it was remarkable how quickly a stretcher party accompanied by a trained dog could thoroughly examine every part of an extensive area and carry off soldiers concealed in thickets and under branches in the most difficult conditions. A dog can also work by itself. When sent by its master in a certain direction it finds the wounded man, allows him to take the various articles attached to its collar, and carries his cap back to its master, who fastens a string to the dog's collar and is immediately guided to the place where the man was found. If a cap is not to be had the dog searches with its foot or its nose in the man's pockets and takes a handkerchief, a glove, or some other article which may serve for identification. The dog has a collar to which a bell can be attached, and on its back a piece of cloth fastened to its neck with a strap and marked with the Geneva Cross; it also carries a cloth pocket. Retrievers are preferred to dogs which bark and may thereby give much trouble. The qualities chiefly desired in a *chien sanitaire* and developed by training are a keen sense of smell, absolute obedience to

orders, endurance, and especially gentleness so as not to alarm a wounded man. The presence of these qualities was universally recognised in all the dogs at the manœuvres. For those which are to be used in the French army the Minister of War has ordered a military kennel to be established at Fontainebleau, under the management of Captain Tollet. Another kennel was some time ago constructed at Auxerres and proved very successful. This work is very valuable under the conditions of modern war, both in Europe and in the colonies. The first requisite is the relief of the brave men who have fallen in the defence of their country. If left a long time on the battlefield they are liable to be attacked by birds of prey, and in colonial expeditions they have sometimes been mutilated by returning natives. Modern methods of fighting, the movement of troops over considerable areas during a battle, the long range of modern rifles and artillery, and night fighting make ambulance work very difficult. The number of missing men is always considerable, because picking up the wounded during an action becomes less and less possible. At Rezonville there were 1367 killed and 5472 missing, while at Saint-Privat there were 1146 killed, 6709 wounded, and 4420 missing. Some of these have been wounded men who dragged themselves into sheltered places and died there without receiving any help. The trials which have been made with the *chiens sanitaires* have shown the importance of keen scent for them whatever may be their breed, whether pedigree or not. Their work is of a kind not unlike that of the dogs of the *hospices* of the Great Saint Bernard which rescue persons who have sunk in the snow.

The late Dr. Charles Nélaton.

M. Charles Nélaton, well-known as a hospital surgeon, has just died from embolism at the age of 60 years. A son of Dr. A. Nélaton, who was a member of the Institute and surgeon to the Emperor Napoleon III., he walked in his illustrious father's steps. In 1876 he became *interne des hôpitaux*. In 1880, when he was admitted doctor of medicine, he wrote a thesis of some celebrity entitled, "Effusions of Blood into the Pleuræ after Injuries." In the following year he competed for and obtained the position of surgeon to the Paris hospitals, and in 1889 he became *agréyé* in the Paris Faculty of Medicine. Some of his works highly valued by specialists included "Tubercle in Surgical Affections," "The Relations of Injuries and Heart Disease," "The Causes of the Irreducibility of Old Dislocations of the Hip-joint," and "Non-malignant Tumours of the Bones." In concert with his colleague, Dr. Ombredanne, he wrote treatises on "Rhinoplasty" and on "Autoplasty." He was vice-president of the Surgical Society. His death is a loss to the Hôpital Boucicaut, where he gave many proofs of his professional skill and his kindly disposition. Of unassuming personal character, he will be remembered as a man of eminence in his profession, and one who would have probably accomplished much more if his life had been prolonged. His goodness of heart was well shown by his self-denying behaviour at a competition in which he had done well at the examination and was certain of coming out first. His success, however, would have entailed the defeat of another candidate, an excellent man less happily circumstanced than Nélaton, who retired from the competition so as not to stand in the other's way. Incidents of a similar kind were frequent in Charles Nélaton's life, and caused him to be highly esteemed by the members of his profession who are now mourning his decease.

July 31st.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Diet in Epilepsy.

AT a recent meeting of the Budapest Royal Medical Society Dr. Donath read a paper on the above subject. He said that the directions for diet in cases of epilepsy were usually limited to the avoidance of indigestible articles of food and the avoidance of stimulants. Useful, no doubt, as far as they went, such directions could not be regarded as adequate or commensurate with our knowledge of the deleterious influence of certain articles of food on an organism prone to epilepsy. It had long been held that a diet too rich in albuminoid constituents was harmful to epileptics. Clinical observation had not always confirmed the validity of this view, and, struck by the contradictory nature of the results, Dr. Donath had undertaken a series of observations. He placed groups of epileptic patients on a strict milk diet and a meat diet respectively, and after six weeks he failed to detect any noteworthy effect of either regimen upon the number of attacks or the general health of the subjects. Incidentally, he found that the suppression of chloride of sodium reduced the frequency of the attacks, but at the expense of the general health, marked loss of weight and strength resulting. Alcohol in moderate quantities he found to be devoid of injurious action. The fact that meat does not appear to be injurious to epileptics suggests the desirability of reconsidering the views on which this article of food has been placed under a ban. There can be no lack of opportunities for carrying out the necessary observations, and advantage might be taken of these selfsame observations to study the influence of quantity, as well as quality, of food. Obviously, no hard-and-fast rules can be formulated in this direction, for in epilepsy, more perhaps than in other diseases, it is the patient who requires treatment rather than the disease. What is required are general rules, to be adapted to individual cases with due regard to the constitution, temperament, and habits of life of the sufferer.

The Spitting Nuisance.

At a meeting of the Budapest city council held to consider certain proposed extensions of municipal powers, it was proposed, among other things, to add the following clause with reference to expectoration in public conveyances and on the side-walks of the streets:—

> Any person who, after being cautioned by a policeman or by any officer in uniform of the corporation, expectorates on any public footwalk, or who, after being cautioned by the conductor or any fellow passenger, expectorates in, on, or from any public conveyance, shall be liable to a penalty not exceeding 200 crowns (£8 6*s.* 8*d.*).

After a considerable discussion, lasting over an hour and a half, a vote was taken, and the clause was adopted by 52 votes as against 33.

Jews and Drunkenness.

Dr. Imre Dóczy, in his work on "Alcoholism," claims that Jews under every condition of life are invariably sober. He thinks that this is not because they resist temptation, for as a race they are not particularly given to austerity, but because deep indulgence is disagreeable to them. He has made inquiries respecting the drinking habits of the Jewish people in Hungary, Russia, and England. So far the evidence he could obtain has quite substantiated this assumption. One medical man whose practice is made up in great part of Jews informed him that during the last 10 years he had only once met with a drunken Jew, and in that case the Jew, as regarded his general manner of life and attitude to the Mosaic ritual, was a "renegade." Dr. Dóczy now intends to investigate why the Jews, though exempt from alcoholism, suffer so often from nervous diseases and insanity, which diseases are to a considerable extent consequential on alcoholism.

July 20th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"Death to the Doctor."

"*Morte al medico!*" Such is still the cry of an ignorant, infuriated populace in various provinces of Italy—a cry *motivé* by the fear that in taking the precautions dictated by the Board of Hygiene in presence of enteric disease the local medical authorities were actually courting, if not causing, the epidemic which they were striving to keep at bay. Not only in Sicily, with its chronic *analfabetismo* and superstition and its prompt recourse to personal violence, but within the Roman Province, at the much-frequented bathing resort of Nettuno, the medical officer, no less a man than the delegate of the Red Cross, Dr. Moscioni, was brutally assaulted and maltreated in the exercise of his humane mission. Called to the bedside of a boy *in articulo mortis*

from gastro-enteritis, he endeavoured to persuade the father and mother with their three daughters to accompany him to the local lazzeretto for medical examination. The women consented but the father refused. While Dr. Moscioni was expostulating with him and had even won his assent a crowd gathered before the house and intercepted the doctor, the paterfamilias aforesaid, and the hospital attendants on their way to the lazzeretto. They even tried to enter and remove the dying boy whom they regarded as a victim of the doctor's "arte malefica." But the doctor, the attendants, and the father were beforehand with them, and getting inside locked the door in their face. Savage cries of "A morte! a morte!" ("Death to him! death to him!") followed by volleys of stones, made the position desperate, when a member of the public force, knocking at the door, asked the doctor what he proposed to do. "Remain in the house till the crowd dispersed," was the answer. But the crowd was increasing every minute, and the cannonade of missiles was breaking through the *persiane* (wooden window shutters) when suddenly a man forced his way through one of them, but was stopped by the doctor's levelled revolver. By this time the boy had expired, and the delegate reinforced with a company of carabineers got the doctor out of the house and made a way for him through the crowd. But the shower of stones was redoubled, and the doctor, struck on the breast and on the head, again drew his revolver, but before he could use it got a blow in the face which stunned him and drew blood. At length a tramcar, passing opportunely, picked up the doctor and his escort and put him down at Porto d'Anzio, where he was at once attended to in the local lazzeretto. Such from Dr. Moscioni's own lips is the narrative of what befel him in the discharge of his duty in the suburbs of Rome in the year of grace 1911—the fiftieth of Italy's unity and independence! Even as I write news arrives of an outbreak at Salerno, seat of the once famous medical school, where the fishing population, infuriated at the restriction imposed on the sale of oysters, mussels, and other "frutta del mare," assailed the town hall and the sanitary office with such violence that the local carabineers had to be reinforced with troops of the line before the civic magnates, municipal and medical, could regain their homes in safety. And all this in anticipation, if not in the actual presence, of cholera—an invader which, through tardy precautions, this time last year wrought incalculable loss to Italy's best interests, financial and social. Well may the distinguished publicist Signor Luigi Lucatelli indite a jeremiad on the situation under the title of "Italia Scellerata" (Italy under a curse).

The Health of the Pope.

On July 20th the funeral service in the Sistine Chapel on the anniversary of Leo XIII.'s death was honoured by the presence of His Holiness Pius X., assisted by a distinguished representation of the Apostolic College. It was remarked that the Holy Father appeared greatly fatigued and mentally as well as physically depressed. The day, however, was one of those in which the sirocco prevails, well described as "wind without air, heat without sun, and rain without freshness." This, no doubt, explains in some measure the exhaustion of the septuagenarian pontiff; but it is observed that each successive summer he is less able to stand the subtropical heat. He misses, so say his familiars, the mountain breeze from the Rhaetian Alps, and

"The sea-pulse of the still lagoon."

Apart, however, from a recurring pharyngeal congestion and occasional attacks of gout, his health is not such as to warrant the alarming reports recently put in circulation.

Reafforestation.

The appalling destruction of sylvan growth in Canada, and the forest fires witnessed in the British Isles as far north as Perthshire, revive interest in a theme of more or less perennial interest to all Italians—the preservation of what little woodland remains to them and its renewal by plantation. At Turin, on August 28th, there will be held a "Congresso Forestale" at which the chief authorities on reafforestation will take part. The last congress of the kind was held at Bologna and evoked discussions which will have an even greater relevance in this the "Cinquantario" of the Third Italy.

July 27th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Constantinople.

MOST contradictory rumours as to the actual state of the epidemic of cholera in Constantinople have been circulating. These rumours still continue to agitate not a little the public mind. There are many here who firmly believe that there is no such thing as cholera in Constantinople at present. I have met with medical men who ridiculed the idea of the reappearance of the scourge, and who spoke of certain diseases simulating cholera. They thought that the alarm shown by the public and the medical authorities was quite unwarrantable. "True enough," they said, "there is cholera in the provinces spreading to an alarming degree, but it has not revisited our city this time." The medical authorities, however, from the first took a very different view. Personally, I think that quite a large number of sporadic cases have occurred in different quarters of the metropolis, and that the epidemic still exists and is spreading, though in a milder form. I myself have attended one or two fatal cases, and there was no mistake as to what the malady was; it was genuine cholera asiatica. A special commission under the presidency of Rifaat Pasha, the Minister for Foreign Affairs, met the other day in the Grand Vizierate to discuss the necessary measures to be taken in order to stem the progress of the epidemic in the provinces as well as in the capital. The scourge is occasioning great ravages, especially in the harbours along the southern shore of the Black Sea, and also in some ports of the eastern part of the Sea of Marmora. The Sanitary Office has decided to form different local commissions in various quarters of the city and outside of it, including also municipal medical men, and to subject to the necessary medical examination all the passengers coming from places contaminated by cholera, such as Smyrna and Samsoun. The municipality of Constantinople has taken a number of preventive measures. For instance, medical men will visit this week all the druggists' and chemists' shops to see that each has at ready disposal the required remedies, and that no exorbitant prices are charged for them. These physicians will also visit houses, public establishments, stables, and other such places, to ascertain that the regulations for thorough disinfection have been adhered to. It is intended severely to punish any case of negligence. In some parts of the city and in the suburbs disinfection is carried on by men employed by the municipality itself. A special council has been instituted for the purpose of attending to sanitary matters in the army. The director of the Military Medical Faculty will be a member of this council, and its president will be Dr. Witting Pasha, the chief of the Faculty of Gulhaneh at Stamboul. One or two factories along the Golden Horn have been shut by the authorities because of the very disagreeable smell they were emitting which permeated the whole neighbourhood. The disinfection of Stamboul is being carried on in an especially energetic manner. Houses, bakeries, baths, and coffee houses are visited daily. The proprietors receive certificates testifying that all the prescribed sanitary injunctions have been carried out. From Sophia, the Bulgarian capital, comes the news that cholera has made its appearance in that city. Bucharest also is said to be visited by the scourge. The Hygienic Commission for Hedjaz, which is under the presidency of the Minister of the Interior, has engaged, according to the local newspapers, five medical men, who will be sent to settle permanently in the cities of Mecca, Medina, Djeddah, &c. Eight physicians more will visit these places only during the season of pilgrimage. In Mecca two field hospitals adapted for use in hot latitudes have been erected lately. It has also been decided to construct a third hospital on the same lines in the new military barracks.

Cholera and Malaria at Bassora.

Fleeing from the scourge of cholera which is raging in a terrible fashion at Bassora, several thousand Jews have gathered at what is known as the Tomb of the Prophet Ezra, on the banks of the river Tigris, five kilometres from Bassora. There the unfortunate people spend their time in lamentation and prayer. The hygienic and sanitary conditions among them are exceedingly bad and the rate of

mortality is very high. There is no medical man on the spot and none would volunteer to visit it from the neighbouring places. The Jews suffer not only from cholera, but also from the ravages of malarial fever, which is raging there in consequence of the numerous extensive marshes. A French paper bringing this news urges the Ottoman Government to send speedy medical assistance.

Lack of Medical Men.

In the provinces of Asia Minor there are many extensive localities and districts where not a single medical man can be found. One can easily imagine, therefore, the bad sanitary conditions under which the population in those places lives, especially in time of epidemic. Thus typhoid fever was raging lately in Dersim, where people were dying by dozens, but in spite of the governor's efforts no medical man was to be had. Only after the death of a Turkish notable and of his wife did the authorities decide to send out a medical man.

July 28th.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—**At the First Professional Examination held on July 17th, 18th, 19th, 20th, and 21st the following candidates were approved in the under-mentioned subjects:—**

Chemistry and Physics.—Leslie Graham Blackmore, Middlesex Hospital; Philip Audley Brown, Brighton Municipal Technical College; George Henry Kelsey Burge, Westminster Hospital and King's College; Charles de Frias, London Hospital; David Hamilton Derry, Royal Albert Memorial College, Exeter, and St. Bartholomew's Hospital; Gerald Gordon Drummond, St. Thomas's Hospital; Cyril Bowdler Henry, Sheffield University; Charles Guy Hitchcock, London Hospital; Russell Walbancke Hodgson-Jones, Manchester University; Harold Reginald Wessen Husbands, Bristol University; Claude Stewart James Kearney, St. Bartholomew's Hospital; Sidney John Liddon Lindeman, St. Bartholomew's Hospital; Marie Gertrude Gwendoline Calvert Link, South Western Polytechnic; Guyon Lynden-Bell, King's College; John Edward Carbery Maguire, St. Bartholomew's Hospital; Rodney Honor Maingot, St. Bartholomew's Hospital; George Edwards Mullins, Birmingham University; Sinnethamby Muttiah, London Hospital; Alfred Samuel Woolaston Pearmund, Guy's Hospital; Frederick Porter-Smith, St. Thomas's Hospital; Edward Austin Prichard-Evans, University College, Cardiff; Edmund Douglas Richardson, Charing Cross Hospital; John Rowland, St. Thomas's Hospital; Percy Gunn Russell, Portsmouth Municipal College; William Henry Sarra, London Hospital; Robert Gordon Simpson, Plymouth Technical Schools; John Bevil Grenville Skelton, London Hospital; Denys Munro Smith, Bristol University; James Randolph WillianStephens, Manchester University; Arthur Alward Watkinson, Charing Cross Hospital; Frederick Langton Webster, Manchester University; Nathan Judah Wigram, Sheffield University; and William Edwin Wilson, St. Bees' School and St. Bartholomew's Hospital.

Chemistry.—Reginald George Joseph Charlesworth, Charing Cross Hospital; Cyril Gould, University College; Roy Dyson Langdale-Kelham, University College; Samuel Durham Lodge, Leeds University; George Samuel Bousfield Long, Guy's Hospital; Roy Bingley Pullin, St. Bartholomew's Hospital; Gerald Richardson Sharp, London Hospital; William Walford Salisbury Sharpe, St. Mary's Hospital; Arthur Sunderland, Charing Cross Hospital; and Percy Ward, Sheffield University.

Physics.—Basil Edward Barnes, Birmingham University; Kenneth Leslie Bates, Guy's Hospital; Hugh Stanford Bryan, London Hospital; Frank Philip Gilbert de Smidt, London Hospital; Herbert Mervyn Drake, St. Thomas's Hospital; John Eric Evans, Liverpool University; Melville St. Clair Hamilton, Charing Cross Hospital; William Norman Harrison, St. Mary's Hospital; Wilhelm Otto Holst, Middlesex Hospital; George Hubert Howe, Guy's Hospital; Henry David Llewellin Jones, St. Mary's Hospital; Theodore Louis Kan, King's College; Guy Kinneir, Tonbridge School; William Ulic Desmond Longford, St. Bartholomew's Hospital; Jose Miguel Madariaga, Buenos Ayres and St. Thomas's Hospital; Lionel Watson Moore, Guy's Hospital; Dudley George Pearce, Guy's Hospital; George Cuthbert Robinson, St. Thomas's Hospital; Henderson Whyte, London Hospital; and Ismail Zaki, University College.

Biology.—Basil Edward Barnes, Birmingham University; George Henry Kelsey Burge, Westminster Hospital and King's College; Joseph Woods Clayton, London Hospital; Dennis Reginald Curnock, Birkbeck College; Charles de Frias, London Hospital; David Hamilton Derry, Royal Albert Memorial College, Exeter, and St. Bartholomew's Hospital; David MacMurray Dickson, St. Thomas's Hospital; George Augustus Norman Dod, Birkbeck College; Herbert Mervyn Drake, St. Thomas's Hospital; David John Evans, University College, Cardiff; Cyril James Gozney Exley, University College; Gloster Tyndall Garraway, University College; Cyril Gould, University College; Russell Walbancke Hodgson-Jones, Manchester University; Wilhelm Otto Holst, Middlesex Hospital; Tudor Philip William John, University College, Cardiff; Mahmood Mahfooz, Cairo and King's College; Harry Millett, Guy's Hospital; Sinnethamby Muttiah, London Hospital; Raphael Neft, Guy's Hospital; Warre Harriott Alexander Pratt, Guy's Hospital; Thomas Francis Reason, Technical College, Swansea; Edmund Douglas Richardson, Charing Cross Hospital; Rupert Idris Rhys, University College, Cardiff; Robert Gordon Simpson, Plymouth Technical Schools; Arthur Dighton Stammers, London Hospital; James Randolph William Stephens, Manchester University; Felix Tagger, Charing Cross Hospital; Donald Carmichael Thomas, St. Thomas's Hospital; Frederick Langton Webster, Manchester University; and Henderson Whyte, London Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—**At the Preliminary Science Examination for the Licence in Dental Surgery, held on July 17th, 19th, and 21st, the following candidates were approved in the subjects mentioned:—**

Chemistry and Physics.—Gerald Beaumont Ash, Polytechnic Institute; Douglas Arthur Bevis, Portsmouth Municipal College; Reginald Gordon Bradley, Birbeck College; Stanley Bremner, Liverpool University; Charles Reginald Cade, Royal Albert Memorial College, Exeter; Walter Ernest Coe, King's College; Debenham Stuart Coombs, Middlesex Hospital; William John Curtis, Middlesex Hospital; William Robert Davies, Bangor; Clifford Cedric Dixon, Leeds University; Victor Robert Dyke, Sexey's School, Bruton; John Kelvin Sawards, Liverpool University; Raymond Cecil Thomas Evetts, Polytechnic Institute; Harold Mayston Fisher, Battersea Polytechnic; Cecil William Hammond-Williams, Guy's Hospital; Charlie Lewis Hicks, East London College; Harry Austen Hutson, Polytechnic Institute, Philip Everard Jessop, Polytechnic Institute; John Arnold Johnstone, Middlesbrough High School; Leslie Grantham Lunnon, Polytechnic Institute; Harold Armstrong Metcalfe, Technical College, Sunderland; Lancelot Eric Charles Peckover, Brighton Technical College; Geraint Arthur Pennant, University College, Cardiff; Beresford Tom Richards, Derby Technical College; Stephen Archibald Rodda, Wandsworth Technical Institute; Frederick Elliott Smith, Polytechnic Institute; Herbert Leslie Smith, Brighton Technical College; Harold Treleaven, Middlesex Hospital; William Thomas Williams, Liverpool University; and John Clark Yeoman, Birmingham Technical School.

Chemistry.—Henry Hall Buckley, Royal Technical Institute, Salford; William Sutton Campbell, University College, Cardiff; Arthur Hedley Cole, Plymouth Science, Art, and Technical School; Frank Briggs Cullen, University College, Nottingham; Howard Curtis, Hartley College, Southampton; Edmund Dinsmore, Charing Cross Hospital; John Langley Garrard, Guy's Hospital; Herbert Gee, Holt Schools, Birkenhead; William Henry Churchill Gordon, Guy's Hospital; Arthur Helmuth John Miller, Charing Cross Hospital; Fairman John Ordish, Mercers' School; Ernest Bert Parry, Battersea Polytechnic.

Physics.—Frederick James Arbery, Polytechnic Institute; Harry Edward Atkins, Birkbeck College; Walter Pigott Barfoot, Brighton Municipal College; Armin Frank Maximilian Fuoss, Wolverhampton Grammar School; Godfrey Macdona Hick, Bristol University; Bernard Isaacs, Guy's Hospital; Leonard Stanley Pilbeam, Brighton Municipal College; Frank Edwin Rudd, Norwich Technical Institute; and Arthur Herbert Virgin, Bristol University.

UNIVERSITY OF LONDON.—**At the Second Examination for Medical Degrees (Part II.), held in July, the following candidates were successful:—**

Edward Smith Abraham, University of Bristol; William Daniel Arthur, University College, Cardiff; Joe Edward Ashby, Charing Cross Hospital; Leonard Barron Baird, Victoria University of Manchester; Irene Bastow, London (Royal Free Hospital) School of Medicine for Women; Robert Maitland Beath, Queen's University, Belfast; Frank Percy Bennett, St. Mary's Hospital; Geoffrey Andrew Bird, St. Thomas's Hospital; Alice Dorothea Brooks, London (Royal Free Hospital) School of Medicine for Women; Frederick Charles Sedgwick Broome, Guy's Hospital; Marion Mildred Barrow Burt, University of Birmingham; William Burt, St. Thomas's Hospital; Noel St. John Grey Dudley Buxton, University College; Aaron Simeon Cohen, University College, Cardiff; Frederick Hugh Lester Cunningham, St. Bartholomew's Hospital; John Horace Dancy, King's College; Joseph de Silva, St. Mary's Hospital; *Arthur Rawdon Carrington Doorly, St. Thomas's Hospital; Philip Oswald Ellison, St. Bartholomew's Hospital; Georg Arnold Gassman, London Hospital; Henry Little Hardy Greer, Queen's University of Belfast; Cecil Rhodes Harrison, St. Mary's Hospital; *†Henry Julyan Hoyte, King's College; *†Arthur Llewelyn Jones, McGill University, Montreal, and London Hospital; Eric Pierpoint Langley, St. Mary's Hospital; Abraham Stephen Liebson, Guy's Hospital; Oliver Cuff Link, Middlesex Hospital; Geoffrey Trevor Lougborough, St. Bartholomew's Hospital; Norman Peace Lacy Lumb, St. Thomas's Hospital; Ronald Guy Lyster, St. Bartholomew's Hospital; Arthur Griffith Maitland-Jones, London Hospital; Refna Mallet, London (Royal Free Hospital) School of Medicine for Women; *John Ernest Pearce, St. Bartholomew's Hospital; Cyril Eaton Petley, Guy's Hospital; Robert Edward Roberts, University of Liverpool; William Eric Roper Saunders, St. Bartholomew's Hospital and University of Durham; Reginald Hugh Simpson, St. Bartholomew's Hospital; Hector Smith, Charing Cross Hospital; ‡Francis Gerald Augustus Smyth, St. Bartholomew's Hospital; Henry James Drew Smythe, University of Bristol; ‡William Edward Tanner, Guy's Hospital; Charles Hamblen Thomas, St. Bartholomew's Hospital; Naomi Tribe, London (Royal Free Hospital) School of Medicine for Women; Joseph Stephen Wallace and John Glen Wardrop, University College; Thomas Burges Welch, St. Bartholomew's Hospital; Eva Muriel White, London (Royal Free Hospital) School of Medicine for Women; Henry Parks Whitworth, Guy's Hospital; William Bernard Wilson, St. Bartholomew's Hospital; Arthur Graham Winter and Herbert Gregory Winter, London Hospital; William Pridham Wippell, St. Bartholomew's Hospital; Montague Sydney

Woolf, University of Birmingham; and *†James Montague Wyatt, St. Thomas's Hospital.

* Distinguished in Anatomy. † Distinguished in Physiology.
‡ Distinguished in Pharmacology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates satisfied the examiners:—

FINAL M.B. AND CH.B. EXAMINATION.

C. E. Butterworth, Norman Duggan, A. W. Gaye, Harold Heathcote, *A. H. Holmes, *W. H. Kauntze, Mabel E. May, *Jane C. Miller, Manfred Moritz, Lovel Moss, *S. B. Radley, G. E. Sawdon, J. B. Scott, William Stirling, *J. S. B. Stopford, and G. K. Thompson.

Obstetrics.—W. H. Laslett.

Forensic Medicine and Toxicology.—O. R. Allison, Walter Barnes, R. B. Berry, A. G. Bryce, L. T. Challenor, Geoffrey Fildes, A. W. Gaye, Harold Harrison, George Jackson, J. A. Lees, P. H. Midgley, H. G. Peake, L. W. Sparrow, C. F. White, Vera N. Welzmann, and A. G. Wilkinson.

* Second-class honours.

MASTER IN SURGERY.

John Morley.

THIRD M.B. EXAMINATION.

Pharmacology and Therapeutics and Hygiene.—Allan Barrett, F. A. Bearn, J. G. Bennett, E. S. Brentnall, C. H. Crawshaw, H. N. Crossley, H. F. Hutchinson, Eugene Leahy, C. G. Lees, F. L. Newton, W. L. Nicholson, T. P. Robertson, A. V. Stocks, Ernest Talbot, Cornelius Thompson, H. W. F. Williams, and G. W. Wood.

Hygiene.—H. S. Gerrard.

FIRST M.B. EXAMINATION.

Part III., Organic Chemistry and Bio-Chemistry.—H. W. Bennett, C. P. Brentnall, J. D. Byrd, Hitchon Chadwick, Robert Chevassut, J. S. Chorlton, Edgar Granger, J. B. Leigh, H. M. von Mengershausen, J. F. C. O'Meara, John Rigby, H. H. Stones, C. G. Todd, Frank Vause, Bryan Walley, and Richard Willan.

FINAL B.D.S. EXAMINATION.

A. C. W. Hutchinson.

FIRST B.D.S. EXAMINATION.

M. C. Paterson and Aquila Whitehead.

DIPLOMA IN DENTISTRY (FINAL EXAMINATION).

H. R. Ellis, Arnold Gibson, W. F. Gregory, D. M. Lawrie, C. H. Plummer, W. J. Piper, S. G. Ross, Thomas Rothwell, and A. B. Tough.

DIPLOMA IN PUBLIC HEALTH.

M. T. Ascough, Alan Boyle, E. F. S. Green, A. K. Lomas, Agnes J. Maclaren, Edith M. Marsden, C. B. Marshall, R. H. Mercer, Richard Price, W. W. Uttley, and C. F. Walker.

CERTIFICATE IN FACTORY HYGIENE.

Alan Boyle, J. D. Buchanan, Alfred Greenwood, Hugh Lawrie, J. S. Manson, W. C. Rigby, Harold Thorp, and W. W. Uttley.

CERTIFICATE IN SCHOOL HYGIENE.

John Allen, Alan Boyle, J. D. Buchanan, William J. Cox, Alex. Grant, Hugh Lawrie, Harriet McCloghry, and A. H. Norris.

Mr. Judson Sykes Bury, M.D. Lond., B.Sc. Manch. and Lond., F.R.C.P. Lond., has been appointed to the Chair of Clinical Medicine in the University of Manchester. Dr. Bury holds the position of physician to the Manchester Royal Infirmary and was formerly Bradshaw lecturer to the Royal College of Physicians. He has written an important work on clinical medicine and is joint author with the late Dr. James Ross of a treatise on "Peripheral Neuritis."

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates, having passed the necessary examination, have been admitted Fellows of the College:—

R. H. Adams, L.R.C.P. & S.I.; J. W. Killen, M.B., B.Ch., Royal University; A. A. M'Connell, M.B., B.Ch. Dub.; W. F. O'Connor, M.B., B.Ch., Royal University; Miss M. J. Shire, L.R.C.P. & S.I.; and S. B. Surti, L.M. & S. Bombay.

The following candidates have passed the primary part of the Fellowship Examination:—

W. I. Adams; R. A. Austin; T. W. Conway, L.R.C.P. & S.I.; W. A. Fernando, M.R.C.P. Lond., M.R.C.S. Eng.; J. G. J. Green; W. McCready, M.B., B.Ch., Royal University; F. P. B. M'Tavish; M. Shipsey; and R. P. Weldon.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ernst Grawitz, extraordinary professor of medicine in the University of Berlin and director of the medical department of the Charlottenburg Hospital. He was a younger brother of Professor Paul Grawitz of Greifswald and was 51 years of age. His principal publications referred to his long-continued researches on the condition of the blood in chronic lead poisoning and in many other diseases.—Dr. H. Senator, extraordinary professor of medicine in the University of Berlin.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held on July 27th at Caxton House, Westminster, Sir Francis H. Champneys being in the chair. The Board considered the following charges, amongst others, against the midwives whose names are given below and ordered them to be struck off the roll. Amelia Ashton, that being in attendance as a midwife at a confinement she was guilty of negligence and misconduct in that she did not wear a dress of washable material, as required by Rule E. 1; she did not take with her the appliances and antiseptics required by Rule E. 2; she did not adopt the antiseptic precautions required by Rules E. 3 and 7; and she washed the patient in the same water and with the same flannel which she had previously used for washing the baby. Elizabeth Bell, that being in attendance as a midwife at a confinement, the patient suffering from abdominal swelling and tenderness on March 27th, she did not until 10 P.M. on March 28th explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 19 (4) of the rules then in force. Harriet Blowers, that when attending her patients she did not wear a dress of washable material as required by Rule E. 1; that she persistently neglected to provide herself with the appliances and antiseptics required by Rule E. 2; and that she did not take the temperature of her patient, being unable to use a clinical thermometer. Mary Denham, that having been enrolled in virtue of having been in *bonâ fide* practice as a midwife for a year before the passing of the Midwives Act, 1902, and never having passed the examination of the Central Midwives Board, or any other examination in midwifery, she had nevertheless falsely, and in breach of Rule E. 26 of the rules in force before July 1st, 1911, represented herself on her door-plate, and by means of cards and advertisements, as (*a*) "Certificated Midwife by Examination of the Central Board"; (*b*) "Certificated by Examination Central Midwife Board"; and (*c*) "Certificated Midwife by Examination of Central Board." Ann Fox, that being in attendance as a midwife at a confinement, the mother being ill and suffering from retention of urine, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 18 of the rules then in force. Harriet Growcott, that she was uncleanly in her person, clothing, and appliances; that she did not take the temperature of her patients, being unable to use a clinical thermometer; and that she did not keep her register of cases as required by Rule E. 22 of the rules in force before July 1st, 1911. Caroline Amelia Hutt, that being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 19 (5) of the rules then in force. Mary Ann Margaret Hyde, that she had on several occasions employed an uncertified person as her substitute, contrary to the provisions of Section 1 (4) of the Midwives Act, 1902. Sarah Jane Leach, that being in attendance as a midwife at a confinement, she failed to adopt the antiseptic precautions required by Rules E. 3 and 7; and that she failed to give proper attention to the comfort and cleanliness of the child during the puerperium, as required by Rule E. 11. Mary Ann Pickering, that at the Birmingham Assizes on March 21st, 1911, she was convicted of counselling and procuring one Louisa Hillier to attempt to procure abortion, and was thereupon sentenced to 18 months' imprisonment with hard labour. Hannah Rhodes, that she cut the patient's perineum with a pair of household scissors without disinfection; she removed the afterbirth by pulling on the cord until it broke and then by inserting her hand into the patient's uterus; and she did not take the patient's temperature at any time. Ann Sant, that being in attendance as a midwife at a confinement, she

did not attend to the comfort of the patient, nor did she remove soiled and blood-stained linen from her neighbourhood, as required by Rule E. 10. Sarah Stanley, that being in attendance as a midwife at a confinement, the patient being ill on March 30th, suffering from headache and severe abdominal pain, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 19 (4) of the rules then in force. A registered medical practitioner having been sent for on March 31st, she failed to notify the fact to the local supervising authority as required by Rule E. 20 of the rules then in force. Ellen Upton, that she was uncleanly in her person, clothing, and house; that when attending a patient she did not wear a dress of washable material as required by Rule E. 1; and that she did not possess the appliances or antiseptics required by Rule E. 2. The following midwives were censured after charges against them had been considered: Elizabeth Jones and Annie Walker.

BELFAST HOSPITAL FOR DISEASES OF THE SKIN.—At the annual meeting of this charity, held on July 29th, it was reported that during the past year 915 patients had been treated, and that there was to the credit of the hospital a balance of £233 12*s.* 3*d.* The buildings and the equipment of the hospital are in a thoroughly satisfactory condition, and the latest methods of treatment are in use.

Dr. A. Philip Mitchell, clinical assistant at the Royal Infirmary, Edinburgh, has been awarded a research scholarship (value £150) by the Council of the British Medical Association.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Bill.

On Monday, July 31st, the House of Commons resumed discussion of the National Insurance Bill in committee. An interesting debate on the position of hospitals under the Bill arose in the discussion on Clause 12. This clause lays down the manner in which contributors who are inmates of hospitals and similar institutions are to be dealt with. The first subsection runs as follows:—"No payment shall be made in respect of sickness, disablement, or maternity benefit to any insured person during any period that he is an inmate of any workhouse, hospital, asylum, or infirmary supported by any public authority, or out of any public funds, or by a charity, or sanatorium, or similar institutions established under this part of the Bill."

Mr. POLLOCK was able to raise the general question of the relation of hospitals to the Bill by an amendment proposing to leave out the words "or by a charity." The main considerations on the subject were set forth in speeches delivered by Mr. AUSTEN CHAMBERLAIN and Mr. LLOYD GEORGE.

Mr. AUSTEN CHAMBERLAIN said that at a previous stage the Chancellor of the Exchequer had stated that in approaching this question honourable Members ought not to be discouraged by the experience of Germany in regard to hospitals under a system of National Insurance. He was under the impression that the great proportion of German hospitals were State-aided institutions only dependent on private subscriptions and donations. He did not think that the example of Germany gave this country any guidance as to what would happen here. Our voluntary hospital system was old-established, of slow growth, and largely encouraged in recent years by Saturday and Sunday collections. It must be clear to everyone that institutions which had largely been dependent on voluntary subscriptions of employers and workmen could hardly expect equal sums in future when the State stepped in and taxed workmen and employers to provide that which the workmen had previously had to provide for themselves. Where the collections had been largest honourable Members might expect that the hospitals would lose most. He had received information from a meeting which represented 44 hospitals in the midland counties and they calculated that 50 per cent. of their entire income was liable to be adversely affected by the Bill, and in the case of individual hospitals the proportion rose to 75, 80, or even 90 per cent. In these circumstances it was not surprising that hospital managers viewed the provisions of this Bill with something like dismay. He wanted to remind the committee that there was another function fulfilled by these institutions, and that was the training of the whole medical profession of the country. The members of that profession were dependent upon the experience which they got in the hospitals for the progress of medical and surgical science. If anything went wrong with the hospitals the whole community would be losers. He would propose that where the insured person became an inmate of these institutions supported by voluntary contributions or partly by voluntary contributions—if he had no dependents—all the money which was due to him as sick pay should go towards his maintenance in the hospital. If he had dependents the money should be divided between the hospital and the dependent. The Chancellor of the Exchequer had reserved a large sum for treatment in sanatorium for persons suffering from tuberculosis. He suggested that the right honourable gentleman should allot some of that money to hospitals where efficiency had been proved to some central authority. If that were not possible, then for each man sent for hospital treatment there should be some payment from the National Fund. The right honourable gentleman had spoken as if the hospitals would be relieved of much of their work, but many hospital authorities did not share that view and thought that under the Bill they would have not fewer but more people sent to the hospitals. He saw that the Chancellor of the Exchequer had an amendment to provide for the payment under certain circumstances to hospitals from the sickness benefit of persons with no dependents, but it was wholly inadequate.

Mr. LLOYD GEORGE, in the course of his reply, said that it was quite obvious that no system which had for its object the promotion of national health ought to do anything which would impair the efficiency of the great hospitals of this country, and he thought he would be able to satisfy the committee that there was no real justification for the fears entertained by many of those engaged in hospital work with regard to the Bill. By the amendments which would be proposed he thought the faintest shadow of fear ought to be removed. He would give reasons to show that the fear had no foundation in fact. The first thing that would happen under the Bill would be that hundreds of thousands of out-patients would be transferred from the charge of the hospitals to the charge of the Fund. Mr. SYDNEY HOLLAND had told him that the London Hospital was not undertaking the work of medical officers of workhouse infirmaries or of parish doctors. On the other hand, it was not undertaking the work of treating those who were well enough off to pay medical men themselves. It was the class in between that was treated, and this was the class that would be dealt with by the Bill. That would relieve the hospitals of a very heavy burden now cast upon them. If these people did prefer to go to the hospital, he did think that the hospitals ought to have a right to impose some charge upon them. His second point was this: the Bill took away the heavy charge for the treatment of tuberculosis. The charge for this at present was out of all proportion to the number of persons treated. The hospitals were not looking at their diminished charges in this respect. He did not see why the workman should contribute less to hospitals in the future than he had done in the past. A man who at present was paying 6*d.* or 8*d.* to his Friendly Society would pay 4*d.* in the future for his benefits. There was no reason why the man who was now paying an extra penny towards his hospital should not pay the same sum, or more, in the future. He did not think that there was much in the contention that the employers' subscriptions would be diminished to an enormous extent. The diminution of employers' contributions had not taken place in consequence of the passing of the Workmen's Compensation Act, and there was no danger that they would not discharge what they regarded as their fair obligation to their workmen in the future. As to new sources of revenue, he did not rule out the suggestion of Mr. A. CHAMBERLAIN that there might be some sort of committee which would dispense a sum of money in such a way that the hospitals should not be left out. Then the approved societies had the power to make subscriptions, and, he thought, that ought to extend also to the Local Health Committees. There was no power for a compulsory levy, but if the hospital funds were going down and their usefulness being threatened, he thought it would be in the interest of the societies to subscribe. It was said that these societies did not subscribe very readily. Perhaps honourable Members should not depend too much on the volume of their subscriptions. He attached greater importance to the amendment as to the payment of sick pay of those who had no dependents to the hospitals. It meant in the case of the vast majority of bachelors that 10*s.* a week would be paid for the first three months. That was a perfectly new source of revenue. He thought those in charge of hospitals were exaggerating the danger. They were overlooking the diminution in charges falling upon them, and at the same time they were overlooking the new sources of revenue. He thought the hospitals would be much better off in the future than in the past, and everything would be gained by exciting a new interest in national health.

Various views were expressed in the course of the subsequent debate. Mr. H. LAWSON considered that the Chancellor of the Exchequer had very greatly underrated the hospital grievance. He thought that the increased care which was to be taken of the health of the people made it certain that the expenses thrown upon hospitals would be increased, and no means were provided by the Bill to meet the increased expense. It should be made obligatory on the Health Committee to pay for work done in hospitals. Mr. J. SAMUEL objected to

deducting money from benefits for the maintenance of hospitals which were supported by the subscriptions of working men. Mr. CASSEL, on the other hand, contemplated some arrangement whereby at least a part of the sick pay went to the hospital. Mr. LANSBURY acknowledged the work done by the voluntary hospitals, but said that public money ought not to be granted to private institutions without an accompanying public control. Mr. LYTTELTON expressed doubts as to whether employers would contribute as much to hospitals as they did now, whilst in his view the demands on them would be increased. He also contemplated an arrangement whereby some part of the sick benefit should be diverted to the hospital. Mr. O'GRADY took the view of the Chancellor of the Exchequer that working-men would not cut off their contributions to hospitals if the funds fell off to a dangerous extent. Mr. HARWOOD was convinced that the Government would have to face the problem of placing the hospitals on a sound national basis. Sir ROBERT FINLAY remarked that it was widely held by those concerned that the Bill as it stood would prejudicially affect the medical and scientific work of hospitals. Sir RUFUS ISAACS, the Attorney-General, said that the words "or by a charity" left it in doubt whether institutions supported by public subscriptions would be included. Accordingly he would propose to add the words "or by voluntary subscriptions."

The amendment of Mr. POLLOCK was then withdrawn, and the words suggested by the Attorney-General were inserted.

An amendment was then proposed by Mr. AUSTEN CHAMBERLAIN to the effect that the sickness benefit of an insured person should "if he be an inmate or patient of a hospital or institution supported by voluntary subscriptions be divided between that hospital or institution and his dependents (if any) in such proportions as the Local Health Committee may determine, and in all other cases shall be." This amendment was criticised by several Members, Dr. ADDISON remarking that money ought not to be taken from dependents for the sake of hospitals. He agreed that hospitals ought to be paid for the services rendered to sick persons, but the payment should not come out of the sick fund. The Attorney-General, whilst not prepared to accept Mr. CHAMBERLAIN'S amendment, suggested that some arrangement might be arrived at on the Chancellor's amendment, which would come on later. The amendment was accordingly withdrawn.

On Tuesday an amendment proposed by Mr. LLOYD GEORGE was accepted by which a part or the whole of the sickness benefit falling to an insured person who was a member of an approved society and the inmate of a hospital might under a special agreement be devoted towards his maintenance in the hospital. Clause 12 was agreed to.

On Clause 13 a most important amendment, placing medical benefit under the administration of Local Health Committees instead of approved societies, was carried. The clause deals with the benefits to be administered by approved societies or the Local Health Committees. The first subsection runs: "Sickness benefit, disablement benefit, and maternity benefit, and subject to the provisions of the next succeeding section, medical benefit shall be administered in the case of insured persons who are members of an approved society, by and through the society, and in other cases by and through the Local Health Committees; sanatorium benefit shall in all cases be administered by and through Local Health Committees."

Dr. ADDISON proposed an amendment to transfer the administration of medical benefits to the Local Health Committees. He spoke for 40 minutes in a pretty well-filled House which gave him a sympathetic hearing. The speech was closely reasoned. In the first place, he pointed out that the effect of the Bill on the practice of medicine and surgery in the whole country would be profound. The ultimate effect of the Bill upon public health and the welfare of the next generation would depend upon the machinery provided in it for administering medical benefits. The honourable Member considered the conditions under which medical benefit would be administered under the auspices of approved societies in a given area. There would be no common growth and development and no definite mode of coöperation between them. Club practice would be perpetuated. Dr. ADDISON explained to the House the deplorable results of this system. The remuneration to the medical man was often so inadequate that it was impossible for him to give to individual patients the detailed attention which was so necessary. It would be a highly dangerous experiment to apply to practically the whole of the population such a system as hitherto had been accompanied by constant striving. There was something in club practice against the ideals of the practice of medical men, and the great majority of them in the country had declared that they could not work on club lines under this Bill. Club practice was against the development of the best treatment or the adoption of preventive measures. Dr. ADDISON then dealt with the undesirability of underpaid professional work. If the medical men were kept under Friendly Society control, and that were extended by the Bill, there was no doubt that there would be a serious depreciation in the standard of the medical profession at the whole success of the Bill depended upon the efficiency of the medical services. Dr. ADDISON, in conclusion, pointed out that medical benefit could be much more efficiently organised and joined into the public health service under the *régime* of Local Health Committees. Through the Local Health Committees it would be possible to get machinery which could be worked in connexion with the prevention of disease.

Many Members supported the amendment. Mr. H. W. FORSTER spoke from the front Opposition bench in favour of it. He stated that the Bill would be unworkable if the coöperation of the medical profession could not be secured. "We want the best medical attendance," said Mr. FORSTER," "we want uniformity of practice and administration. We shall get that to a far greater extent by placing medical benefit under the Local Health Committees than under the provided societies." Mr. GLYN-JONES, who approaches the question largely from the point of view of pharmacists, gave the amendment his support. Sir PHILIP MAGNUS emphasised the unanimity of the medical profession in asking for the amendment. Dr. ESMONDE, who brings a large amount of personal experience to the solution of such problems, gave the amendment warm support. He stated that it was unquestionable that the way in which club patients had had to be treated was not the way in which they should be treated if the Bill was to be a success. He also emphasised the hostility of the medical profession to Friendly Society control. Mr. GIBBS also warmly favoured Dr. ADDISON'S proposal, and remarked on the desirability of making the medical profession more attractive for the best men. A plea upon behalf of the Friendly Societies was entered by Mr. JOHN WARD, who thought that the services rendered by them had not been recognised in the debate. Mr. C. HARMSWORTH also said that scant justice had been done in the debate to the work accomplished by them. He asked that the medical institutes of those societies should be safeguarded. Sir HENRY CRAIK, who speaks for the medical graduates of Glasgow and Aberdeen Universities, gave a whole-hearted support to the amendment. Mr. BARNES, an important member of the Labour party, also argued in favour of it.

Late in the evening the amendment had the warm advocacy of a member of the medical profession on the opposition benches—Dr. A. P. HILLIER. Dr. ADDISON had spoken from the Ministerialist benches and Dr. ESMONDE from the Nationalist. The combination of these three Members, differing in their general political views, emphasised the feelings entertained by the profession towards Friendly Society control. There were some dissenting voices when Dr. HILLIER remarked that there had been no unreasonable hostility of the medical profession to the Bill. The amendment, he said, would be equitable both to medical men and the Friendly Societies. The Local Health Societies would be the strongest bodies to obtain uniformity of practice, and certainly stronger than the approved societies to deal drastically with the subject of malingering.

Mr. LLOYD GEORGE refrained from intimating the attitude of the Government to the amendment until he had heard the representative expression of views from all quarters of the House. In stating that the Government had decided to leave the matter to the free vote of the House unfettered by putting on the party whips for the division, the Chancellor of the Exchequer said that the amendment affected neither the finance nor the fabric of the Bill. Personally, he had always felt that it would be far better that the arrangements for medical benefit should be in the hands of the Local Health Committees. This proposal, however, could not be carried unless there was a practical unanimity on both sides of the House. The debate showed that there was an overwhelming body of opinion in favour of making the change suggested by Dr. ADDISON. The right honourable gentleman went on to discuss the work done by the Friendly Societies, which in the past had provided medical benefit for the working classes who were not prepared to resort to the parish. He had no doubt that there were cases where the payments to medical men had been very inadequate. However, the medical profession was to some extent to blame in the way in which Friendly Society appointments had been competed for. However, he appealed to those who represented the societies to recognise that the conditions had changed. The expense of medical attendance was going up in the future, as there was to be a higher standard. Drugs also were going to cost more. For these reasons the Friendly Societies should recognise the changed conditions and transfer their benefits to the Local Health Committees at the outset. The Chancellor of the Exchequer pointed out, in conclusion, that the amendment would require some adjustment as to the payments to be made by the approved societies to the Local Health Committees. His own preference was for a mutual arrangement subject to an appeal in cases of disagreement to an impartial body—say the Insurance Commissioners.

The amendment was finally carried by 387 votes to 15, the announcement of the figures being received with loud cheers.

Clause 13 as amended was agreed to.

The Administration of Medical Benefits.

On Wednesday the House of Commons took up consideration of Clause 14 of the National Insurance Bill, which deals with the administration of medical benefit. Several very important amendments were made in its terms. Sir PHILIP MAGNUS moved an amendment confining the medical benefit to insured persons whose income from all sources did not exceed £104 a year. He and other speakers pointed out that this income limit was demanded by a unanimous medical profession. Mr. LLOYD GEORGE took a hostile attitude to the amendment, declaring that a two-pounds a week income-limit

was artificial and would operate with quite different incidence in town and country. He expressed his preference for Dr. ADDISON'S plan to leave the fixing of the income-limit to the Local Health Committees, and to accumulate the medical benefits of persons with superior incomes as a fund which in the first resort would be liable to meet fees due by them for medical attendance. Sir PHILIP MAGNUS'S amendment was negatived without a division. An amendment by the Chancellor of the Exchequer to secure freedom of choice of medical men to insured persons was accepted. Dr. ADDISON'S proposal was then carried by 279 votes to 41. An amendment submitted by Mr. CECIL HARMSWORTH to safeguard the existing medical institutes of Friendly Societies was also added to the subsection. A proposal made by Mr. GLYN JONES to have a free choice of chemists and druggists was also accepted. It will be seen therefore, that the clause has been profoundly altered and extended.

A comparison of the text of the first subsection of Clause 14 in its unamended form with the text of the subsection after it emerged from the discussion in committee will reveal the extent of the changes made.

The subsection as unamended ran: "Every approved society and Local Health Committee shall for the purpose of administering medical benefit make arrangements with duly qualified medical practitioners for insured persons to receive attendance and treatment to the satisfaction of the Insurance Commissioners from such practitioners."

The subsection in the form which it now takes after the incorporation of the various amendments is as follows:—

Every Local Health Committee shall for the purpose of administering medical benefit make arrangements with duly qualified medical practitioners in accordance with regulations made by the Insurance Commissioners.

The regulations made by the Insurance Commissioners shall provide for the arrangements made being subject to the approval of the Insurance Commissioners and being such as to secure that insured persons shall, save as hereinafter provided, receive adequate medical attendance and treatment from the medical practitioners with whom arrangements are so made, and shall require the adoption by every Local Health Committee of such system as will secure:—

(a) The preparation and publication of lists of medical practitioners who have agreed to attend and treat insured persons whose medical benefit is administered by the committee within the area to which the list relates;

(b) A right on the part of any duly qualified medical practitioner who is desirous of being included in any such list as aforesaid of being so included, but where the Insurance Commissioners, after such inquiry as may be prescribed, are satisfied that his inclusion or continuance in the list would be prejudicial to the efficiency of the medical service of the insured they may remove his name from the list;

(c) A right on the part of any insured person of selecting at such period as may be prescribed from the appropriate list the practitioner by whom he wishes to be attended and treated, and, subject to the consent of the practitioner so selected, of being attended and treated by him;

(d) The distribution amongst and, so far as practicable, under arrangements made by, the several practitioners whose names are on the lists of the insured persons who after due notice have failed to make any selection, or who have been refused by the practitioner whom they have selected;

Provided that if the Insurance Commissioners are satisfied after inquiry that the practitioners included in any list are not such as to secure an adequate medical service in any area, they may dispense with the necessity of the adoption of such system as aforesaid as respects that area, and authorise the committee to make such other arrangements as the Commissioners may approve. (Mr. LLOYD GEORGE'S amendment.) The regulations made by the Insurance Commissioners shall authorise the Local Health Committee by which medical benefit is administered to require any persons whose income exceeds a limit to be fixed by them, and to allow any other persons, in lieu of receiving medical benefit under such arrangements as aforesaid, to make their own arrangements for receiving medical attendance and treatment (including medicines and appliances), and in such case the Committee shall, subject to the regulations, contribute from the funds out of which medical benefit is payable towards the cost of medical attendance and treatment (including medicines and appliances) for such persons sums not exceeding in the aggregate the amounts which the Committee would otherwise have expended in providing medical benefit for them. (Dr. ADDISON'S amendment.) The regulations may provide that, in the case of persons who are receiving medical attendance and treatment under any system or through any organisation existing at the time of the passing of this Act approved by the Local Health Committee and the Insurance Commissioners, such medical attendance and treatment may be treated as, or as part of, their medical benefit under this part of this Act, and may provide for the Committee contributing towards the expenses thereof the whole or any part of the sums which would be contributed in the case of persons who have made their own arrangements as aforesaid. (Mr. HARMSWORTH'S amendment.)

University of Wales (No. 2) Bill.

The University of Wales (No. 2) Bill has received a second reading in the House of Commons.

Poisons and Pharmacy (Ireland) Bill.

Captain CRAIG has introduced in the House of Commons a Bill "to make certain alterations with reference to the carrying on of the business of pharmaceutical chemists and chemists and druggists in Ireland.' It was read a first time.

HOUSE OF COMMONS.

WEDNESDAY, JULY 26TH.

Milk and Tuberculosis.

Mr. C. BATHURST asked the President of the Local Government Board upon what day he proposed to introduce the Milk and Dairies Bill; and whether any of the provisions of such Bill had been modified in consequence of the recently issued final report of the Royal Commission on Human and Animal Tuberculosis.—Mr. BURNS replied: Due notice will be given of the introduction of the Bill. I am considering what modifications in the Bill may be necessary by reason of the report of the Royal Commission.

Mr. BATHURST: May I ask whether, in view of the uncertainty and alarm both amongst the farming community and the consuming public, the right honourable gentleman will take steps to accelerate the introduction of his Bill?—Mr. BURNS: I do not agree as to the proportion of alarm suggested. It is mainly to consider the matters, which I see are mentioned in the next question of the honourable gentleman, that I have not introduced the Bill up to the present moment.

Mr. BATHURST further asked whether the right honourable gentleman was conversant with the experiments which had been recently conducted on human beings in Germany in order to test the extent of the risk resulting from the human consumption of milk obtained from cows infected with tuberculosis of the udder, and with the report published last year by the Imperial Health Office of Germany based upon such experiments; whether, in the light of that report, he was advised by the medical experts of his department that the drinking of, as distinct from the inoculation with, cows' milk containing tubercle bacilli was calculated seriously to endanger human health even in the case of children; and whether, in view of the absence of deleterious effects resulting from most of the feeding experiments conducted by the Royal Commission on Human and Animal Tuberculosis, he would, in order to allay undue alarm upon this subject, cause further scientific investigations to be made before taking drastic measures in respect of the national milk-supply on a possibly false hypothesis.—Mr. BURNS answered: The experiments referred to were merely observations on the medical history of 360 persons (151 children) who were stated to have consumed tuberculous milk. My advisers agree with the finding of the Royal Commission on Tuberculosis to the effect that "measures for securing the prevention of ingestion of living bovine tubercle bacilli with milk would greatly reduce the number of cases of abdominal and cervical gland tuberculosis in children," and there is nothing in the facts contained in the German report referred to in the question which is incompatible with this conclusion. It would be superfluous, in view of the many years' work of the Royal Commission, to cause further scientific investigation to be made on the points which they have definitely settled.

Mr. BATHURST: Is it not universally admitted amongst the medical profession that this disease is due more to a predisposition caused through insufficiency of milk than to the presence of bovine germs in the milk itself?—Mr. BURNS: I am aware that that view is held by some members of the profession who are entitled to respect, but there are others equally entitled to respect who hold the very opposite view.

THURSDAY, JULY 27TH.

Plague in India.

Mr. MORRELL asked the Under Secretary of State for India whether his attention had been called to the statement that in the first week of July there were 1848 deaths from plague in India; whether this rate of mortality was unusually high for the time of year; and whether the Government was taking exceptional measures for dealing with the outbreak.—Mr. MONTAGU replied: Having regard to the fact that plague, unhappily, has been very prevalent this year, the mortality reported for the first week in July cannot be regarded as exceptionally high from a seasonal point of view. It marks a great decrease on the June figures and is much below the mortality in the corresponding week of 1907, a year in which plague was similarly prevalent. As I informed the House yesterday, the local governments are fully alive to the responsibilities resting upon them in the matter and are endeavouring to arrest the disease by the use of all means within their power.

Experiments on Living Animals.

Mr. G. GREENWOOD asked the Secretary of State for the Home Department whether he was aware that the total number of experiments on living animals, as set forth in the return for the year 1910, had increased from 86,277 in 1909 to 95,731 in 1910, showing an increase of 9454; how many inspectors there now were under the Cruelty to Animals Act, 1876; and whether he could say how many of these 95,731 experiments were actually seen by such inspectors.—Mr. CHURCHILL replied: Yes, sir, but to prevent misapprehension it may be well to point out that of the increase of 9454, 8403 were experiments of the nature of simple inoculations, hypodermic injections, and similar proceedings. There are two inspectors under the Act; 129 experiments were actually seen by them, and a very large number of animals under observation after experiment were examined.

Mr. GREENWOOD further asked the right honourable gentleman whether the statement that the irregularities mentioned in the Return of Experiments on Living Animals during the year 1910 were the only irregularities that had occurred during that year was based on unchecked information supplied by licensed vivisectors themselves; or whether any, and if so what, means were taken to check such information and to detect and report any irregularities which might not be reported voluntarily by the persons guilty of them.—Mr. CHURCHILL answered: The statement that only two irregularities occurred in 1910 was intended to mean that those were the only ones which are known

to have occurred. The statement is founded not only on the returns and other information which licensees are required to furnish, but also on numerous inspections, on examination of laboratory books by the inspectors, and on information given to them by the heads of laboratories and others.

Mr. GREENWOOD: Is it the case, then, that these irregularities were discovered by inspection of 129 experiments out of a total of 95,000?—Mr. CHURCHILL: Inspections of this kind are by sample.

National Insurance Topics.

Lord CHARLES BERESFORD asked the Chancellor of the Exchequer whether it was intended under the National Insurance Bill to allow Friendly Societies to open dispensaries, and whether all dispensing would be done by qualified pharmacists.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) said in reply: It is desirable to secure the best system for the supply of medicines. Consequently no one method of supply should be expressly excluded. All dispensing will be done by qualified persons.

Sir WALTER MENZIES asked the right honourable gentleman whether he proposed to make any provision in the National Insurance Bill, or the regulations to be made thereunder, which would enable insured persons who conscientiously objected to ordinary or orthodox medical treatment to obtain such other form of medical treatment as they might desire.—Mr. HOBHOUSE wrote in reply: Under the amendments put on the paper by my right honourable friend any person will be able to obtain medical treatment from any duly qualified medical man, however unorthodox his methods.

MONDAY, JULY 31ST.

The Nutritive Value of Flour.

Mr. C. BATHURST asked the President of the Local Government Board when his department proposed to publish the long-promised report upon the nutritive value of flour, as at present manufactured, and other foods.—Mr. BURNS said in reply: The report is now in an advanced stage of preparation and I hope it may be issued very shortly.

Death-rate of Nyasaland Natives in the Transvaal.

Mr. FELL asked the Secretary of State for the Colonies whether his attention had been called to the death-rate among the natives employed in the Transvaal mines in place of the repatriated Chinese and to the death-rate among such of the natives as had been recruited from British Nyassaland, Nyassa, and Zambesia; and whether he proposed to take any steps to prevent such recruiting from colonies under the Colonial Office.—Mr. L. HARCOURT answered: The mortality rate amongst the Nyassaland natives in the Transvaal is causing me great concern, and I am in active communication with the Union Government, who hope, however, to see a material improvement in the course of a few months owing to the restriction of tropical natives to mines where proper change houses exist. Further measures may be required, but if they fail the stoppage of emigration may be necessary.

Friendly Societies and Medical Practitioners.

Lord CHARLES BERESFORD asked the Chancellor of the Exchequer, with reference to Clause 14 of the National Insurance Bill, whether Friendly Societies were to have control of the medical practitioners.—Mr. LLOYD GEORGE replied: The answer is in the negative.

TUESDAY, AUGUST 1ST.

Tuberculosis and Butter.

Captain FABER asked the President of the Local Government Board whether the bacilli of tubercle had been found in butter.—Mr. BURNS replied: Tubercle bacilli are occasionally to be found in butter, when they had been present in the milk from which the butter was made. The risk to health from such butter may be regarded as relatively slight.

A Claim to Cure Consumption.

Mr. C. BATHURST asked the President of the Local Government Board whether Dr. Kaye, the medical officer of the West Riding County Council, had, at his request, investigated the claim made by Mr. A. Bryant, of Thornton, Bradford, that he had cured and was curing consumption in an advanced stage of the disease by means of gases which were given out by the maggots infesting putrifying meat; and, if so, with what result.—Mr. BURNS said in reply: I have not made any such request to Dr. Kaye.

"Botanic System of Medicine" and National Insurance.

Mr. JAMES PARKER asked the Chancellor of the Exchequer whether a person who was practising "the botanic system of medicine" would be entitled to render medical aid under the National Insurance Bill.—Mr. ILLINGWORTH (on behalf of Mr. LLOYD GEORGE), in reply, said: Such a person would not be a duly qualified medical practitioner unless he has passed the examination required by the Medical Acts and been registered under those Acts.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.

La Pratique des Maladies des Enfants, Diagnostic et Thérapeutique. Publié en Fascicules. VII. Chirurgie des Enfants: Appareils Digestif, Cardiaque et Pulmonaire, Organes Génito-Urinaires, Organes des Sens. Par A. Broca, Frœlich, A. Mouchet, Guisez et F. Terrien. Price, paper, Fr.14; boards, Fr.15.50.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

The Problem of Pulmonary Tuberculosis considered from the Standpoint of Disposition. By William Bulloch, M.D., and Major Greenwood, jun. (Reprinted from the "Proceedings of the Royal Society of Medicine," May, 1911.) Price not stated.

The Dental Directory, 1911. Price 2s. 6d. net.

CHURCHILL, J. AND A., London.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. H. G. Turney and Mr. W. H. Battle. Price 8s. 6d. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Emergencies of General Practice By Percy Sargent, M.B., B.C. Cantab., F.R.C.S., and Alfred E. Russell, M.D., B.S. Lond., F.R.C.P. Second edition. Price 15s. net.

KING, P. S., AND SON, Orchard House, Westminster, London.

British Rural Life and Labour. By Francis George Heath, Author of "The English Peasantry," "The 'Romance' of Peasant Life," &c. Price 10s. 6d. net.

Public Health and National Insurance. By H. Meredith Richards, M.D., Medical Officer of Health and School Medical Officer, Croydon. Price 6d. net.

KÜHTMANN, GERHARD, VERLAG VON, Dresden.

Die Staatliche Lymphanstalt und die Gewinnung tierischer Schutzpockenlymphe in Dresden. Für die Internationale Hygiene-Ausstellung Dresden, 1911, im Auftrage des Königlichen Ministeriums des Innern verfasst von Dr. Th. Chalybäus, Vorstand der Lymphanstalt. Price M.3.

LEWIS, H. K., 136, Gower-street, London.

The New Sydenham Society. Retrospective Memoranda. By Sir Jonathan Hutchinson, F.R.S. Subject Index and Index of Names. Compiled by Charles R. Hewitt, Librarian to the Royal Society of Medicine. Price not stated.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Life and Letters of Sir John Hall, M.D., K.C.B., F.R.C.S. By S. M. Mitra, Author of "Indian Problems," "Hindupore," &c. With an Introduction by Rear-Admiral Sir R. Maesie Blomfield, K.C.M.G. Price 16s. net.

MALOINE, A., Paris.

Sémiologie Réelle des Sections totales des Nerfs mixtes périphériques. Considérations concernant l'Étude des Troubles des Sensibilités, les Modifications des Réactions Vaso-motrices et Sudorales, les Altérations trophiques ostéo-articulaires et cutanées. Par Henri Claude, Professeur Agrégé, Médecin de l'Hôpital Saint-Antoine, et Stephen Chauvet, Interne des Hôpitaux de Paris. Price Fr.4.

MURRAY, JOHN, London.

National Health Insurance. The Parliamentary Bill Examined and Compared with the German Scheme. By Ernest J. Schuster, LL.D. (Reprinted from the "Journal of Comparative Legislation.") Price 6d. net.

NATIONAL UNION OF CONSERVATIVE AND CONSTITUTIONAL ASSOCIATIONS AND UNIONIST SOCIAL INSURANCE COMMITTEE, St. Stephen's House, Westminster, London, S.W.

The National Insurance Bill Summarised. By L. Worthington Evans, M.P. Price 1d.

NORTH, JOHN, "Dairy World" Office, 98, Fetter-lane, London, E.C.

Milk Testing. A Simple Practical Handbook for Dairy Farmers, Estate Agents, Creamery Managers, Milk Distributors, and Consumers. By C. W. Walker-Tisdale, F.C.S., N.D.D., Member of the Board of Directors and General Manager of the Wensleydale Pure Milk Society, Limited, Northallerton. Revised edition. Price 1s. net, by post 1s. 2d.

OLIVER AND BOYD, Tweeddale-court, Edinburgh, and 33, Paternoster-row, London, E.C.

Pleurisy, including Empyema and Bronchiectatic Conditions. By Alex. James, M.D., F.R.C.P.E., Consulting Physician to the Edinburgh Royal Infirmary and to the Edinburgh City Hospital. Price 6s. 6d. net.

ROUTLEDGE, GEORGE, AND SONS, LIMITED, London. (DUTTON, E. P., AND CO., New York.)

Talks about Ourselves. Simple Teaching in Hygiene and Physiology. By Kathleen Falmouth (Viscountess Falmouth). With a Frontispiece by T. C. Gotch. Price 1s. 6d. net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

What to Eat and Why. By G. Carroll Smith, M.D., Boston, Mass. Price, cloth, 12s. net.

The Care of the Baby. A Manual for Mothers and Nurses. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Fifth edition, thoroughly revised. Price 6s. 6d. net.

TEMPEST, W., Dundalgan Press, Dublin and Dundalk.

The Irish Motor Directory and Motor Annual, 1911-12. A Reference Hand-book for Motorists. (Entered at Stationers' Hall.) Edited by Henry G. Tempest. Price 2s. 6d., post free 2s. 9d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CHAPMAN, HAROLD, L.D.S., has been appointed Dental Surgeon to the London Hospital.

CREAN, F. S., M.B., M.R.C.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

FARMER, F. M., L.D.S., has been appointed Dental Surgeon to the London Hospital.

MESSER, A. W., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Newburn District of the county of Northumberland.

MOORE, R. M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Malmesbury District of the county of Wilts.

NORTHCROFT, GEORGE, L.D.S., has been appointed Dental Surgeon to the London Hospital.

POLLITT, G. PATON, L.D.S., has been appointed Dental Surgeon to the London Hospital.

SPRAWSON, EVELYN, M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed Dental Surgeon to the London Hospital.

STEADMAN, F. ST. J., D.P.H., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed Dental Surgeon to Queen Mary's Hospital for Children, Carshalton, Surrey.

TOWERS, LYDIA KNIGHT, M.B., B.S. Edin., has been appointed School Medical Officer to the Shropshire Education Committee.

VILVANDRÉ, GEORGE, M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WALLACE, J. SIM, M.D. Glasg., L.D.S., has been appointed Dental Surgeon to the London Hospital.

WILLIAMS, J. P., M.D. Lond., has been appointed Medical Officer of the Interior, British North Borneo.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, attendance, &c.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, both unmarried. Salary in each case £90 per annum, with board, lodging, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHELTENHAM EYE, EAR, AND THROAT FREE HOSPITAL.—House Surgeon. Salary £200 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for six or four months. Salary at rate of £50 per annum, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Senior House Surgeon. Also Junior House Surgeon. Salaries £120 and £80 per annum respectively, with rooms, board, washing, and attendance.

CROSSLEY SANATORIUM, Delamere Forest, Cheshire.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

DUMFRIES, CRICHTON ROYAL INSTITUTION.—Pathologist and Clinical Pathologist. Salary £250 per annum, with quarters, board, and laundry.

GLASGOW PARISH COUNCIL DISTRICT HOSPITALS.—Two Junior Resident Assistant Medical Officers. Salary £100 per annum, with board and lodging.

GLASGOW WESTERN INFIRMARY NEW CLINICAL LABORATORY.—Lecturer on Clinical Methods. Salary £400 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

LEICESTER EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

LIVERPOOL, TOWNSHIP OF TOXTETH PARK WORKHOUSE AND INFIRMARY.—Assistant Resident Medical Officer (female), unmarried. Salary £100 per annum, with board, washing, and apartments.

LONDON HOSPITAL DENTAL SCHOOL.—Two Demonstrators, House Surgeon, and Instructor in Dental Mechanics.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Locum Tenens, unmarried, for six to eight weeks. Salary 4 guineas per week, with apartments, board, &c.

MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for six months. Salary at rate of £100 per annum, with board and residence.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL.—Honorary Surgeon.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician. Salary £50 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROBBEN ISLAND, LEPER WARDS, Cape of Good Hope.—Junior Medical Officer. Salary £250 per annum, with free quarters and two rations.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £125 per annum.

ST. MARY'S INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer. Salary at rate of £100 per annum, with board and residence.

ST. PANCRAS INFIRMARY (SOUTH) AND WORKHOUSE.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer. Salary at rate of £135 per annum.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, attendance, and rations.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £60 each per annum, with board, lodging, and washing.

SHREWSBURY, SALOP AND WENLOCK ASYLUM.—Junior Male Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing. Also Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, laundry, &c.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer, unmarried. Salary £150 per annum and all found.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Matlock, in the county of Derby; at Killaloe, in the county of Clare; and at Charlbury, in the county of Oxford.

Births, Marriages, and Deaths.

BIRTHS.

MUDIE.—On July 26th, at The Buttlands, Wells, the wife of Walter Mudie, Dental Surgeon, L.D.S. R.C.S. Eng., of Stuart House, Ely, and of Wells, Norfolk, of a son.

MARRIAGES.

DALY—JAMES.—On July 29th, at the Parish Church, Paignton, Ashley Skeffington Daly, M.R.C.S., L.R.C.P., to Hilda Maude, daughter of Mr. and Mrs. Arthur James, of Roundham Head, Paignton.

LEES—BOULTON.—On July 26th, at the Parish Church, Cirencester, Alfred Everard Lees, M.B. Lond., to Ethel Maude Essington Boulton, younger daughter of F. T. Essington Boulton, of Ingleside, Cirencester.

PRYCE MORRIS—CRUMP.—On July 26th, at St. Cynfean's Church, Llysfaen, N. Wales, Mr. T. H. Pryce Morris, M.R.C.S., of Newcastle, Staffs, to Kathleen, eldest daughter of the Rev. Prebendary and Mrs. Crump, of Voryn Isa, Old Colwyn, N. Wales, and Hartshill Close, Stoke-on-Trent.

TANNER—CLARKE.—On July 27th, at All Souls Church, Langham-place, W., by the Rev. Alfred Tanner, uncle of the bridegroom, assisted by the Rev. Thomas Turner, John Rupert Waldron Tanner to Iris Litton, daughter of Ernest Clarke, F.R.C.S., of Chandos-street, Cavendish-square, W.

DEATHS.

BROWN.—On July 25th, at St. Levan, Lavender-gardens, S.W., John Brown, L.R.C.P. I., L.R.C.S.I., Knight of Grace of the Order of St. John of Jerusalem, in his 73rd year.

OUSTON.—On August 1st, at 1, Saville-place, Newcastle-upon-Tyne, from pneumonia, Thomas George Ouston, F.R.C.S., aged 42.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

GIBRALTAR.

Sir F. Evans, K.C.M.G., C.V.O., Colonial Secretary of Gibraltar, reporting on the Blue book for 1910, gives the present estimated population as 23,310, that being, of course, the total of both civil and military elements. We have already, and recently, reviewed Major Fowler's excellent report on the sanitary administration of Gibraltar (see THE LANCET, July 8th, p. 117). Although the death-rate was 18·0 per 1000, as compared with 15·09 in 1909, the general sanitary condition was satisfactory throughout the year. The rainfall was 24·01 in., or about 9 in. below the average (33·33 in.) of the last 115 years, whereas in 1909 it was 55·00 in., or 22 above the average. The greatest rainfall in 24 hours in 1910 was 4·53 in. on Dec. 4th. The total number of patients treated in the Colonial Hospital was 673, including 43 remaining in the hospital at the end of 1909. The daily average number under treatment was 45 and the number remaining at the end of the year 1910 was 63. There were 34 deaths. The surgical operations numbered 179, with 7 deaths. The out-patients totalled 10,615. There were 15 patients in the small-pox branch of the hospital and 4 died. In the course of his general observations Sir F. Evans remarks: "Better means of communication with the adjoining country are required. There is an excellent steamboat service between Gibraltar and Algeciras across the bay, but to get to the country beyond the town of La Linea, which is separated from Gibraltar by less than a mile of fairly good road, running across the neutral ground, there is only the sea-shore available. What is much wanted is a well-kept carriage road to join La Linea up with the village of Campamento. If this were provided—and I have reason to believe that surveys are being made with a view to the construction of a road—it would assuredly lead to the opening up of the neighbouring country, and prove of considerable advantage to the residents of Gibraltar, while indirectly adding to the prosperity of the town." The country round the bay of Gibraltar is beautiful, the climate is excellent, and there is no reason to doubt that if proper means of communication were provided many villa residences would soon be built, many persons regarding the situation as rivalling that of any town in the Riviera, both as regards climate and surroundings. The number of persons who pay brief visits to Gibraltar has largely increased of late years. Many stay only a few hours, but others make the place their headquarters from which to visit Spain and Morocco.

A WARNING.

To the Editor of THE LANCET.

SIR,—I should like to warn the profession in London against a man who took some silver articles from my waiting-room a few days ago. He is about 30, well dressed, and speaks with a foreign accent. He presented a card with a foreign name, was clean shaven, and wore "fairy" pince-nez, and carried a book and a parcel, but seems to have called elsewhere the same day under a different name, carrying nothing and (?) wearing a moustache, but no glasses. He showed knowledge not given by the doorplate, and named a friend, who does not know him. Two people here could identify him. The telephone number is 1773 Mayfair, and I should be glad to trace him.

I am, Sir, yours faithfully,

FRANCES EDE.

13, Upper Berkeley-street, Portman-square, W., July 31st, 1911.

MEDICAL CERTIFICATES FOR COUNCIL WORKMEN.

THE Westminster City Council has for some time past had under consideration in committee the question of making a new Standing Order as to the certification of illness of workmen. The Highways Committee recently forwarded to the General Purposes Committee a suggested Standing Order providing, *inter alia*, that in any case in which the committee might deem it expedient sick pay should be subject to the production, at the cost of the council, of a certificate from a medical practitioner appointed by the council that the workman or servant was unable to perform his duties. After perusing the return of workmen's absences during the month of April, 1911, and discussing the matter of the medical certificates received since the operation of the new Standing Order, the Highways Committee recommended that in the case of any man absent from work by reason of illness the assistant city engineer should be authorised to obtain a report from Dr. Norton should he deem it desirable, and the committee suggested that Standing Order LXXXI. should be thus amended. The proposal made by the Highways Committee is one which, if adopted, should in the opinion of the General Purposes Committee, be made applicable to all departments of the council, but before recommending its permanent adoption the committee thought it should be tried temporarily, and the council, on that committee's recommendation, has agreed that the suggestion should be tried as an experiment in the Highways Department until Dec. 31st next, the assistant city engineer to submit at the end of that period a statement giving particulars of the cases dealt with and a report on the result.

THE BATHS OF PÖSTYÉN.

WE have received a brochure which gives an interesting account of this Hungarian health resort and of the methods of treatment adopted there. Pöstyén, the Hungarian name, or Pistyan the German name, is situated in Upper Hungary, 468 feet above the sea, and is picturesquely surrounded by the sloping hills of the lesser Carpathians. It can be reached from Budapest in 3¼ hours, from Vienna in 3 hours, and from Berlin in 13 hours. The natural therapeutic agents are a strong sulphur thermal spring, and a warm mud richly impregnated with sulphur. There are also the numerous appliances providing for radiant light and electric treatment. The mud is decidedly radio-active, a property which it retains even when transported abroad for curative purposes. The cases which benefit at Pöstyén comprise rheumatic affections, sciatica, lumbago, gout, and skin diseases. Samples of both the mud and water may be obtained at the London agency, The Pöstyén Thermal Supply Company, 47, Gerrard-street, London, W. The accommodation at Pöstyén is ample, and special efforts are made to secure the comfort of the visitors, while social attractions are not forgotten. The country around is interesting.

CENTRIFUGES FOR BACTERIOLOGICAL RESEARCH AND GENERAL USE.

AS is well known, bacteriological research is receiving very considerable assistance from the remarkable improvements which of late years have been made in the apparatus employed for the purpose. This is evident from a very complete list of apparatus, which Messrs. Chas. Hearson and Co., Limited, of 235, Regent-street, London, W., have recently issued. Besides Hearson's well-known incubators, and especially the latest ("the anhydric electric incubator"), in which an absolutely constant temperature is maintained by electric current, for the cultivation of micro-organisms, researches in embryology, histology, and so forth, there are now a series of cleverly designed centrifuges which run at speeds up to 25,000 revolutions per minute and yet which are durable and "quiet working." The list is well worth studying not only in regard to the refinements of bacteriological temperatures and methods of separation, but also in regard to other apparatus (chiefly for incubation purposes), the efficiency of which is based on a similar attention paid to exact demands.

THE PINE-YPTA DISINFECTOR.

THIS is a simple device for ensuring the distribution at regular intervals of a certain amount of disinfectant fluid in the flushing cistern. It acts automatically with each flush, the principle of the disinfector being simply that of a syphon. It consists of a neat glazed earthenware pot containing a greasy paste of, amongst other things, pine oil and eucalyptus. There is a lid which screws tight to a rubber band. The lid is hollow and hump-shaped. There is a perforation at the top of the "hump" and a similar perforation below. The "hump" acts as the syphon. As the cistern fills water enters the lower hole of the disinfector filling the hollow "hump." At rest a certain amount of disinfectant is dissolved. When the cistern is emptied it is obvious that as the water-line lowers to the level of the lower hole of the disinfector the contents are discharged into the cistern. The apparatus, which can be obtained from the Pine-Ypta Automatic Disinfector Company, Limited, 22, Tib-street, Market-street, Manchester, works well and automatically after it has once been placed in the right position. Its action suffuses a very agreeable smell, which is acceptable in its way, but between deodorisation and sterilisation there is a gap.

INTERNATIONAL CONGRESS ON TUBERCULOSIS, ROME.

WE are informed by Mr. J. J. Perkins, the honorary secretary of the National Association for the Prevention of Consumption, 20, Hanover square, London, that the Rome authorities have decided to postpone this Congress, which was to have been held in Rome from Sept. 24th to 30th, 1911, until April, 1912. Further particulars will be published. Previous references to this Congress appeared in THE LANCET of March 11th (p. 708) and March 18th (p. 755), 1911.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
" 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
" 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).

May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
" 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
" 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
" 3rd–5th (London).—British Dental Association, Annual Meeting.
" 12th–18th (Brussels).—First International Congress on Child Study.
" 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
" 15th–21st (Dublin).—Royal Institute of Public Health.
" 21st–23rd (Larvik).—Fourteenth Norwegian Physicians Congress.
" 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
" 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
" 30th–Sept. 6th (Portsmouth).—British Association.
" 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
" 5th–7th (Philadelphia).—American Electro-therapeutic Association.
" 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
" 11th–13th (Vienna).—German Urological Society.
" 11th–15th (Berlin).—Third International Conference on Infantile Mortality (*Goultes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
" 25th–29th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
" 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
" 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
" 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
September (Genoa).—International Exhibition of Marine Hygiene.
" (Turin).—Congress of the Association of Italian Railway Physicians.
" (London).—Bakers' and Confectioners' Exhibition.
" (Manchester).—Second Conference of the British Hospitals Association.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
" 2nd–5th (Turin).—International Congress of Pathology.
" 2nd–6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
" 2nd–7th (Dresden).—Third International Housing Congress.
" 2nd–7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
" 3rd–6th (London).—Dairy Show.
" 5th–8th (Turin).—Fourth National Congress of Hygiene.
" 9th–12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
" 9th–13th (Cologne).—Seventh International Congress of Criminal Anthropology.
" 22nd and 23rd (Lyons).—Twelfth French Congress of Medicine.
" 25th–27th (New York City).—Annual Conference of Sanitary Officers of the State of New York.
October (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
" (Paris).—First Congress of the International Medical Association for the Prevention of War.
November (London).—Motor Exhibition.
" (Manchester).—Smoke Abatement Exhibition.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
December (Moscow).—Third Pan-Russian Therapeutical Congress.

In 1912:—
Jan. 29th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
April (Rome).—Seventh International Congress on Tuberculosis.
" (Rome).—Seventh International Congress of Dermatology and Syphilology.
Spring (London).—Second Optical Convention.
May 31st–June 2nd (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
May (London).—International Horticultural Exhibition.
July (Liverpool).—British Medical Association, Eightieth Annual Meeting.
Sept. 23rd–28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
September (Prague).—International Congress of Radiology and Medical Electrology.
(Budapest).—Tuberculosis Exhibition.
(Stockholm).—Olympic Games.

In 1913:—
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Chicago).—Congress of the International Association of Refrigeration.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Malaria.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Morton: Radio-therapeutics and the Use of Solid Carbon Dioxide.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Tottenham

(Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 12 noon by Steward's Instruments.)

THE LANCET Office, August 2nd, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 27	29·96	S.W.	...	133	85	61	69	72	Fine
,, 28	29·99	S.E.	...	127	91	68	68	75	Fine
,, 29	29·96	E.	0·69	131	89	68	68	71	Cloudy
,, 30	29·94	S.W.	0·07	119	76	65	67	70	Cloudy
,, 31	30·00	S.E.	...	129	82	64	65	71	Cloudy
Aug. 1	29·98	S.W.	...	130	84	66	64	73	Cloudy
,, 2	30·17	S.W.	...	123	75	61	61	65	Fine

The following journals, magazines, &c., have been received:—Indian Medical Gazette, Local Government Review, Australian Medical Gazette, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, The Therapeutic Gazette, United States Naval Medical Bulletin, Journal of Nervous and Mental Disease, Archives de Parasitologie, Archives of Pediatrics, Medico-Surgical Journal of the Tropics, Revue de Gynécologie, South African Medical Record, St. Thomas's Hospital Gazette, Annali di Medicina Navale e Coloniale, Bio-Chemical Journal, Archives Internationales de Neurologie, Charing Cross Hospital Gazette, Journal of Anatomy and Physiology, Recueil d'Ophtalmologie, Australian Medical Journal, British Journal of Dental Science, Transvaal Medical Journal, Archives of Internal Medicine, Journal of the Royal Sanitary Institute.

Communications, Letters, &c., have been received from—

A.—Anglo-American Pharmaceutical Co., Lond.; A. W. T., Broadstairs; Association of Medical Men receiving Resident Patients, Lond., Hon. Secretary of; Mr. G. R. Anderson, Southport; Messrs. Arnold and Sons, Lond.

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A Lecture
ON
PSYCHONEUROSES.

Delivered at the Medical Graduates' College and Polyclinic on June 12th, 1911.

BY E. D. MACNAMARA, M.D. CANTAB, F.R.C.P. LOND.,
PHYSICIAN TO THE WEST END HOSPITAL FOR NERVOUS DISEASES.

GENTLEMEN,—It is only within a comparatively short term of years that the large class of maladies with which I propose very briefly to deal has engaged the serious attention of the profession. That attention has been attracted not only by the patient labours of many neurologists and psychiatrists, but has been more roughly roused from without by the exploitation of mental therapy by so-called "faith-healers" of many denominations. It is perfectly true that from the remotest dawn of history there is abundant evidence of the existence of diseases which were not susceptible of cure by drugs or other physical agents, but which were cured by some procedure directed towards making an impression upon the mind of the patient. It is further true that except during recent decades such diseases have for the most part been rather contemptuously ignored by the profession, with the not unnatural result that a large field of activity has almost voluntarily been abandoned to the charlatans. But never before has there been the same amount of organised activity on the part of that large body of persons who regard themselves as either innately qualified or divinely inspired to treat disease. Nor are such activities confined to the practice of the unscrupulous upon the ignorant and unwary, but, on the contrary, are widespread among highly educated persons who on a basis of mysticism erect large structures compact of what they call religion and philosophy. It must fall within the experience of many of us to lose our patients to the exponents of such systems, and it is perhaps not too much to say that the remedy lies largely in our own hands.

To affirm of certain groups of symptoms that they are "imaginary" or that they are "merely nervous," and that therefore they must be ignored, or that they can, on the other hand, be cured by a bottle of this or by a course of that or even by surgical intervention, is, from an academic point of view, to put aside the investigation of a large series of most important problems, and from a practical point of view to drive our patients into the arms of those who dogmatise the more vehemently as their ignorance is the more profound, but who at least empirically know that the procedures in which they believe themselves to be adept are at times capable of effecting cures. I believe I am right when I say that there are but few, if any, sects of those who may generically be called faith-healers whose members deny the services of a surgeon in the case of, let us say, a compound fracture of a leg. But a larger number are prepared to deny the services of a physician when the morbid processes are concealed by the superficial structures, and all are prepared to affirm that the services of a surgeon and physician are alike useless and are even nocuous when the symptoms are of a so-called nervous character. The much-abused adjective "nervous" covers many large categories of disease, and in this special connotation generally means the exhibition of the milder mental abnormalities. Such affections are, however, not the only manifestations of psychic disorder, and, in fact, there is no system of the body which may not show symptoms that are directly dependent upon an improper performance of psychic functions. It is from this enormous group that is, for the most part, drawn the class of patients who are benefited by the methods of the faith-healer, whether he be a follower of current cults or an exponent of "higher thought," "newer thought," or "Christian Science." Some study of these phenomena and of the methods which may be used in their treatment will convince one of the profundity of the problems involved, and at the same time of the importance of proper treatment. Merely to enumerate some of the affections will suffice to indicate the wide range covered.

SIGNIFICATION OF TERM "PSYCHONEUROSIS."

It is not altogether easy to define the term "psychoneurosis." A neurosis is an affection of the nervous system in which the anatomical lesion is unknown, and similarly a psychosis is an affection of mentality in which the anatomical lesion is unknown, but such definitions, though convenient, are inaccurate and can only be regarded as conventional and provisional, for to distinguish between an affection of mentality and an affection of the nervous system is often plainly beyond our power, since we can demarcate no boundary where we can say that here mentality ends and here the functions of the nervous system begin. As an example of a disease which we may place in the category of the psychoses I may mention maniacal-depressive insanity, and as an example of a disease which we may place in the category of the neuroses, I may mention those neuralgias which are not accompanied by any structural nervous change. Both the psychoses and the neuroses tend with the advance of pathological knowledge to lose members of their categories to the category of organic disease, but the former nevertheless remain up to the present as a formidably large group. The psychoneuroses are not, as their title might lead one to expect, affections combining the symptomatology of the psychoses with that of the neuroses, but, in fact, form a sub-group of the psychoses in which the clinical phenomena are non-mental, but in which those phenomena have been produced by incidents in the mental life of the patient. The patient, perhaps, does not complain of his "nerves" at all, nor does he always suspect that his nervous system is at fault, but rather he complains of some other system—for example, the gastro-intestinal or circulatory. On the other hand, the patient may ascribe his symptoms to his nervous system, but energetically repudiate the idea that his mind is affected. The outstanding characteristics of these affections are that the symptoms are brought into existence and persist in the absence of any structural alteration in the organ or organs apparently at fault, and that the symptoms date from a period of short or long duration, during which adverse psychic conditions were experienced. To put it quite briefly, the troubles, no matter where they are situated, are of psychic origin. It should be very distinctly understood that these symptoms are neither imaginary nor invented. Symptoms can, no doubt, be invented, and not infrequently are, but persons presenting invented symptoms pass into the categories of malingering or mythomania. Similarly, symptoms can be imagined and not infrequently are, but persons presenting imaginary symptoms pass into the category of hypochondriasis or a form of delusional insanity. In the psychoneuroses symptoms which are neither invented nor imaginary are present, and can often only be distinguished from symptoms of organic origin by taking the etiological factors into account—that is, by a consideration of the psychic stresses to which the patient has been subjected.

SYMPTOMS CONNECTED WITH THE RESPIRATORY SYSTEM.

In the case of the respiratory system we not uncommonly meet with symptoms which appear to be dependent upon psychic causes. For instance, in the case of the larynx, a man, part of whose profession in life lies in the exercise of his vocal cords, may complain of aphonia, partial or complete, arising in the course of his duties. On examination no abnormal physical signs can be found, and the aphonia only occurs at irregular intervals, commences suddenly, and passes away rapidly. If the history of the patient be minutely examined it will in all probability transpire that the affection dates from an attack of what was no doubt laryngitis, and it will probably also become apparent that at the time of the laryngitis the patient was worried by having to give up his work and is still haunted by the fear that he may have to give it up again. A correct diagnosis having been made, it is likely enough that the patient will be dismissed with a prescription and the assurance that he need not be alarmed as to the future of the affection. Frequently such treatment suffices, but not uncommonly the attacks of aphonia persistently recur, the patient seeks further advice, is again and again disappointed with the result of treatment, and finally, impressed by the glamour of some advertisement or moved by the solicitations of friends believing in some particular nostrum, gives himself to the charlatan or the faith-healer and by him is perhaps relieved

of further trouble. A case such as this illustrates the method of origin of a large number of the psychoneuroses. There has been some slight and unimportant organic affection: this was accompanied by worry due to the inability of the patient to carry on his work, and, though of itself of small moment, apprehension of a recurrence has remained and shows itself at times in specimens of what would happen if, in fact, the affection were to return. In the case of a patient whose malady is of the larynx or of the respiratory passages in general, the association of troubles of these regions with the idea of cold being very common, it is quite likely that fussy precautions against the supposed effects of cold will be much in evidence. Among such persons we find those who shelter themselves from cold to such a degree that life becomes one round of searching for and avoiding possible draughts or of varying the number of layers of their clothing with the level of the thermometer; or those who, to the detriment of their digestions, suck cough lozenges all day and all night, or who, to the annoyance of bystanders, alternately clear their throats and blow their noses throughout their waking hours. Some varieties of asthma also appear to be of psychic origin—that is, that the first attack occurred at the time of, or shortly after, an unusual emotional state, and that subsequent attacks have occurred during, or shortly after, subsequent emotional states.

GASTRO-INTESTINAL CASES.

The effect of states of mind upon the functions of the gastro-intestinal tract is well recognised, and knowledge of these effects has in recent years been elevated, chiefly by the work of Pauloff, to a scientific level. Many accustomed to slight degrees of dyspepsia after their ordinary domestic meals are astounded at the digestive capacity of their stomachs after the copious intake of some enjoyable public dinner, while others of habitually good digestive capacity find their dinners spoiled and their digestions temporarily deranged by the honour of having to deliver a post-prandial oration. Among the neurasthenic digestive troubles are so frequent and so marked that etiological theories have been erected ascribing the neurasthenia to the dyspepsia rather than the dyspepsia to the neurasthenia. It is not at all uncommon to hear that certain articles of diet make certain persons sick, and it is difficult, so digestible are some of these articles, to account for the apparent irritability of the stomach. For instance, a patient was for years nauseated by honey, or, perhaps, it would be more correct to say felt nauseated when he saw honey on the table. This dated from some occasion in very early childhood when the patient was sick and spat up a streak of blood after a meal at which he had had honey. The patient was under the impression that he had some special idiosyncrasy which prevented him from digesting honey. After the probable genesis of the idea had been explained to the patient and the improbability of honey disagreeing with so healthy a stomach as his had been insisted upon, he was no longer troubled, and now takes honey from time to time as opportunity affords without the slightest feeling of nausea. Another patient was, in the middle of a dinner party, taken with nausea and had, to his embarrassment, to leave the table. There was no obvious cause for the feeling, but subsequently for some years, although the patient's powers of digestion were good, he was unable to dine out at a mixed dinner party, for to do so invariably eventuated in a feeling of sickness coming on at the table. A third patient, a girl, complained of abnormal sensations chiefly of a "sinking character" occurring from time to time in the epigastrium and which she put down to indigestion. It seemed difficult to ascribe the phenomena to the stomach, but some little time was spent in endeavouring to treat the disorder as though it were of gastric origin. At length, psycho-analysis being employed, the fact was revealed that the time of the first onset of the sensations was coincident with a disappointment in love. The possible origin of the sensations, quite unsuspected either by the girl or by her medical attendant, was explained to the patient and the symptoms rapidly disappeared. These cases of very homely uncomplicated symptoms serve to illustrate psychoneurotic processes affecting the stomach in which the cause seemed plain.

But many cases are by no means so simple, while the symptoms may be of great gravity. Indeed, the clinical picture is often such that it is hard not to believe that serious organic disease is present. Pain in all the forms in which it occurs in dyspepsia of other origin may be complained of, and may be distending or burning, thoracic or abdominal, coming on immediately after food or being delayed for some hours. Stasis and dilatation may actually occur and be in part dependent upon atonicity of the gastric muscles, a condition presumed in these muscles as part of the general atonicity inferred in its turn from the atonic condition of muscles more readily observed. Parenthetically, it may be noted that the atonia of the muscles is seldom if ever of the degree of such atonia as we meet with in tabes dorsalis, and, indeed, is often assumed rather from the statements of the patient than observed from the condition of his muscles. Stasis may also be due to alteration of the character of the gastric juice, and we have every reason to suppose that the latter varies considerably with mental states. The gusto with which a healthy and happy individual sets himself to his meals promotes the proper amount of flow of the proper sort of juice. On the other hand, we find the individual who has been the subject of some depressing emotion firstly losing appetite, then exhibiting those dyspeptic symptoms which follow upon alteration—qualitative or quantitative, or both—of the gastric juice, and later still showing signs of malnutrition consequent upon insufficient feeding. Consider the not infrequent circumstances in which dyspepsia is brought about in the case of the individual who lives by himself. There is nothing probably in his daily work to promote appetite, for it is likely enough carried on mechanically in depressing surroundings and in a foul atmosphere. To each meal such a person sits himself without appetite. His solitary repasts are not lively entertainments, and he regards them as functions to be as rapidly hurried over as possible. He discourages rather than encourages any desire for food that may be present and gradually reduces the time he takes over his meals. Under these conditions an absence of proper psychic stimulus vitiates the secretions, dyspepsia occurs, and the patient further reduces the quantity of food he takes to avoid the discomfort or pain which follows upon taking it. A vicious circle is now entered upon and the patient may eventually present all the symptoms of serious organic disease.

CARDIO-VASCULAR SYMPTOMS.

The heart is even more generally recognised to be affected by psychic states than is the stomach, and since the dawn of history has been regarded as bound up with the emotions and even as their corporeal site. Tachycardia is an almost invariable accompaniment of the more powerful emotions, though the most powerful of all are, at least in some persons, accompanied by bradycardia. With the tachycardia may be associated palpitation, and there are cases in which rapidity of the heart's action and the abnormal sensations of its presence suggest to the patient that he is the subject of heart disease. It is, of course, unlikely that a single attack of such symptoms occurring at the time of some emotional disturbance would create the idea of cardiac disease, but if the symptoms recur whenever the attention of the patient is called to the cause of the original emotion it is not unlikely that the idea will arise. Here may be mentioned the exceedingly common vascular phenomenon of blushing. Commonly associated at certain ages, and for the most part in the female sex with certain emotions, it may last on beyond the usual age limits, and in so doing is liable to become a serious source of annoyance and may even make of the patient an embittered recluse. Not infrequently the origin of the habit is found to lie in an association between blushing and lying or masturbation, suggested in the first instance to the patient by a school fellow or by a quack advertisement.

DIAGNOSIS.

It would be very easy to multiply instances of the occasionally unfortunate effect of the mind upon the body, for there is not one of the systems of the latter which is exempt from such effects. I have given examples of cases in which the respiratory, the alimentary, and the cardio-vascular systems have been affected, but the urino-genital and the nervous system are by no means less frequently perturbed. The nervous system I have purposely disregarded, since many of its abnormal manifestations are commonly recognisable as of nervous or psychic origin, whereas the connexion between a chronic dyspepsia and a preceding psychic event is much less obvious, and my wish has been to emphasise the fact that many abnormal somatic phenomena,

affecting systems other than the nervous, have a psychic source. The correct diagnosis of the psychoneuroses is naturally of the first importance, for to mistake functional disease for organic disease or *vice versâ* is entirely to vitiate therapeutics. It is therefore necessary carefully to examine the patient in order that the abnormal physical signs of organic disease may be excluded altogether, or that it may be determined that the functional symptoms complained of by the patient are out of proportion to the extent of the organic basis upon which they are founded, for it should always be borne in mind that upon organic disease of small moment in itself may be erected a formidable functional superstructure. To some trifling deformity, let us suppose a deflected nasal septum, a patient's entire attention may become devoted. Repeated medical consultations and the reading of medical books serve to further fix the attention of the patient upon the local condition and spur him to hunt for and to discover symptoms of which hitherto he has been unconscious, while constant treatment so much occupies the patient's time that he has but little leisure for anything else. It is manifest that in such a case though the organic basis of the affection cannot be denied, yet that the psychic influences are such that a comparatively trumpery matter has been exalted to a level at which it dominates life to the exclusion of both business and pleasure. So also it may be that the symptoms complained of may be traced to the existence of some organic disease which has long since passed away, but in which the character of the symptoms became so impressed upon the patient's mind that they continue to have an existence not now based upon structural alteration but upon an established psychic habit.

The examination of the nervous system having been completed and the presence of organic disease having been excluded, so far as such exclusion is possible, the mental life of the patient should be inquired into, and it will be found in a large number of cases that the symptoms commenced at the time of or shortly after the occurrence of a period of emotional stress. Without any history of organic disease it will appear that the abnormal phenomena were first noted during a time of personal, domestic, or business worry, or, with a history of organic disease, that that disease was accompanied by circumstances of a harassing character. Over and over again we find that among women the history commences with the nursing of a near relative during an illness, and among men that the symptoms commenced at a time when the patient's prospects in life and the position of his family were put in jeopardy by loss of employment, or threatened loss of employment, from illness or some other cause. At times it happens that the most careful inquiry fails to elicit anything of a psychic nature which can be regarded as a possible cause of the illness, and it is in these cases that the more subtle methods of psycho-analysis may be put in practice.

PSYCHO-ANALYSIS.

Psycho-analysis is the modern term applied to the systematic exploration of a mental field. In part it consists in the methods ordinarily used when we desire to know the content of a person's mind—that is, observation of his conduct in various circumstances, questioning and cross-questioning, and in most cases, if we can rely on the *bona fides* of the person examined, such methods are sufficient. There are, however, cases in which, though the patient believes that he has wholly and with candour unbosomed himself, yet the all-important circumstances of the past have been submerged in his mind by the current of later events and have passed out of the present field of his consciousness, but though submerged in this way the impress of these circumstances has not ceased to act upon the current above, and occasionally obtrudes itself in the shape of phenomena of which the patient complains.

We are very much accustomed nowadays to hear of, and to read of, the "subconscious," and it would appear that the less we know what we mean by the term the more we are apt to talk about it—at any rate, it provides a *locus standi* on which charlatans of all kinds purport to freely move and where, no doubt, they find their living. That which we may premise about such a mental level, whether we choose to give it such a name and to relate it to the conscious or not, is that it appears to be the region of the automatic psychic reflexes. Just as the limbs become educated to perform certain movements, so does consciousness as to the detail of the movements fade away, and it is similarly the case where psychic performances are concerned. We commit a piece of poetry to memory, and while so doing we have at first more or less difficulty in repeating the words correctly, but later on with no effort at all the words come to our lips when the idea which they represent or with which they have associations is roused. At times we are astonished that the words should arise in us at all, for so long have we been unconscious of them, while in other cases the words are only heard when he who utters them is delirious or in some other abnormal state. But not only is it the case that things committed with effort to the memory may subsequently arise in consciousness without effort, but it is further true that past events which there has been no effort to remember, and perhaps, indeed, about which there has been an effort to forget, may crop up either as recollections which are recognised as such or as phenomena which are not connected in any obvious way with the occurrences of long ago. A woman, for example, in early adult life is subjected to the stress of a love affair accompanied by circumstances which her education has taught her to regard as discreditable, and in which social convention demands that she should hide the expression of her emotions. The stress over, she endeavours deliberately to erase the writing on that page of her memory which recorded it, and to a large extent she succeeds, but, nevertheless, the suppressed emotion, having missed the usual channels by which it ordinarily becomes declared, ferments, to use a very crude metaphor, and sooner or later shows itself in the phenomena we associate with psychasthenia, neurasthenia, and hysteria. It is in the endeavour to trace the connexion between the symptoms of these and kindred affections and some preceding event in the patient's life that the subtler methods of psycho-analysis, such as the study of time-reactions, the examination of the trend of the patient's conversation when he is permitting it to run its course without voluntarily controlling it, examination under hypnosis and a critical analysis of dreams, have been developed under the stimulating influence of Freud and his fellow workers.

But the pursuit of the mental trail is not merely of academic interest, for it is hoped, when the lair of the suppressed emotion is at length reached, when the causal connexion between it and the symptoms has been traced, when an explanation of the connexion has been made, and when possibly an expression of the emotion has been given vent to by the patient, that relief may be afforded. The method is not unlike the time-honoured one of the confession of sin, while self-examination is assisted by eliciting that from the patient which has long since passed from his consciousness. I am not here advancing a personal opinion that it is always desirable to dig where much has been discreetly buried, but it remains nevertheless true that there are cases in which a resurrection of the past is the only method whereby we can hope for relief of present symptoms.

OTHER PSYCHO-THERAPEUTICAL MEASURES.

Fortunately, for psycho-analytic processes often take up much time and require an infinity of patience, many patients can be relieved of the sorts of symptoms of which I have been trying to give a short description by simpler methods. From the earliest times the personal influence of the physician has been recognised as being of great importance, and it is hardly too much to say that that influence is of as much value as are most of the physical agents in his armamentarium. Most ailments in an average man's or woman's life are of the minor order which tend to get well without therapeutic assistance, and in such cases progress to recovery is often accelerated rather by the physician's attitude to his patient than by material therapy directed against the morbific agent. Even in the more serious illnesses, which come sooner or later, the physician may produce an effect upon the course of the disease by encouraging the patient, or, if his prognosis has to be a bad one, by endeavouring to inculcate the virtues of patience and resignation. All of us know that if a patient has pluck he has a better chance than if he caves in at once, and it is our duty to elicit or develop in the patient that frame of mind which will put him in heart to endure his ills. If this be so even in the case of those affections in which the cause is micro-organismal or otherwise organic, so much the more may we expect similar beneficial results when the cause is either wholly or in part psychic.

We are accustomed nowadays to the term "suggestion."

Some use it as a euphemism for hypnosis, since the latter is still held by some to have a sinister connotation. But all that suggestion really means is the presentation of an idea or set of ideas to another for his acceptance. The presentation may be made in various ways and under various circumstances. It may be made, for example, under a deep degree of hypnosis when the patient is artificially though soundly asleep; or it may be made, after the patient has been elaborately prepared by the manœuvres usually practised in preparing the ligher degrees of hypnosis, when the patient is in a drowsy state though not soundly asleep; or it may be made as a direct appeal to the good sense of the patient; or, lastly, over a prolonged period of time by the laborious process of educating the patient out of a set of faulty ideas into a set that is healthy. In any case the first point is to gain the confidence of the patient, and the second, by one or other of the methods just mentioned, to neutralise the ideas which by previous examination we have reason to suppose are the cause of the symptoms.

Just as in the organic somatic affections patients demand from us explanations of their symptoms, are satisfied by explanations which are mostly merely tautological and express themselves as being the better for such paraphrases, so in the psychic affections of the class to which I have been referring interpretation of the symptoms affords relief and not uncommonly eventuates in a cure. At times psychotherapeutic methods alone suffice, but at others certain adjuvants are of importance. One of the most prominent features in the well-known Weir-Mitchell mode of treatment consists in the removal of the patient from his usual surroundings and in his separation from relations and friends. In this there are two objects in view—one that the patient may be as completely rested as possible, and the other that the influence of doctor and nurse may be paramount. The field is, in fact, cleared for psychotherapeutic influences. Other important adjuvants are complete rest and improvement of the general nutrition by feeding the patient up. It is very frequently the case that the patient, harassed by his symptoms, is run down and sleepless, and it is in such cases particularly that rest and feeding are required.

It is not possible for the medical man, restrained by his special education and by the knowledge of the limitations of his science and art, to affect, as does the charlatan, omniscience and to impose on his patients with a show of therapeutic omnipotence. In this respect non-scientific so-called healers must for ever have the start of him, but there is no reason to doubt that he may recover from them much that he has lost if he will recognise to the full the very large influence that the mind has upon the body, both to afflict it and to heal it.

THE PRESENT POSITION OF RADIUM EMANATION-THERAPY IN GERMANY.

BY DR. W. ENGELMANN.

SLOWLY but surely the interest in radium emanation-therapy is growing in Germany. Universities, academies, and larger hospitals are becoming more and more occupied with this new method of treatment, seeking to investigate scientifically its essential nature entirely apart from the Kur administrations, whose attention is naturally concentrated on the practice of this therapy by means of their radio-active waters. Emanation-therapy has undergone frequent changes, short though the period is since its introduction; various apparent objections have explained themselves, and, as the close of this article shows, a mean position has been arrived at, although the precise rules now laid down cannot dispense with an experimental foundation.

Upon the discovery that the greater number of natural mineral waters are radio-active—i.e., contain radium emanations, it followed that their remedial effect must in part, at least, be attributed to these constituents. The lively interest thereby awakened in all health resorts, however, was considerably lessened when it was ascertained that, although all these springs certainly contained such emanations, few possessed them in sufficient quantity to be of therapeutic value.

The discovery that emanation water could be artificially produced—i.e., that ordinary, inactive water could be made radio-active by contact with a radium preparation emitting rays—was a considerable advance in emanation-therapy. Emanation water can now be therapeutically and experimentally applied up to any desired strength. The first reliable clinical observations dealing with radium emanation-therapy and its introduction are due to Dr. Löwenthal of Brunswick. Observations made at springs possessing strong emanatory constituents are of service in proper considerations as to the size of the dose and the quantity serviceable or injurious to the body. Communications from various sources include the observations made on a large scale at Kreuznach and already published. In all places the indications summarised at the close were almost identical, and they still practically remain so.

It has been ascertained that not only are the Kreuznach springs radio-active to a high degree, but that the solid constituents also contain radium—that is to say, that the well "sinter," a sediment that precipitates itself in the brine tanks,[1] is impregnated. It exists here in such quantities that it is worth while to undertake its concentration in order to obtain highly valuable radium combinations.[2] It thus becomes quite clear why a hundred years ago the Bad physicians preferred this sinter for bandages and therapeutical purposes. They extolled its extraordinary power of furthering resorption, in many cases surpassing that of mother-lye—an interesting empirical practice forestalling the proof of science. Apparatus, erected on a large scale, is used for the preparation of emanation water, which is added to the brine (already very strongly radio-active) in the bath pans. Exceedingly valuable radium salt obtained from sinter is used for all kinds of medical preparations, such as salves, compresses, and injections.

Emanation being recognised as an effective agent in the form of a modified gas and possessing the qualities of gases, it was at first maintained that the principal effects obtainable through the bath and drink cures were derived from the gas constantly escaping from the water and conveyed to the body by inhalation—i.e., through the lungs. A step further led to the conclusion that the baths, as such, were superfluous, and that it was more practical to extract the emanation and inhale it in gaseous form. Indeed, some physicians practising emanation-therapy actually made use of the inhalation method in the first instance. Last January Professor His of Berlin reported to the Berlin Medical Association that he had obtained numerous favourable successes with emanation by placing the patients in an "Emanatorium," i.e., in a small compartment containing air laden with the emanation, where they remained for several hours. Theoretically this appeared quite comprehensible, but it needed confirmation. Admittedly, emanations are very quickly eliminated by respiration; it was hoped that by placing the patients in emanation rooms this elimination would be prevented, and that in a short time equalisation between emanation air absorbed by the blood and the laden atmosphere would take place. It is, however, very doubtful whether the solution of the problem is so easy. In addition to being a simple, indifferent gas, emanation has other properties, including the dispensing of induced activity—i.e., the emanation is precipitated on all solids with which it comes into contact, such as bodily tissue, liquids, and cells. Nevertheless, the results of inhalation were good and indisputable, and the question now under discussion is whether all other methods of application, such as bath and drink cures, are to be abandoned in favour of the inhalation cure.

In reference to emanation bath treatment Löwenthal made the statement that emanation could not penetrate through the skin into the organism. In contradiction of this I was able last year, at the Medical Clinic at Bonn University, to prove that emanation can be taken up very well by the body, through the skin, although it can be traced only in small quantities. The baths, therefore, again received their due, since experimental proof of the justification of their application was forthcoming. On the other hand, the effect of the rays issuing from the emanation and its decomposition on the skin, nerves and their terminations, and blood-vessels, ought

[1] To obtain salt and mother-lye brine is passed seven times over the graduators, then collected in tanks in graduator-houses, and afterwards subjected to operations for obtaining salt. The residue, a yellowish-brown fluid, is the celebrated Kreuznach mother-lye, used for strengthening brine baths.

[2] A radium factory has existed in Kreuznach since 1908, being the only place in Germany where radium salt is obtained on a large scale from its own wells.

not to be undervalued. Evidence in support of this was obtained by allowing emanation to operate on various parts of the body in the form of compresses and wrappings. This explains the great success often observed on the application of the emanation. Only recently Professor Strassburger of Bonn recorded in the *Münchener Medizinische Wochenschrift* the great success he has obtained, and strongly recommended the application of baths and poultices.

It has been proved beyond doubt from clinical observations in successful cases that cures or considerable improvement, often beginning with a typical reaction, have been observed after drinking radium emanation water. The objection that a part of the emanation enters the lungs and blood by breathing—i.e., that even here inhalation is the effective method—lacks probability at the outset. I have been able to prove, in the case of a dog that had a fistula in the duodenum, that the entire emanation, which was administered in the form of emanation water through a pharyngeal catheter, entered the bowel without any essential loss—i.e., in the same degree of concentration. Also very little emanation was traceable in the fæces. The whole quantity of emanation was therefore absorbed in the bowels and transferred to the tissues. It is traceable indeed in the respiratory air in such cases, and that at a considerable length of time after having been drunk, and even after having been injected into the bowels, during which time it must circulate in the blood. A depôt has been established, so to speak, in the bowels, whence the emanation enters the blood and a pharmacological effect is obtained. The presence of emanation in the blood of those who have drunk emanation water has been successfully demonstrated.

In conclusion, the following experiments which I recently made in the Berlin Pathological Institute ought to be convincing, and to persuade even the sceptical of the extraordinary influence that emanation exercises on the juices of the tissues when taken per os. I injected uric acid crystals into the subcutaneous tissue of rabbits, producing deposits similar to the tophi of those suffering from gout. I administered emanation water through a pharyngeal catheter and a very rapid reabsorption of those deposits took place under the influence of the emanation. Control animals treated with inactive water did not show this rapid result. I studied the effect after 1, 2, 3, and up to 14 days in paraffin sections of the swollen deposits. The differences were very obvious. The changes, by-the-bye, were of a similar nature to those found in similar trials at Professor His's clinic. The animals here, however, were in emanatoriums, and the effect of a lengthy stay in the emanatoriums was the same as with my animals after taking every day only one dose of emanation water.

There can therefore be no doubt about the effectiveness of the method in which the emanation water is drunk, and as its application is simpler, cheaper, and more convenient it may, in many instances, be preferable. On the other hand it is not to be disputed that where there exists a possibility of using emanatoriums good results will be obtained. In order to avoid the disadvantages connected with the cost, owing to expensive installation and the apparatus being a fixture and thus preventing many from benefiting from the therapy, I have, in conjunction with Professor Bickel of Berlin and Director Neumann of Kreuznach, constructed a simple inhaler possessing the advantages of being cheap and portable; it is capable of being used by those who are bed-ridden, whilst the therapeutic dose is very exact. If one possesses a Kreuznacher Neumann'schen activator which produces an emanation water of sufficient strength, one can by means of it administer the bath, and supply drink and inhalation cures.

There can be no doubt, according to present views in regard to emanation-therapy, that a combination of all three methods may be desirable in the case of an emanation cure. We allow the patient to take his emanation water two or three times daily, then he takes a lengthy emanation bath, and finally he strengthens the effect by remaining in an emanatorium or by the use of an inhaler. This energetic treatment is applied to patients suffering from general assimilatory diseases, especially in cases of gout. When local disorders are in question poultices are preferred, as recommended by Strassburger, whereby an extraordinarily intensive effect may be obtained upon a given spot by emanation.

The indications for emanation-therapy have been strengthened by ample experience. The conditions for which the treatment is indicated include gout, chronic rheumatism, sciatica, neuralgia, neuritis, as well as exudates and growths which need energetic means to promote absorption. It is proved by the study of the biological methods of operation that radium emanation especially exerts a very great influence on ferments, such as pancreas-ferment, pepsin sour-milk fermentation, autolytic ferment, and diastatic ferment. Recently, together with Dr. Wohlgemuth of Berlin, I have succeeded in demonstrating a distinct influence on glycolytic (sugar-destroying) ferment. How far this may be applicable to the group of diseases in connexion with disturbances of sugar secretion we do not attempt to decide, but in any case this result is an interesting addition to the biological effects of this mysterious agent.

Bad Kreuznach.

INSTITUTIONAL HYDROPATHIC TREATMENT AS COMPARED WITH SPA TREATMENT FOR CERTAIN TYPES OF INVALIDS.[1]

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AROUND the word "hydropathic" there has always existed a certain amount of opprobrium, from its very initiation, more particularly in the eyes of the profession. At the very beginning of hydropathic treatment in this country so much was claimed for "the cold water cure," which had been made famous by the publication of Captain Claridge's book on Grafenberg, that a certain section of the public became so affected with the craze as to carry the whole matter to extremes. This is often the case with new methods of treatment, not only with the public, but, one regrets to say, with the medical profession. The result was that the entire system was laughed at throughout the country and was caricatured in *Punch* and the other illustrated journals of the day. We have seen much the same happen in the more recent "sour milk craze."

Some large establishments were erected, however, in various parts of the country, such as the Ben Rhydding Hydropathic, where Dr. R. McLeod flourished and made a fortune. Dr. W. C. Gully, the late Speaker's father, achieved some success at Malvern, while under the very eccentric direction of its lay founder—John Smedley—the institution still bearing his name commenced its career of almost uninterrupted prosperity. Another more modest establishment was Dr. Rayner's at St. Anne's Hill, near Cork. These establishments were all more or less seriously conducted as places for treatment. During the past 30 or 40 years, however, there has sprung up all over the country a certain class of establishment—really of the unlicensed hotel or boarding-house type—which has done nothing but perpetuate the prejudice against the word "hydro." While the rates for accommodation are distinctly lower than the average provincial hotel, the accommodation offered is not so good, and no claim is made to offer any real therapeutic facilities to visitors unless change of air and a Turkish bath be so considered.

The introduction of amusements of the frivolous sort in and out of season does little but irritate the seeker of health, whose inner man, moreover, is usually not satisfied but disappointed. There are, indeed, very few establishments in this country which in any way resemble the "kur-anstalten" of Germany—general sanatoriums not admitting consumptives such as Dettweiler's establishments, in which, though hydrotherapy is employed it is combined without reserve with all known and tried therapeutic measures; where, in short, the treatment is eclectic, and so long as the patients are cured, anything furthering that end from psychotherapy to quinine is employed.

[1] A paper read at the annual meeting of the Edinburgh Branch of the British Medical Association on June 24th, 1911.

That there is room, and, indeed, a demand, for establishments of this nature in Great Britain, there can be little doubt. Of course, the financial side has to be carefully considered, and we have probably not been sufficiently educated up to this class of treatment to ensure a *large* establishment for purely and simply health purposes being carried on at a profit. For business purposes guests other than invalids have to be admitted and catered for in an establishment of any pretensions, but provided the serious purpose of the institution is for treatment these people will but help to keep the atmosphere healthy and from being unduly oppressed with invalidism! Moreover, invalids often prefer to have some relative with them, so that a general sanatorium of this description can scarcely be run on the strict disciplinary lines of a consumptive cure place. At Smedley's the proportion of invalids under treatment varies from 50 to 70 per cent., the latter being quite high enough a proportion for the preservation of a cheerful atmosphere in an establishment where the patients are not segregated in wards but mix with one another freely.

There has been a great deal of outcry of late as to the excessive and unnecessary extent to which patients are sent abroad to Aix, to Vichy, or to Plombières, rather than to our own Bath, Harrogate, or Cheltenham. It is pleasant to know that to some extent our own watering-places are gaining a foothold, that municipal enterprise and good management, with adequate capital outlay, are leading to increasing prosperity. Some of them are now afforded an ample patronage, and in the season an embarrassing one. Nevertheless, one cannot help feeling that this patriotism and discrimination exercised in advising patients where to take "the cure" might go a step further. There is no question but that a large section of patients remain chronic invalids at home and do not regain their health at a spa simply because the whole circumstances and *ménage* of a spa are entirely unsuited to them. One is compelled to think that too often, when selecting a "cure" place for a patient, medical men do not take into account with sufficient care the respective physical and mental capacities or incapacities of the patients themselves. Of the mental incapacity I had recently a striking instance. An old gentleman came to me with a minor skin ailment of gouty origin, who had been advised to go to Harrogate by a consulting physician. His memory was absolutely non-existent, and even in the comparatively limited confines of the institution to which I am attached he was perpetually losing his way or his hat. Too often there seems rather a rule-of-thumb method of saying, "Harrogate for the gouty and over-eating folk, and Buxton or Bath for the rheumatic."

In deciding which place is likely to benefit any special patient it would seem wise to run over the various factors in "a cure" which do a patient good. Perhaps we would put first of all the change from the normal and usual environment of the patient, and the importance of this can scarcely be overestimated. This being, on all hands, recognised in the taking of an annual holiday, seems to need no amplification. It is invariably found by the laity, whether they invest in vibrators, in high-frequency outfits, or in electric-light baths, or if they take to drinking sulphur waters to satiety, that they do not—nor will they ever—derive the benefit from such combined treatment as they have possibly done previously from similar measures at a spa or hydropathic. For one reason the applications are made without the guidance of a trained physician or special attendants, and the patients get no better results than they would by dosing themselves with drugs—though possibly running the risk of less harm. But quite apart from this they are probably carrying on their usual avocations, and very likely perpetuating bad habits, dietetic or otherwise, which are the very first origin of the indisposition. Moreover, they have none of the distractions and amusements afforded by a watering-place, nor do they meet with the new and often interesting acquaintances, and so be in a position to while away the time and forget physical disabilities. For there can surely be no better anæsthetic or more wholesome restorative for the neurasthenic than exchanging ideas on a subject of really keen mutual interest with another man or woman. I submit that the benefit derived from a visit to a "cure place" or sanatorium is in a large measure due to the proper regulation of the patients' lives as directed by the physician in whose care they have placed themselves, and, one may add, to a willingness on their part to do some things and not to do others in a way which would be quite impossible or irksome to them when at home. Many people ordinarily intolerant of any sort of restraint are rather tickled by the novelty of the thing *for a time*, and there is a certain type of man who takes a pride in the severity of the restriction which is imposed upon him by the new doctor, which he considers to be but in keeping with the size of the fee charged for the advice!

A fashion has got about of late, more especially since radium has been in vogue, to attribute the benefit above referred to to physical rather than psychical influence—viz., to radio-activity in the waters. This, indeed, has the support of no less an authority than Dr. A. P. Luff. Personally I think such ideas should be accepted with the gravest scepticism as really resting on pure conjecture. Dr. Luff says: "If the efficacy of any mineral water depended solely on its watery constituent I do not for one moment think that the resort of sufferers to the various mineral water springs would have so successfully stood the test of centuries as it undoubtedly has. The fact is that in judging the effect of mineral waters we have been under the domination of the analytical chemist, and our deductions have been biassed and cramped. I am satisfied that analysis is unable to convince us of the state of the salts dissolved in the waters. Most of the natural mineral waters have been found distinctly radio-active, and the lower the mineralisation the greater the radio-activity. A natural mineral water at the moment of its discharge from the earth is radio-active, whereas ordinary drinking water is not possessed of this property in any appreciable degree. Hence the desirablity of drinking the water at its source, since in bottling and keeping its radio-activity may in great measure be lost. When we consider the influence of radio-active emanations on new growths and various morbid tissues, is it too remarkable to conceive a radio-active mineral water will exercise a potent effect on those morbid changes within the body which are connected with abnormal tissue metabolism?"

With all respect I must differ from these conclusions. Surely we have more ground for attributing the cures to psychical effects and change of habit than anything like radio-activity? All we know of radium is very imperfect. While more convenient than X rays its efficacy is in many ways no greater, and at the recent Brussels congress it has been much discredited as a therapeutic agent. Looking back on past fashions one does not feel too bold in saying that in a few years' time it will have found its niche in therapy, and possibly be considered to be too dangerous to the patient and operator to use to any extent. Its efficacy is based on the production of a marked local reaction on morbid tissues, especially in new growths. Is it not the wildest imagination to think that an atonic stomach, a passively congested liver, exhausted neurons, or granular kidneys can derive the smallest degree of benefit from this very radio-active power contained in a water? Is it not conceivable, indeed, that such conditions might be hurtfully influenced, and just as probably—if they are influenced at all?

With astonishment we read some months ago in the reports of a speech by the chairman of a mining company very sanguine remarks as to the high degree of radio-activity of the water running into a particular mine—that it was twice or more as radio-active as the Harrogate water: *ergo*, must be more valuable therapeutically. The suggestion was accordingly brought forward that the vicinity of the mine, where pitchblende was being sought and obtained, should be turned into a spa. I have not yet seen a prospectus of such a new concern, but it may still appear, and when such theories are brought forward can we wonder if the enterprising company promoter grasps the opportunity for personal gain?

I have a great respect for some spas, and feel certain that their reputation rests on something less nebulous than *radio-activity*. It rests on the fact that alkalis neutralise acids—a very old bit of chemistry; on the efficacy of sulphur, well known to our grandparents as "a safe family remedy"; on the efficacy of heat, moist and dry, in relieving chronic and acute pain; on the admirable organisation of spas by the bath committee or manager of the various municipalities; and last, but not least, on the number of able scientific physicians who practise in the best-known watering-places in this country and abroad.

Whatever advantages there may be about a spa—and there are many—there can be no disguising the fact that there are

at least two very obvious drawbacks. The first is the risk of the patient catching cold while returning from the pump-room after a Vichy douche or some kind of hot bath. This especially applies to English spas in spring and winter time. At Vichy, as is well known, the greatest care is taken of patients in this respect, and they are carried back to their hotels or rooms well wrapped in blankets. However, in our climate it is different: the patient, from motives of economy, either walks back or goes in a draughty cab. Serious chills have been taken in this way, and when patients suggest coming for treatment by train and returning the same day I strongly advise them against it; for very often the good obtained is much overbalanced by catching a severe chill. Another tangible objection to going out for baths is the added fatigue where the patient is at the start run down and overtired.

All hydropathic treatment—packs, douches, and sweating baths, for some time at any rate, rather "take it out" of the patient, as it is expressed. Add to this the fatigue of changing clothes three or four times a day, including dressing for dinner at the hotel, and quite apart from any walking which the patient is ordered or may take, a heavy day's work is put in. It would seem very ill advised that the Harrogate municipality has passed a by-law prohibiting the use of any medicated bath in a hydropathic within the town boundary, and so compelling patients to go to the Royal Baths for their treatment, and interfering with any private enterprise. The policy seems a very shortsighted one, and the treatment of big ratepayers arbitrary in the extreme.

A walk before breakfast to the pump-room for their sulphur water, and a later visit for more water, for massage, or gymnastics, or liver packs can do nothing but good to an over-fed and over-drinking gourmand and the like. But the case is markedly different with other types of patients. One or two instances will make the point more clear.

In June, 1910, Dr. H. Garnett Wilson, Glasgow, asked me to see a patient with him in Glasgow with a view to her coming to Peebles for treatment if at all fit. She was a maiden lady of some 54 summers, in a very wretched condition, practically living in bed, who had spent her life as an invalid. She was thin to emaciation—white haired, haggard, and hysterical, with a rapid pulse of 90, often running up to 120 or more. She suffered from marked mucous colitis with severe constipation, and had dieted herself down to slops and toast, and very little of that. She had only been outside the house about three times in the preceding year. She was a difficulty to her medical adviser, as well as to her relatives, being querulous and morbid to a high degree. A long journey was out of the question, but about a fortnight after I saw her she came under treatment at Peebles. She arrived more dead than alive and looked so very ill that she was supposed to be dying by the maids. She was one of the most difficult patients I ever had to do with. Beginning treatment very carefully and gradually, increasing massage, with a more liberal diet, which she took at the sword's point practically, she was slowly brought back to a degree of health. In a three months' stay she gained 16 lb., the mucous colitis and the associated pain were subdued, and the patient's general condition was so vastly improved that before she left she was able to take an interest in amusements and to take short walks.

Now, to such a case, a change from the home environment is undoubtedly essential if good is to be obtained, and the discipline of an institution and immediate touch with the medical attendant are almost as essential. The fatigue of treatment, especially the Plombières douche, was very trying to her, and anything like going outside would have made it impossible. To such a patient I submit sanatorium or hydropathic institution treatment makes all the difference between going down the hill and regaining health, and a spa would be out of the question. In a well-conducted sanatorium the physician spends the day in and among the patients, more or less, and sees them in various ways, and hears a great deal about them from nurses and attendants, which throws valuable sidelights on each case, and gives him a knowledge which even a family medical attendant calling day by day might find it difficult to obtain.

Another patient of the same class was sent to me in June, 1909, by Dr. W. A. Stephen, Loftus-in-Cleveland, Yorkshire. Her age was 34 years. For some time she had been in a very anæmic condition and suffering from a certain amount of pyrexia. There was a morning and evening elevation of from half to one degree, but without any notable perspiration. The patient was apathetic to a marked degree and very shy and silent. It was difficult to get very much out of her, and she spent a great deal of time lying about in her room, being unable to take more than a little exercise. The anæmia was pretty intense, the reds counting about 1,800,000, and the hæmoglobin about 40 per cent. The chest was thoroughly overhauled by myself and by the physician of a sanatorium for consumption who happened to be staying with me at the time, and we both considered it clear of any mischief. On careful examination of the mouth I found that the patient had very bad teeth; indeed, they were carious and covered with tartar. The breath also was bad. I strongly urged the removal of the whole of her teeth, with a view to improving her digestion and the elimination of any degree of oral sepsis. This was accordingly done by a dentist, and from that day the patient steadily improved. The temperature ceased to rise both at night and in the morning, and the blood condition changed for the better. The patient was put on a liberal diet, kept in an open-air chalet, and given "Carnine Lefranc." At the end of August, on my advice, she went up to the Speyside district and returned home in September perfectly well, having gained over a stone in weight.

Other cases could be cited, but these two will serve to demonstrate my point. In both instances, only by keeping in very close touch with the patients was it possible to get them out of the "slough of despond" of misery and ill-health into which they had sunk. To patients so gravely ill I submit that a spa—and a spa in the season of all places—is in no way adapted, with residence in rooms or hotel. Hydrotherapy has its disadvantages even when administered under skilled direction. In cases of this nature one never knows how patients will stand any special treatment. This being so, in the first place, special treatment should not be given except with the medical man within call, so that a report can be made to him at once of any untoward effect. For instance, in the case just cited, as the patient improved she was put on to a rain bath and Scotch douches for the anæmia. The effect of the first one was to make her faint and to induce a condition of considerable collapse. I was sent for immediately and got her around, and in spite of the first unpleasant experience she persevered with a little coaxing, with the best results. But, as a rule, patients of this class do not flourish if simply prescribed for and handed over to the tender or other mercies of the bath attendants until they see their medical adviser again. They are, in short, cases for *institutional* treatment rather than for a visit to a spa.

There can be no question but that the poorer classes who become hospital patients have a great advantage in some ways over better-class paying patients. Chaffingly I said to a medical friend recently—a hospital physician—that nowadays the thing seems to be to *keep patients under observation*, rather than treat them in hospitals, more particularly teaching hospitals. Now, it is just this careful observation which is in many cases of the greatest value to the patient, especially the chronically ill person. The house physician and the senior and assistant physicians all examine the case, overhaul the patient, and an accurate diagnosis is made. Every system of the body is investigated, the blood-pressure repeatedly estimated, and blood counts are made.

Thus there would seem to be really a call for institutions of the above type for better-class people in this country—not nursing homes, but general sanatoriums where patients can be observed and investigated in like manner. Such establishments in no way constitute themselves a rival to the family medical adviser, to consultants, or to spa physicians. From the spas they should be differentiated as treating a different type of case. So far as the former are concerned, the physician to such an establishment should be simply a useful colleague, his duty being to treat the patients by methods which for one reason or another have not previously been available, to report progress from time to time to the home practitioner, and to shed any light which can be shed on obscure cases by close personal observation, to the end that the patient may regain his or her health, and that the much-tried medical attendant may be relieved of what often becomes an intolerable plague—an uncured chronically ailing nervous patient.

Peebles.

A CASE OF COMPLETE GASTRECTOMY.

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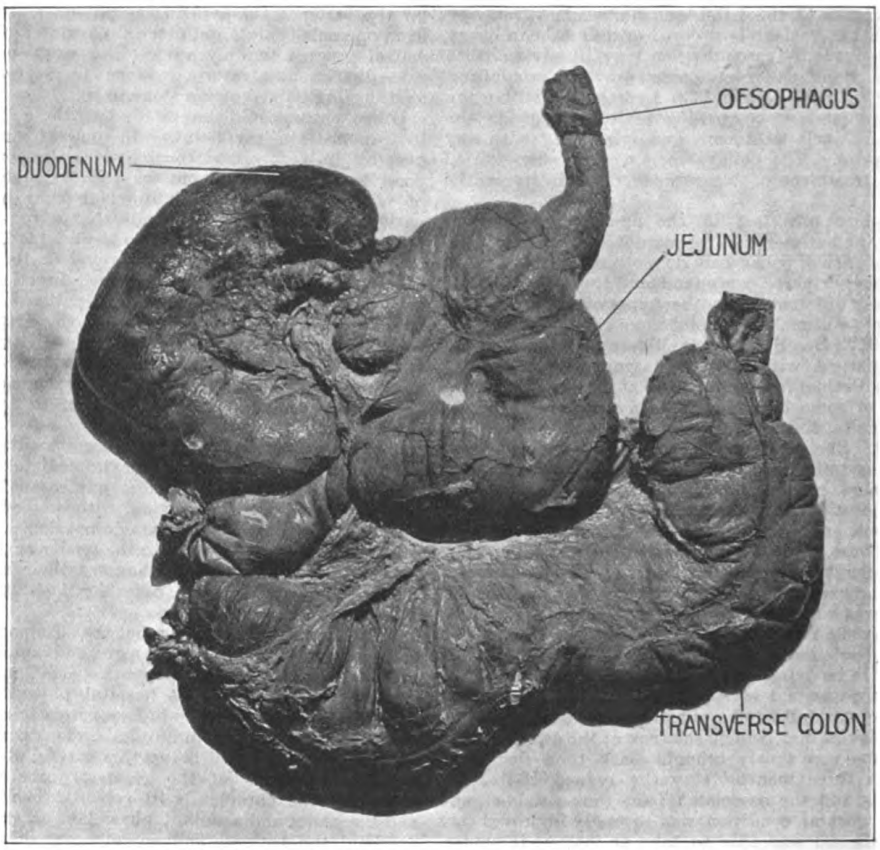
IN THE LANCET of Dec. 21st, 1907, I recorded "A Case of Complete Gastrectomy." The patient was a man, aged 43, who had suffered for two years from gradually increasing distress after food. At the operation a small, greatly thickened stomach was found, and as no healthy part of its wall could be discerned the whole organ was removed. The cut end of the œsophagus was stitched to the side of a loop of jejunum, brought upwards through an opening in the transverse mesocolon. The pathological report of Dr. F. Craven Moore stated that the stomach was involved in "a neoplastic change of a particular type which has its analogue in the so-called atrophic scirrhus met with in the mammary gland."

The patient made a good recovery from the operation. He was shown at a meeting of the Section of Surgery of the Royal Society of Medicine on Dec. 19th, 1907; and in July, 1910, he was seen and examined by the members of the American Society of Clinical Surgery who were then in Leeds. He died on Jan. 31st, 1911. During the three years and eight months that he lived after the operation he was under the constant observation and the occasional care of Dr. Geoffrey Thompson of Scarborough, who has kindly given me very full details of his progress.

The patient was perfectly well up to the early part of the year 1910, when he began to show the evidences of a profound anæmia. He was strikingly pale and breathless, and he lost weight. Under treatment, however, he improved, and in May, 1910, his colour had returned and he was able to ride and drive and attend to matters on the farm. In August, 1910, he began to fail again; he became easily tired, though he still tried to carry out the greater part of his work. His appetite remained good and he had no indigestion. In October the signs of anæmia reappeared, he grew much weaker, and had to cease work. He began again to lose weight, his appetite vanished, and he occasionally vomited. There were no abnormal physical signs of any kind in the chest or abdomen throughout the illness. Soon after Christmas, 1910, he had to take to his bed, and he died on the last day of January, 1911.

I saw the man myself on many occasions. He expressed himself as feeling well and vigorous, and he had gained 2 st. 10 lb. after the operation, and he held the gain for nearly three years. His appetite was good, he experienced the sensation of hunger, and he was able to eat the ordinary foods; but he had to take a rather longer time over a meal than in the days preceding his original illness.

The post-mortem examination for which Dr. Geoffrey Thompson had arranged was made on Feb. 1st, 1911, by Dr. M. J. Stewart, and his report is as follows: "The body is that of a somewhat emaciated man. All the tissues and organs exhibit an extreme degree of anæmia and the blood within the heart and great vessels is very watery in appearance. On opening the abdomen, the peritoneum is found to be free from disease, although there are some old fibrous adhesions between the first part of the jejunum and the operation cicatrix in the anterior abdominal wall, as also between the liver and the diaphragm. The cardiac end of the œsophagus is anastomosed to a loop of jejunum, which, for this purpose, has been brought through the transverse mesocolon. The proximal portion of jejunum and the duodenum, which ends in a cul-de-sac underneath the liver, appear to retain pretty much their normal dimensions, but at the seat of anastomosis and for a short distance beyond it, the jejunum appears to be slightly dilated. The whole intestinal tract, however, exhibits a marked degree of



Case of complete gastrectomy. Reproduction of photograph of specimen showing the condition found on post-mortem examination.

gaseous distension, and in the large intestine there are very numerous scybalous masses of considerable size. The liver is pale and somewhat fatty; the gall-bladder normal. The spleen contains a large and very old infarct, which occupies nearly the middle third of the organ. The kidneys are extremely pale and anæmic, while the capsules strip readily. The suprarenals are normal. There is no evidence of malignant disease in any part of the abdomen. A few of the retro-peritoneal glands are enlarged, but on microscopical examination they are found to be quite simple. The heart muscle is very pale and flabby. The valves are normal. The aorta and coronary arteries are quite healthy. There are numerous old adhesions on both sides of the chest. The lungs are extremely œdematous; they contain only a minimum of carbonaceous pigment. Microscopically the kidneys show well-marked though early fibrosis, involving both the interstitial tissue and the glomeruli. The chief points of interest are: (1) Complete absence of any recurrence or dissemination; (2) the very profound anæmia; and (3) absence of any striking jejunal dilatation at or near the site of anastomosis."

The photograph of the specimen brought to Leeds was taken in my laboratory. It shows well the anastomosis between the œsophagus and the jejunum, the slight dilatation of the jejunum, the blind rounded end of the duodenum, and the absence of any secondary growths.

Leeds.

AFTER-CARE.[1]

BY H. W. McCONNEL, M.A., M.B. CANTAB., M.R.C.S. ENG.,
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BY after-care I mean the looking after a patient and his surroundings after he has left a sanatorium or a dispensary. But it is of importance that the consideration of his future should be begun as soon as he commences treatment, and that the treatment itself should be modified accordingly. For it should be remembered that the object of the sanatorium treatment is not only to arrest a patient's disease and as much as possible to return him to work, but also to lead him, whether he knows it or not, to act as an educator of his own home circle and of all those with whom he comes into contact. He has not only to be cured, but he has also to spread abroad the principles of the open-air treatment by his example and future life. It must also be remembered that the social side of the circumstances of each individual patient is of great moment, and should be most carefully taken into consideration in the after-care.

After-care is of the utmost importance to the patient and to the nation. Indeed, it may be said that without it sanatorium treatment among the working classes loses much of its advantage for good, and is apt, moreover, to lead to a waste of public money.

There are two chief reasons why after-care is of such importance: (1) It allows the helpers—i.e., those that carry it out—to bring their influence to bear in the homes of the afflicted in a way that no other chance can; it gives them an entrance to these homes at a time when what they have to say and the lessons they have to teach will be fully considered; and (2) it supplements the sanatorium treatment, which is of necessity very incomplete.

Sanatorium treatment among the working classes is incomplete because it is almost always too short. The treatment is expensive and the length of time required for a permanent arrest is longer than the patient or his friends can afford; so in the majority of cases it is essential to supplement it by after-care if the good that has been gained is not to be lost again, and if the money that has been spent is not to be wasted.

Thus, having made out a case for after-care, I should like to consider very shortly what are the difficulties that are experienced by the patient himself or his friends both while he is at the sanatorium and also after he returns, and to mention at the same time how after-care can help to meet them, and then I should like to consider what is being done at present and what more can be done in the matter.

[1] A paper read before the National Society for the Prevention of Consumption and Other Forms of Tuberculosis on July 22nd, 1911.

The National Association for the Prevention of Consumption appointed a committee a few months ago to consider the subject of after-care and to make recommendations. This committee sent letters and questions to all the working-class sanatoriums—i.e., to 67, representing 4019 beds—and got more or less complete answers from all except one. It then sent similar letters and questions to a large number of Charity Organisation Society committees and kindred societies—to 228—and about half of these gave full answers and were therefore taken as typical; the information thus gained I have introduced into my subsequent remarks.

Now as regards the difficulties that can be dealt with by after-care, these fall under two heads: (1) those under the patient's control and (2) those not under his control. Those under his control are mainly (1) that he will not take advice and (2) that he is very slack in carrying out the lessons learnt. He will not take advice and delays in going to the sanatorium and thus turns an early case and one suitable for treatment into an unsuitable one from which a partial recovery at the best is all that can be hoped for. Again, after he has been at the sanatorium for a couple of months he begins to feel quite well, and he will not take the advice of those who recommend him to stay there for a longer time but insists on returning home and so loses his best chance of making the arrest of his disease permanent. Of course, I am not referring to the cases where want of money and home calls compel an early return, but rather to cases where these difficulties could be met, and where the chief obstacle lies in the cocksureness of the patient himself who imagines that because he feels well he is well. He is apt to give thanks and pity to the adviser; later he finds that he is wrong. In this difficulty an after-care committee can often control and influence where a casual remark has no effect.

Secondly, when he gets home, he is often slack in carrying out rules. When at the sanatorium, the patient learns the principles of treatment. He is taught how necessary open windows and fresh air are; how the food should be simple, well masticated and eaten slowly; how he should avoid rush and go early to bed; how he should rest before and after meals and should never sit down to meals when hot or tired; in a word, how he should make the best use of his off-time—i.e., of his out-of-work hours—in regaining and in keeping his health. He is taught all this at the sanatorium, and often when he gets home again he finds the windows shut and the house dusty, and instead of making an effort at once to bring about a change in the home, insisting on cleanliness and fresh air, he is apt to let things be. It is so easy to let things be and so difficult to alter old customs, but the disease has been arrested and the whole control of his home and his leisure hours lies with the patient. If he carries out what he has learned and what he has been taught he may keep well; if he lets everything slide he is qualifying for a relapse. If he is a bread-winner his whole family suffer through his fault and his gross slackness in the matter. Here, again, an after-care committee, by following the case up and by giving the patient advice at his own home, and by urging him to make use of the knowledge gained at the sanatorium, can do untold good, not only to the patient but also to those with whom he comes into contact.

The difficulties that are not under the patient's control are (1) incapacity and (2) the fear of infection.

1. The primary causes of incapacity are going to the sanatorium too late and staying there too short a time, and the result is incomplete arrest of the disease and liability to relapse; but our investigations show that it is probable that there is no greater difficulty in an ex-patient—i.e., in a patient from a sanatorium—getting employment than there is in the case of anyone else who is not fully capable from any other cause. Incapacity from phthisis is not more difficult to deal with than incapacity from any other reason.

2. Now a few words about infection, or fear of infection. It is necessary to mention the fear as well as the infection itself, for in the uneducated and unreasoning mind of the employer the fear has often more weight than the actual thing itself. The risk of infection, has, of course, been grossly exaggerated and is very slight indeed from a consumptive who is able to work, and from an ex-patient who has had sanatorium training it is almost *nil*, and is as nothing compared to that from a consumptive who has not had any hygienic teaching. It is founded on a misconception and a want of knowledge, and therefore must be combated by the after-care committee by every possible means.

It will be necessary to show the employers that to refuse work to an ex-patient because he has been to a sanatorium is not a very clever thing or a very reasonable thing. He is not dangerous, but, on the contrary, the fact that he went under treatment early and has got the disease arrested has removed all danger from him. If through fear of being turned out of his job he had worked on and on as long as he could till he broke down badly, then indeed there would have been danger to his companions. Once men know that their employers will take them back on their return from the sanatorium if they are capable, then directly they feel they are ill they will put themselves under treatment at once and will give themselves every chance of recovery; but as long as employers say to their men, "You have been to a sanatorium and therefore are dangerous," so long will these men hide up their disease and will remain a real danger to their fellow workers till they break down and go home to die. Combating these difficulties, especially with the employers, the after-care committee can do much to help, and remember, the employers want as much education as the employed.

Now a few words about the after-care work that is being done. The results of inquiries among the working-class sanatoriums show that about half—the exact figures being 36 out of 66—do after-care in some way, and the methods adopted fall under four heads: (1) Preliminary; (2) working patient scheme; (3) advice to patients; and (4) subsequent after-care.

1. Time does not permit of entering into details, but I may briefly state that by preliminary I mean the Gospel of Hope, the feeling that is engendered in all good sanatoriums among the patients that arrest and an active future are the object of their stay, and that to effect this they must work. They all work; all are as busy as busy can be, the loafer is not developed; they all look forward to arrest and future usefulness.

2. To help this still more the working patients scheme comes in. Selected cases are kept on; they give their work and get their board and lodging, and so are allowed a further period of treatment under more strenuous conditions, with time to get quite hard and time to look out for a suitable future. The nature of the work given differs in different sanatoriums. In some the men are employed in and about the place at work that brings into use their former experience and occupation. Thus, a carpenter is made to do his particular kind of work and a painter to paint, &c. At others attempt is made to teach definite trades that may be useful afterwards—French gardening, gardening, poultry farming, &c.[2] And thirdly, at some few sanatoriums a definite course of work and employment—a graduated system of labour—is proposed, with a view primarily of getting the patient hard and turning him out effective and less liable to relapse; thus, a gravel-pit is worked or ground is levelled—work of little use in itself but devised solely for the patient's improvement.

3. Under "Advice to Patients" is included the general lectures and teachings, and the individual advice. The latter is best done after a month's stay, when the prognosis is the more clear and the future can be better estimated. Each case is dealt with separately and on its own merits, and the possibilities considered, taking into account the home ties and the surroundings, and recognising the great advantages of the old employment, because it is the one that is known and therefore the easiest, and recognising, too, that a bad employment is better than none at all, for none means starvation and therefore relapse. It must always be remembered that the bad effect of what seems a hopelessly unsuitable employment may be neutralised by the correct use of the remaining 16 hours which are absolutely under the patient's control. Usually, also, further advice and a useful leaflet are given just on leaving, and each and every one is made to understand that when they leave they must avoid excess, must lead a quiet, sensible life, and always carry out the principles of open-air treatment, fresh air, plain food, and rest before and after meals.

4. And then, finally, the subsequent after-care—the looking after the patients after they leave. Experience shows that not much can be done in this way by the sanatoriums. It is possible, indeed, by postcards and Christmas cards to keep in touch with the ex-patients, and it is desirable to get them to call periodically for advice and examination, but this is about all that can be done. To follow the patients up after they leave and to keep a systematic hold on them are beyond a sanatorium's powers. This work must now be left to the senders—to those who sent the patient to the sanatorium: they must now step in and take charge. All ex-patients need a friend, and it is very pleasant to be able to state that the societies—the Charity Organisation Society and similar societies—mostly do help in this way; that out of 102 that send patients to sanatoriums, 83 look after them on their return, in some way mostly through the ordinary visitors; six have special visitors and six others after-care committees, and about a third make special efforts to get employers to coöperate in finding work, &c.

This, then, is the present position: 1. After-care is an essential to meet the various difficulties. 2. The sanatoriums, either by special after-care committees, by lectures or by individual advice, do much to help and to start the patient off well. 3. A large proportion of the senders are already organised to do what they can to carry on the work. But it is here, in the link between the sanatoriums and the senders, that the failure comes in; there is apt to be a hiatus, and the link is apt to be missing; there is a want of continuity in the advice given, and much good is lost by want of coöperation of the various advisers.

After careful investigation of the situation the National Association for the Prevention of Consumption has decided to meet this difficulty by the following recommendations, believing that much better results will be arrived at by some uniform scheme. The recommendations are as follows:—
A. To advise both the sanatorium authorities and the senders: 1. To recommend their patients (*a*) to return as much as possible to their old employment; (*b*) to make the best use of their leisure time; and (*c*) to carry on in their own homes in every possible way the principles of the open-air treatment learnt in the sanatorium, both as regards themselves and their friends. 2. To see that each patient has a leaflet of instruction in his own home. 3. To try to convince employers that the risk of infection from an ex-patient is very slight and as nothing compared with that from a consumptive who has not had any teaching.
B. (And this is the important recommendation.) To ask the superintendents of all sanatoriums for the working classes, with a view of getting continuity of advice, to secure in some way that advice and help be given to patients while at the sanatorium about their future life and work, and to arrange to give, if asked, a report or memorandum of this advice to the sender.
C. To ask all Charity Organisation Society committees and kindred societies who send patients to sanatoriums to look after the cases they have sent on their return; and to get and make use of the sanatorium's report and advice about each patient.
D. *As regards London*, to ask the Medical Advisory Subcommittee of the Charity Organisation Society to appoint representatives in each borough who as private individuals and not as Charity Organisation Society workers will undertake, with the permission of the patients, to visit the homes of the patients notified to them by sanatorium authorities as having come to sanatoriums independently of societies, and who also will undertake on the patient's return to give advice when needed.
E. *As regards the provinces*, to get some similar scheme of representation started according to the need of the place and in the manner best suited to it. The medical officer of health's advice may well be asked in the matter. It is hoped that something on these lines will commend itself to those interested, and it is hoped to start work energetically in the autumn to carry them out.

Special attention is being given in this congress to the National Insurance Bill, and if a reference is to be made to it in the consideration of after-care the following two thoughts may be allowed:—

1. After-care is mainly dependent on individual effort acting in individual cases, and there is a great danger in sanatoriums supported by State funds that this individuality of the workers will be hampered and checked, that private interest and work will be superseded by officialism which will not only be more expensive but less effective, and that the little touch that just makes all the difference between good results and exceptional results will be found wanting.

[2] Here I should like to mention that the garden in the women's quarters at Kelling is being turned over to two girl gardeners, who are not only doing it very well but by their increased health are showing what such work can do for such cases in the way of cure.

2. The working patient scheme where patients are employed in and about the sanatoriums, possibly for a small wage, will be hampered because, unless the Bill is amended, these workers will have to be insured and the sanatoriums will have to pay the insurance, and so a scheme which is only in operation for the patient's good will lead to a larger loss to the sanatoriums than it does at present.

Possibly these difficulties can be removed (1) by working the State-paid sanatoriums through the existing sanatorium machinery and so keeping its individuality; and (2) by freeing all working patients whose work is part of their treatment from the action of the Bill; but unless this is done it is impossible that sanatoriums can have the satisfactory results that they do at present.

Norwich.

EXCESSIVE LOCAL PERSPIRATION.

AN ACCOUNT OF THE SUCCESSFUL TREATMENT OF FIFTEEN CASES.

BY A. HOWARD PIRIE, M.D. EDIN.,

CHIEF ASSISTANT IN THE X RAY DEPARTMENT AT ST. BARTHOLOMEW'S HOSPITAL.

MY attention was first directed to this subject about five years ago, when I noticed that after a long-continued series of sittings under X rays the patient ceased to perspire on the part treated. Since that time I have had 20 cases of excessive perspiration to treat. Nine of these have been qualified medical men. In every case which has been fully treated the rays have produced their effect on the sweat glands, and either entirely stopped their action or reduced it to less than normal.

The parts I have had to treat have been: the face, 2 cases; armpits, 10 cases; hands, 9 cases; and feet, 1 case. One case included hands, face, and armpits. In two cases a cure was got after only two applications and no more sittings were given, but usually from three to five have been required. The number of treatments required depends on the dose given. In the two cases which were cured by two sittings both suffered from the effects of too large a dose of X rays (pain, irritation, blistering, and redness), and since these two cases the others have been done by the longer method. I believe six sittings of one pastille dose each at intervals of one month is the best treatment, as it causes absolutely no discomfort and the patient runs no risk.

The rationale of the treatment is, I believe, as follows. When an X ray photograph of the thigh is made the negative shows the bone lighter in colour than the surrounding tissues, because the bone, being denser, has absorbed more X rays than the surrounding tissues. Looking at a normal cell and at a karyokinetic cell, we see that in the latter the chromatic filaments are more condensed, and these denser filaments absorb more of the rays than the normal cell does. There is a limit of X rays which has no effect on a cell. More X rays will stimulate the cell, still more will damage it, and still more will destroy it. The greater absorptive power of the karyokinetic cell to X rays makes it more vulnerable, so that the dose of X rays which will just not kill a normal cell, kills a cell undergoing division. The dose required for this is, I believe, a little more than a pastille dose, so that by giving one pastille dose each month for a period of six months the karyokinetic cells (especially those of slow growth) are destroyed. This principally affects the hairs, sebaceous and sweat glands.

I have had the opportunity of having a piece of skin so treated examined in the Pathological Laboratory at St. Bartholomew's Hospital, and many sections cut from it were examined. The report states:—

April 28th, 1911. Examination required: Skin after treatment by X rays. Pathological report: The skin was very difficult to dehydrate. On section it appeared normal as regards the epithelium, except that the cells were difficult to stain and much keratinised. No hair follicles, sebaceous or *sweat glands* found. The tissue underlying the surface epithellum was composed of dense fibrous tissue. H. G. B.

Kolipinski has reported one successful case of hyperidrosis axillæ treated by the thermocautery. The result was got by producing burns of the second and third degree. Major F. J. W. Porter, R.A.M.C., recommended dissecting away the skin of the axilla in order to stop perspiration. No other method but these and X rays have been found efficacious in stopping perspiration. Drugs are useless as a permanent cure.

In treating the hands or armpits I get all parts of the surface of the skin equally exposed to the rays by means of a delivery tube which has a firm base of celluloid. The celluloid is a part of a sphere whose radius is 24 cm. The source of the rays is placed at the centre of this sphere and the hands are pressed firmly against the celluloid. Thus all the parts of the hands which touch the sphere are exactly 24 cm. distant from the source of the rays. A barium platinocyanide pastille is placed 12 cm. from the source of the rays and another pastille is placed on the hands. The dose can thus be measured by Sabouraud's method and at the same time by the control on the skin.[1] Another control I use at the same time is the milliampère minute method with a water meter. The celluloid absorbs a small quantity of rays, and I trust mostly to the pastille on the skin and look on the other two methods as controls.

Pusey in 1903 and Bulkley in 1904 reported cases of hyperidrosis in the axilla which were improved by X rays. Engmann was the first to recommend the application of a dose which would produce an erythema. Lanari recommended in treating the palms of the hands that the surface should be divided into four areas and each area treated by itself. The dose to each area he recommends is 8X—i.e., nearly two pastille doses—so as to produce redness, swelling, and skinning. The skin is shed in large flakes, leaving red, smooth skin underneath. The skin becomes normal after several weeks. He considers one such application sufficient for a permanent cure, and reports a perfect result in one case a year after the treatment. In one case in which I carried out this treatment the perspiration was not checked. In other two cases (Cases 7 and 8) such a dose had the desired effect, but caused much discomfort, and I do not recommend so large a dose. Stover in 1905 and Kromayer in 1907 reported cases of hyperidrosis treated by X rays.

I can only find reports of isolated cases, and I therefore think that a report on a series of 20 cases should prove of interest. They are the following:—

CASE 1.—The patient, about 45 years old, had suffered from excessive perspiration in his armpits for the last 30 years. He was very definite in his description of its type, which was as follows. It began after 10 A.M. and continued till about 6 P.M. During the evening and in bed he was not troubled by it. Cold and worry aggravated it; therefore he disliked driving on a cold day and writing letters which required much thought. Treatments by X ray were given on May 25th, June 19th, and July 24th, 1909. On the last date he said the perspiration was less. He noticed that when he perspired in the morning his shirt was wet, but that it dried again before evening, whereas it used to remain wet all day. On August 28th he reported that he no longer required to change his undershirt while dressing for dinner, provided he had not been working hard during the day. Another treatment was given on August 28th. On Sept. 19th he reported perfect comfort except on extreme exertion.

On June 23rd, 1910, he wrote to me: "I am glad to say that my arms are still quite comfortable. Even yet I have not got used to the indescribable feeling of comfort. There are many people, especially women, who ought to have your treatment." On April 12th, 1911, he came to see me for another purpose, and I noticed that both armpits were quite dry. There were telangiectases in the lower half of the right axilla. The left axilla had no telangiectases, and the hair was thin.

CASE 2.—A surgeon, of about 25, suffered from excessive perspiration over his face, hands, and armpits. He was of a nervous disposition, and his perspiration was of the ordinary nervous type, made worse by excitement and lessened by cold. His father also suffered from it. Having so many areas to treat, many sittings were required from July 16th, 1909, till March 25th, 1910. The face was the most troublesome area, and caused me considerable anxiety, but, in the end, hands, armpits, and face ceased to sweat profusely, and have continued so since. In June, 1911, I heard from him, and he remains quite comfortable.

CASE 3.—Dr. —— came to me on May 17th, 1909, suffering from excessive perspiration in the armpits. It had troubled him all his life. On touching the armpit of his shirt and coat I found them quite wet. He showed me what he called his high water line—i.e., the line to which the perspiration on his coat extended. At this line a white deposit of the salts of perspiration lay owing to evaporation. He remembered this line on his Eton jacket at school 20 years before. The perspiration was made worse by excitement and heat. It was very troublesome in cold weather. It rotted his clothes. Treatments were given on May 17th, June 19th, and July 2nd, 1909, and on the last date he was improved so far that each day after midday perspiration ceased, and his shirt which got wet in the morning became dry in the afternoon. I noticed his left axilla sweating while his right did not. Further treatment was given on Sept. 17th and since then the patient has been quite comfortable

An interesting thing happened after the first application of the rays on May 17th—viz., he did not perspire for the rest of the day. He did not remember to have ever before experienced a day without perspiration. On July 24th, 1910, 11 months after his last séance, he described his case to me as one of "unqualified and permanent cure." I have not heard from him since, but I believe he remains cured.

CASE 4.—A surgeon, of about 40, came to me at the end of 1909, complaining of perspiring hands. The perspiration was made worse by exertion and excitement. He had suffered from it as long as he could remember. It troubled him most while attending a confinement or

[1] See Archives of the Röntgen Ray, 1911, for description of this method.

doing an operation owing to his fear of producing sepsis from his own rough and cracked hands. His hands were very rough and cracked from his continual use of 40 per cent. formalin in which he soaked them in order to get temporary relief. X ray treatments were applied at the end of May, June 30th, July 28th, and August 29th, 1909. On the last date he said the perspiration was decidedly better, and I noticed his hands were drier than my own. He had been using formalin. No more treatment was given till March 18th, 1910, owing to the distance he had to come for the treatment—over 100 miles—and due to his professional duties. Perspiration had been so little since the last treatment that he had been quite comfortable. A treatment was given on March 18th and July 8th, 1910, and since then he has had no more trouble from perspiration. On June 7th, 1911, he writes: "Yes, my hands are a great success and no trace of perspiration except, of course, between the fingers, and there very little. I believe the sweat glands are destroyed and that the cure is permanent, for the recent hot weather would have found it out were it not so.

CASE 5.—A physician, of about 40 years of age, had suffered from excessive perspiration in his armpits as long as he could remember. It was made worse by exertion or excitement. Cold did not increase it. He was comfortable during the evening if he was resting, but very uncomfortable all the rest of the day. X rays were applied on Oct. 12th and on Nov. 15th, 1910. Both these treatments were nearly double normal dose, and a month after the last he was so comfortable that he wished no more treatment. He came again on March 1st, 1911, and had another treatment, though he was perfectly comfortable. His comment on April 5th, 1911, on his own case was, "I consider the cure perfect. The comfort can only be appreciated by one who knows."

CASE 6.—A surgeon, of about 30, had suffered as long as he could remember from excessive perspiration in the armpits. It did not usually trouble him during the evening and never during the night. It was made worse by cold and worry. He had tried many external applications for it, including formalin, without effect. Rubber shields were useless, and acted like a poultice. A first X ray treatment was given on Feb. 26th, 1910. This produced a slight reaction and some epilation. When I saw him a month later the perspiration was still excessive, and I watched it collecting into drops. On March 10th another treatment was given, which was followed by marked improvement. The perspiration had so much decreased that it did not soil his shirt. Another was given on May 10th. On July 27th I found both axillæ pigmented, the right completely hairless and the left hairless in its upper half, but not epilated in its lower half. He has suffered no inconvenience from perspiration since July 27th. In November I had an opportunity of examining his axillæ and found the right was absolutely dry, and the left nearly so. His left was drier than my own axilla. It perspired so little that his undershirt was never damp. He remains cured.

CASE 7.—A single lady of about 21, suffered from excessive perspiration in the armpits. It was made worse by excitement and exertion, but it was just as bad in cold weather as in hot. She came to me and had a first treatment on Sept. 28th, 1910. When she lay down on the couch for treatment the perspiration ran from her armpits and soiled an area about six inches in diameter on the couch. A double dose was given on Oct. 25th, and this was followed by a severe reaction. I did not see her for the next three months, during which she suffered from several "boils" in the axillæ which had to be lanced. She had during the past year suffered from boils, and had undergone vaccine treatment for them before she came to me. After the reaction subsided the perspiration ceased in both armpits and no further X rays were required as the patient was quite comfortable. On Jan. 17th, 1911, she reported that her left armpit is always dry, while the right perspires very slightly. Her blouse is never wet, and she takes no precaution to keep it dry.

She came to me at my request on June 7th, 1911, and I found the left axilla had a few hairs in its deepest part, but no telangiectases and slight pigmentation. The left axilla felt quite dry to the touch, though the temperature on June 7th was about 70° F. in the shade. The right armpit had rather more hair than the left and was slightly damp, though not so damp as a normal axilla on a hot day. The contrast of her condition now with what it was when the perspiration ran from her axilla and soiled the couch during her first treatment is very marked.

CASE 8.—A nurse, aged 32, suffered from excessive perspiration in her armpits since 18 years of age. It was made worse by heat, exertion, and excitement. When she lay down on the couch for treatment I saw the perspiration trickling from the armpits down the sides of the chest. A first treatment was given on August 9th, 1910. On Sept. 7th a double dose was given, which caused a severe reaction. On Oct. 13th the reaction began to pass off and perspiration completely ceased. The hairs fell out completely from the right armpit. On examination about six months later I found the armpits quite dry, nearly hairless, and much pigmented. On June 7th, 1911, I heard that the patient had had no more trouble from perspiration. After the double dose herpes zoster appeared about the level of the seventh intercostal nerve. This is the only case in which I have seen herpes appear during X ray treatment.

CASE 9.—A married lady of about 35 suffered from excessive perspiration in her armpits as long as she could remember. The perspiration soiled her blouse very badly, no matter what precautions she took. Treatment by X rays were given on July 26th, August 30th, Sept. 26th, and Oct. 24th, 1910. After the last date the right armpit ceased to sweat and the left sweated still a little. A last treatment was given on Nov. 21st, and since then she has remained quite comfortable.

CASE 10.—A single lady of about 25 suffered from excessive perspiration on her hands. She could not write without soiling the paper nor do needlework without soiling the work. When I looked at her hands the lines in the palms were wet with perspiration. Treatments were given on Dec. 1st, 1910, and Jan. 5th, Feb. 2nd, and March 2nd, 1911. On March 30th she reported that her hands no longer perspired, but that the tips of her fingers still troubled her. Treatments were given on March 30th and May 4th. On the latter date she said she was quite comfortable. The palms were always dry and the tips of her fingers usually were so, but sometimes not. The skin between the fingers remained moist, but not sufficient to cause any inconvenience. She has remained perfectly comfortable since.

CASE 11.—A gentleman of about 40 suffered as long as he could remember from excessive perspiration on his face. It came on badly on exertion, but especially on excitement. So much did it annoy him that he shrank from attending social functions and taking any public positions. Treatments by X rays were given on Nov. 8th and Dec. 8th, 1910, and on Jan. 10th, 1911. On the latter date he reported that he had during the last fortnight attended two dances and perspired less than the other men did. A last treatment was given on March 7th, and since then he has been quite comfortable. On severe exertion he still perspires, but not otherwise. During his treatment I painted his eyebrows with a thick bismuth paste and covered his moustache and hair with lead. The roots of the eyelashes were also covered with lead.

On June 7th, 1911, he wrote me as follows: "The X ray treatment has been a great success. It has stopped the extreme sweating on my face. It only breaks through after exercise in the heat very slightly under my hat at the roots of my hair, just at the nostrils and under my lower lip, and, of course, in the eyebrows a bit, as they were protected. But the whole of it is of no consequence whatever compared with what it used to be. I was down for three days at Bisley in the intense heat and while most other men were streaming on the face I was merely moist."

The parts which he mentions which still sweat are those which were partly protected during the treatment. In treating the face I divide its surface into four areas, and direct the perpendicular ray on each side of the face at a point an inch and a half above the external canthus and at the anterior border of the masseter on a level with the mouth. The areas are treated as for ringworm without shielding the contiguous areas. Four pastilles are fastened in position on the skin with gum before beginning the treatment. During the exposure of one area each other area is getting a little X rays, therefore less than a normal dose is given to each area. The exposures are made so that at the end of the treatment the four pastilles have changed to an equal tint. Thus the whole face gets an equal dose. The treatment made the patient's face appear as if he had been sunburned, but on looking into the eyebrows one could see his original colour. The bismuth paste acted very well and no epilation was caused in parts protected. Epilation of the beard took place. After two months he required to shave as before.

CASE 12.—A student, of about 21, whose hands perspired as long as he could remember. They perspired even in bed. He had tried zinc sulphate, liq. plumb. fort., lead plaster, and dusting powders with no relief. Treatments were given on Oct. 8th, Oct. 29th, and Nov. 19th, 1910. After the last treatment his hands skinned. On the last date I noticed the thenar eminences were dry and the rest of the hands were moist. On Dec. 22nd I noticed the hands were all dry except the fingertips and between the fingers. Since then he has been comfortable and has had no more treatment. A last treatment was given on Dec. 22nd. On June 16th, 1911, he told me that in very hot weather his hands still perspire, but in ordinary weather they are generally dry. The ball of the thumb (which received a greater quantity of X rays during the treatment) does not now perspire under any conditions of temperature.

CASE 13.—A professor of medicine suffered from excessive perspiration on his feet with the result that his feet were always cold. This condition began while standing in the pathological laboratory. On walking 200 yards his feet were soaking. His feet were dry on rising in the morning, but they remained damp till he went to bed. He had two applications at intervals of 14 days in Edinburgh, from Dr. Norman Walker, who sent him for further treatment. In February, 1911, I gave him one treatment and shortly after he reported to me that the condition was much improved. Before he could have another treatment he had to go abroad, and I have not heard of him since.

CASE 14.—A surgeon of about 40 years of age suffered from excessive perspiration in the armpits as long as he could remember. It was made worse by heat and exertion. He also perspired in cold weather. He treated himself by X rays, but unfortunately he produced a bad burn not only on his right armpit but also on his right elbow. This took place in April, 1910. On Feb. 8th, 1911, he came to me for the completion of the cure. I protected the parts that had been burned (the upper half of the right axilla) and the right elbow with lead rubber, and exposed the lower half of the right axilla. Treatment was given to both axillæ on Feb. 8th and March 8th. Although the old burns were carefully protected by the heaviest lead rubber the ulcer broke down over an area of the size of a pin's head and caused much pain. Treatment was therefore stopped. The right axilla is now quite free from perspiration under all circumstances, and the left does not perspire sufficiently to soil his shirt.

CASE 15.—A girl of 14 perspired so much on her hands that it soiled her needlework. The perspiration was less when she was cold and greater when she was hot. The terminal phalanges perspired most. A treatment was given on May 18th, 1910, and another a month later. In June, 1911, I heard from her mother that the patient had not been able to come for further treatment as she had had to leave London, but that her hands were much improved.

Epitome of Result of X Ray Treatment of 15 Cases of Excessive Local Perspiration.

Number of case.	Part treated.	Number of treatments.	Result.
1	Armpits.	5	Cured.
2	Face, armpits, hands.	5 to each area.	,,
3	Armpits.	4	,,
4	Hands.	5	,,
5	Armpits.	3	,,
6	,,	4	,,
7	,,	2	,,
8	,,	2	,,
9	,,	5	,,
10	Hands.	6	,,
11	Face.	4	,,
12	Hands.	4	,,
13	Feet.	1	Improved.
14	Armpits.	2	,,
15	Hands.	2	,,

Note.—Those cases cured in two sittings had discomfort caused by

reaction from the X rays. Those cured in five and six treatments had no discomfort from the treatment and no reaction except slight pigmentation.

The next five cases are still under treatment as they have just come to me lately, viz.:—

CASE 16.—A lady whose hands perspire so freely that I have seen the perspiration fall from her finger-tips five minutes after she has thoroughly dried her hands.

CASE 17.—A doctor who shrinks from his professional duties owing to his perspiring hands.

CASE 18.—A worker in fine steel instruments who has to wear gloves to prevent his perspiration rusting the steel.

CASE 19.—A lady whose hands perspire so much that she soils her work.

CASE 20.—A doctor whose armpits perspire profusely.

These cases, I expect, will yield as the former ones have done.

Excessive local perspiration cannot be classed as a disease, but to one afflicted with it it is a real infirmity. A surgeon with perspiring hands runs a risk of infecting a wound. A physician with perspiring hands leaves his patient's wrist wet after feeling the pulse, and has the chagrin of seeing his patient drying the wrist. When the armpits are affected clothes are soiled and rotted by the perspiration, and the patient is uncomfortable from wearing wet underclothing. Cold feet from socks wet with perspiration is another form of annoyance.

All these conditions can be cured by X rays. In my experience every case which has been fully treated has been a complete success, and I can thoroughly recommend the treatment. When perfectly carried out the patient suffers no discomfort and there are no bad after-effects.

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Harley-street, W.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the Exmouth (Devon) Dispensary on July 24th Mr. Oliver Eaton, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Camb., was presented with a silver-mounted pipe, suitably inscribed, by the local detachment of the British Red Cross Society in appreciation of his services as honorary lecturer.

A NEW FORM OF TROCHISCUS.

BY SIR JAMES SAWYER, M.D. LOND., F.R.C.P. LOND., F.R.S. EDIN.,

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THE τρόχισκος of Galen (A.D. 131-201, next to Hippocrates the greatest physician of antiquity) was not the officinal flat, punched-out lozenge of present-day pharmacists, but it was a small globe or ball, may be of soap, may be of sugar, a pastille sometimes, in the sense of being a medicated "drop" of sweet confectionery. To some such ball, as a medicinal vehicle of frequent use, medicine may now well return and find therein abundantly suggestions of therapeutic usefulness. For such purposes I suggest the assimilation into medical practice of the excellent pharmacological basis afforded us by the popular modern sweetmeat known as the "chocolate cream."

Ten years ago I published a paper on medicated lozenges,[1] and seven years ago I included a revised and extended version of the same paper in a book of mine upon subjects in a physician's practice, addressed to my medical brethren.[2] My present suggestion is an outcome of my continued and further attention to this very useful mode of medication in my therapeutic work. Surely the prescriber who ordains an efficient and grateful trochiscus will well fulfil the third article of a very authoritative precept of medical practice—namely, *curare cito, tuto, et jucunde.* Horace's apostrophe, "*qui miscuit utile dulci*"[3] may be held of a physician who can prescribe in his own magistral formula—that is, in a formula which is appropriately varied accordingly as he finds the individual therapeutic indications afforded by each particular patient—a skilfully medicated trochiscus, combining efficient remedies in the pleasing form of a delectable sweetmeat.

Many, indeed, are the remedies which an experienced and experimented prescriber may choose for exhibition in such a form of trochiscus, and so for direct application through the agency of that vehicle to the mucous membranes, and even to the deeper parts, of the lips, mouth, tongue, fauces, nares, throat, œsophagus, stomach, and further on in the alimentary canal, and of the respiratory passages below the pharynx, and also for their general as well as their local physiological actions and therapeutic effects. In many maladies of the oral cavities, fauces, tonsils, uvula, velum palati, pharynx, gullet, in some diseases affecting the larynx, in some bronchial and in some other pulmonary disorders, and in some other morbid conditions which may indicate the accurate exhibition of drugs (all of which conditions can alone be contra-distinguished by the fully trained member of our faculty), the basis and form of a trochiscus supply to us a convenient, agreeable, and effective vehicle for our particular selection from a large repertory of remedies.

It may be useful to recall that we owe our present therapeutic use of "lozenges" largely to the old Edinburgh Pharmacopœia. Early in the century last past that veteran therapeutist, Dr. Paris, declared that "trochisci, troches, or lozenges" were then generally regarded as objects rather of the art of the confectioner than of that of the pharmacist, and so neither the London nor the Dublin Royal College of Physicians condescended to notice them, while the Edinburgh Pharmacopœia gave several formulæ for their preparation. Dr. Paris held such preparations as undoubtedly useful in medical practice, not only in the officinal forms but also in certain magistral combinations, for which latter he published some valuable suggestions in his classical Pharmacologia. Since his time many clinical considerations, based upon advances in our knowledge in physiology and in pathology, and the employment of certain improved diagnostic instruments of visual research, have enlarged the use of medicated trochisci. The British Pharmacopœia gives 17 formulæ for trochisci, these medicaments being made up variously with a "fruit basis," with a "simple basis," with a

[1] Brit. Med. Jour., Nov. 30th, 1901.
[2] Contributions to Practical Medicine, fourth edition, 1904.
[3] De Arte Poetica, l. 343.

"rose basis," or with a "tolu basis." Besides these officinal preparations, many others of a like kind are to be found in our hospital pharmacopœias, while there are many others in popular use, some of them of secret composition, and some of them under proprietory exploitation, with all its baneful consequences.

In my present communication, as in others I have made upon the subject, I aim at encouraging my professional brethren to prescribe medicinal trochisci in their own magistral formulæ, and I desire to draw their attention to a new vehicle of the kind which I have found useful in practice—namely, the "chocolate cream." As we know, chocolate is made by triturating in a heated mortar the roasted seeds of the Theobroma cacao, freed from their husks, with an equal quantity of sugar (saccharose), and making the mixture into a paste with water, having flavoured it variously, as with vanilla or with cinnamon, and the "cream" is made by filling a small globular envelope of this mixture with a small portion of milk which has been mixed with sugar and evaporated by the aid of fire to a pasty consistency. It is this latter paste which should be medicated from our prescriptions by the pharmacist. Some skilful members of the craft have succeeded well in carrying out my own wishes to such purpose. Such medicated trochiscus we may prescribe, thus:—

℞ Menthol, gr. ½.
Ol. eucalypt., m½.
Pastæ lactis,
Pastæ nuclei cacao, āā q.s.
Fiat trochiscus, sec. artem.

Or the pasta lactis in each trochiscus may be medicated by the addition to it of a grain or two of borax, or half a grain of sulphate of zinc, or a minim of oil of turpentine, or of oil of cajuput, or half a minim of oil of anise. The various clinical indications for the choice of these and of other medicaments which may be exhibited in the vehicle I now propose are well known to our profession and are alone distinguishable by one of us, so that any enumeration of the symptoms which suggest the use of such remedies is unnecessary in any communication from me, and in the public interest, for reasons which will at once occur to us, such enumeration would be undesirable.

Perhaps the trochisci I have now described might be called cremules and, Latinised, cremulæ Wnen quickness of preparation is to be wished for unmedicated ones can be medicated readily by remedies which are liquid in their form, by injecting a minim or so of the medicament into the centre of a "simple" cremule, by the aid of a hypodermic syringe.

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Reviews and Notices of Books.

Geschichte der Medizin (*History of Medicine*). By Dr. MAX NEUBURGER, Professor of the History of Medicine in the Imperial and Royal University of Vienna, &c. Vol. II., Part 1, second half. Stuttgart: Ferdinand Enke. 1911. Pp. 233–528. Price M.8.20, or 8*s.* 3*d.*

THIS instalment of Professor Neuburger's excellent History of Medicine deals with a conspicuously barren period in the existence of the healing art—a period for the most part of apparent retrogression rather than of progress. Nevertheless, it is interesting to trace the rivulets derived from Greek and Arabic sources which trickle through the dreary morass of darkness and superstition.

After a few pages devoted to Celtic and ancient German medicine, the author proceeds to deal with the art as it existed in the early Middle Ages. Throughout the greater part of Europe medicine was chiefly practised at this time by priests and monks, but in some parts, notably in Southern Italy, lay practitioners were not extinct, and the seeds were kept alive which were some centuries afterwards to develop into the School of Salerno. A name of note at the beginning of the sixth century is that of Anthimus, who exhibited some originality of thought and wrote sensibly on the regulation of diet in disease. It was a time of war, pestilence, and famine, in which the cloister alone afforded a safe asylum for any kind of learning; and in default of possibilities for research we must be grateful to the monks for their services in copying and handing down to us the works of the great writers of earlier times. Among the preservers of medical writings must be noticed Cassiodorus, who was first a statesman and then a monk, and Benedictus Crispus, a bishop who about the beginning of the eighth century wrote in bad Latin hexameters a compilation of remedies. Monkish medicine, however, naturally tended to superstitious observances, worship of relics, and miracle-working. In the South of Italy study of the later Latin writers on medicine prevailed and the construction of medical epitomes was much practised in the eighth century. Some of the rules for the visiting of the sick and for the management of the patient and his friends drawn up at this period have a curiously modern air. Under Charlemagne the foundation of hospices and infirmaries for the sick was encouraged, and the medicine of his reign is associated with the name of Alcuin, who carried on the traditions of the Anglo-Saxon school, which had been adorned some half century before by the Venerable Bede. In the tenth century a school of some note existed at Chartres, and medicine was largely practised by Jewish physicians. Lepers were segregated, mainly on religious grounds, and exorcism was frequently practised.

The eleventh and twelfth centuries saw the rise to eminence of the celebrated school of Salerno, famous among whose teachers were Gariopontus, Petroncellus, Alphanus, and Trotula—the last of whom is called "*sapiens matrona*," a learned lady. Little was done in these times in the way of extending scientific knowledge, but the ancient authors were studied and translated, and compendia were made for practical use. In the twelfth century we find various forms of madness recognised as diseases of the brain and assigned to affections of different parts of this organ, while the surgical skill attained by some members of the school of Salerno is shown by the advice to suture the ends of divided intestine over a hollow cylinder of elder wood. Schools of less note flourished also at Bologna and Montpellier. A distinguished scion of the latter was Arnaldus of Villanova, who appears to have been, not only a learned man, but a sensible physician. Gradually, however, during this century the growth of scholasticism and formalism submerged all original thought. The worship of Aristotle as an infallible authority left no room for personal observation, and throughout the fourteenth century stagnation everywhere prevailed. Even when the opportunities for fresh knowledge occurred, as in the revival of the practice of human dissection, the desire to confirm the accepted doctrines precluded accurate observation and scientific advance. In medical practice inspection of the urine was the main diagnostic measure, and bleeding and purgation were the chief methods of treatment. The belief in astrology took the form of placing various regions of the body under the influence of different constellations, and figures illustrating this superstition accompany those showing the superficial veins suitable for venesection in the manuscripts of this epoch. Some of these curious figures are reproduced in Professor Neuburger's book.

It is greatly to the credit of the learned author that he succeeds in retaining the reader's interest in his account of the fortunes of medicine during the depressing period which is dealt with. The book is in every respect worthy of its predecessors, of which we have expressed on former occasions our high appreciation, and we look forward with keen expectation to the appearance of the concluding volume or volumes of this most scholarly and authoritative History of Medicine.

Regimen Sanitatis: The Rule of Health. A Gaelic Medical Manuscript of the Early Sixteenth Century, or perhaps older, from the Vade Mecum of the Famous Macbeaths, Physicians to the Lords of the Isles and the Kings of Scotland for Several Centuries. By H. CAMERON GILLIES, M.D. Printed for the author by Robert Maclehose and Co., Limited, University Press, Glasgow. 1911. Pp. 139.

To Dr. H. Cameron Gillies thanks are due for this most interesting and admirably got-up book, which is the first definite effort to restore to the light the Gaelic medical manuscripts which have so long lain mouldering in oblivion. *Regimen Sanitatis* (or the Rule of Health), an old Gaelic medical manuscript of 62 vellum folios, was discovered in the British Museum by Dr. Gillies. It belonged to John Macbeath (his name may be taken as representative of the whole family, others doubtless contributing), who kept a note-book, or *Vade Mecum*, in which he jotted down the sum and essence of his reading of all that was best in the medical literature of Greece and Rome and Araby, mingled with his own comments and observations, which were based on a wide personal experience. This note-book was set down in the Scottish Gaelic of the time (the early sixteenth or even fifteenth century). It was never intended for publication, but was simply a sort of practical *liber memorabilium*, such as is kept by many modern members of the medical profession. MacBeath gave his manuscripts over to a professional Irish scribe—Aodh O'Cendainn—so that the substance might be written in the best and most compact form, and that is how they are now extant—thanks to Dr. Gillies. The MacBeaths seem to have read the best that was available in their time, and in their writings we meet such names as Avicenna, Averroes, Joannes de Vigo, and Hippocrates.

Part of the text of the *Regimen Sanitatis* is based upon *Rosa Anglica seu practica medicinae*, a work written by John of Gaddesden, who was taught in the Montpellier School and who was a graduate in medicine of Merton College, Oxford, and a Court physician. The *Rosa Anglica* was so popular that it was reprinted up to the end of the sixteenth century. The substance, and indeed the essential character, of the *Regimen Sanitatis* is based upon the famous rhyming Latin poem—a popular work intended for the laity—by Joannes de Meditano, *Regimen Sanitatis Salerni*. It is said that William of Normandy (afterwards William the Conqueror) went to the famous medical school of Salerno—nicknamed "Civitas Hippocratica"—in search of health, and this book by Meditano, which had an immense reputation in the Middle Ages, being translated into most European languages, was addressed to Robert, son of William the Conqueror—"Anglorum Regi." Hali's Compendium, which Constantinus Africanus of Carthage, who studied at Monte Cassino, rendered under the title of *Pantegni*, is referred to in this Gaelic manuscript; and undoubtedly the MacBeaths were greatly influenced by an important work which they possessed—*Practica seu lilium Medicinae* of Bernard Gordon, a Scottish teacher at Montpellier in the early part of the fourteenth century. The MSS. of the *Regimen Sanitatis* are shown in Dr. Gillies's monograph beautifully photographed, and there are an accompanying translation and most useful notes and a glossary. They deal with such questions as the regulation of the health, the quantity of the food, the eating of food, the times of eating, and the age and temperament, and are full of wisdom. The great interest of the book lies in the fact that it shows that away back in the fifteenth and sixteenth centuries there were physicians and scholars in the far north and in the western isles of Scotland who were men of profound practical experience themselves, and who, in addition, had a thorough knowledge of all that was best in the ancient Grecian, Roman, and Arabian medical literature.

Dr. Gillies is to be heartily congratulated on having produced a work which has been to him a labour of love.

What Shall I Eat? By Dr. F. X. GOURAUD, Formerly Chief of the Laboratory of the Medical Faculty of Paris. Translated by FRANCIS J. REBMAN. London and New York: Rebman, Limited. 1911. Pp. 379. Price 6*s.* net.

THIS book is an attempt to tell us what we should eat, drink, and avoid, both in health and disease. Its sub-title is "A Manual of Rational Feeding." There is much that is interesting in the work, but the physician will have to read a little between the lines and be careful not to accept all its dicta. The author mentions in succession each article of food, e.g., meat and its varieties, fish, milk and its products, fats, eggs, cereals and their products, legumes, potatoes, vegetables, fruits, condiments, and what he calls "nerve foods," and winds up with short chapters on beverages and vegetarianism. He mentions the chief characters, composition, and uses of each food, its action on the digestive and other organs, and gives the indications for or against its use in health and disease. We do not think that the translator has been altogether successful in conveying the meaning of the author if we may judge by a few examples. "The nitrogen of beef is composed of albuminoids—i.e., myosin, myostroin" (p. 21); "The extravagant content of nitrogen forms the generation of microbes" (p. 29); "Nitrogen forms a splendid breeding ground for intestinal bacteria"; urea is "the issue of albumin" (p. 33); meat "wears out the parenchyma of the liver"; while brain, we are told, is a "food for rephosphoratisation." Under the head of Juices of Meat we find: "There is a larger number of commercial articles which are prepared in ever so many different ways, the principal advantage of which is simply one of commodity." There are some strange inconsistencies. We are told that "The Japanese live almost exclusively on fish, and but rarely eat meat," and a little later (on p. 177), under the head of "Rice": "We may at once claim that the Russo-Japanese war was the triumph of rice over rye." Fish itself is a "rephosphorating food," while milk is "essentially a living food," and is said to contain "yeasts." What is one to make of the following cryptic sentence? "The habit of finishing every meal with a bit of cheese often enough proves fatal to men of the world" (p. 138). The well-known French word *apéritif* is rendered by the word "aperient"—a very different affair. The translator has added a glossary in which we find "Ternary bodies" defined as "the fats, albumins, and carbohydrates of any food." We cannot agree with the enthusiastic translator's implication that the book deserves a place on the reference book-shelf of every medical man. There is a copious index of the diseases referred to in the text, and a short preface by Professor Armand Gautier of Paris.

Practical Photo-Micrography. By J. EDWIN BARNARD, F.R.M.S., Lecturer in Microscopy, King's College, London. Illustrated with 79 figures in text and 10 plates. London: Edward Arnold. 1911. Pp. 322. Price 15*s.* net.

PHOTO MICROGRAPHY now embraces a wide range of subjects, more especially in histology, bacteriology, and pathology; and in recent years petrology and metallurgy are the latest fields for its application. There is, therefore, ample room for a text-book dealing with this subject, and it is with pleasure that we welcome the excellent treatise of Mr. Barnard. To become expert at the work the operator must master the use of the microscope, and know the optical

principles of its construction as well as the technique of pure photography. To these ends the author devotes several chapters to the general construction of a microscope, its optical equipment—objectives and oculars (emphasising the fact that it is advisable to purchase these only from the makers of highest repute), substage condensers, and illuminating apparatus, second only in importance to the lenses themselves. Illuminants are next dealt with, and the importance of electrical illuminants is pointed out. The various forms of photo-micrographic cameras are described and amply illustrated. Here we would point out the great importance of the use of dark-ground illumination, as, for example, by the use of a parabolic reflector, in instantaneous photography of living bacteria, trypanosomes, and spirochætæ, an art that has recently been applied by Dr. Comandon to cinematography. Chapters follow on the use of the microscope and its several parts, and above all in photography the necessity for preventing vibrations. As in photographing microscopic objects colour screens are almost invariably necessary a full account of their nature and use is given, together with an account of the various photographic plates on the market. The plate having been exposed, the next stage is the development of the negative, which does not differ from the method used in ordinary photography. Some special processes are then described—e.g., how to use ultra-violet rays, photography of metals, of cultures of bacteria, and the production of lantern slides by the three-colour process of Sanger-Shepherd, the autochrome, the "Thames" and Dufay colour processes. There is no coloured plate to show what can be done by these methods. The last chapter is devoted to the description of "some progressive examples" of the ten plates, which include illustrations of sections of stems of plants, of foraminifera, scalp, tongue, medulla oblongata, bacteria, trypanosomes, pus and gonococci (× 1500), yeast, typhoid bacillus, surfaces of metallic alloys, &c. There is a useful appendix, which includes a list of books of reference (exclusively English however); there are no references to French or German publications. The work will prove most useful to all who practise a fascinating art and a most valuable branch of scientific technique.

Diseases of the Skin. By JAMES H. SEQUEIRA, M.D. Lond., Physician to the Skin Department and Lecturer on Dermatology at the London Hospital. With 44 plates in colour and 179 other illustrations. London: J. and A. Churchill. 1911. Pp. 539. Price 25*s.* net.

Dr. Sequeira is to be congratulated on having produced so excellent a text-book on skin diseases. The volume answers all the tests demanded of a satisfactory text-book for students and practitioners. It is clearly written in a simple, restrained style; the descriptions of the various diseases are vivid and systematic; throughout there is abundant evidence of careful selection and pruning. The author has avoided the common error of dealing too lengthily with certain diseases in which he takes a special interest, and dismissing others too abruptly. This cardinal virtue is attained only by teachers of conscientious and methodical habit; and perhaps its presence in this text-book is explained by the first words of Dr. Sequeira's preface: "The book began with notes for a course of lectures delivered in the Skin Clinic at the London Hospital in 1902, and has gradually grown with the experience of nine years' teaching."

The chapters of the book have been arranged as far as possible on etiological lines, but in many instances this has been replaced by a morphological classification, as is usual in the majority of dermatological works. The list of contents and the index overcome most of the difficulties that arise from the classification; but the failure of all classifications to meet practical problems of diagnosis can always be detected by the reader who seeks for it. To mention one example, folliculitis decalvans is described on page 166, under Microbic Affections of the Skin, as an infection of the hair follicles of the scalp, while the not dissimilar condition, Brocq's pseudo-pelade, is described on page 502 under Diseases of the Hair. Cross references in the paragraphs on diagnosis are the only means at present of diminishing these difficulties caused by imperfect knowledge, and hence by imperfect classifications of skin diseases. As an example of Dr. Sequeira's concise brevity in description we refer our readers to his clear *résumé* of the X ray treatment of ringworm, and to his admirable chapter on Seborrhœa. We are glad to see at last in an English text-book a complete, though brief, presentation of Dr. Sabouraud's illuminating researches on the true nature of pityriasis and seborrhœa.

We have rarely seen better coloured plates, which, with a few exceptions, are from the author's own cases, taken by Dr. Arnold Moritz direct in three colours from the patients; and the black and white illustrations are equally good. Among the 179 illustrations, that of molluscum contagiosum is one of the few that fail to give a life-like representation, which in some of the serious cases is positively startling. The value of the book is enhanced by three appendices on mineral waters and spas, on drugs useful for the internal treatment of skin diseases, and on formulæ for local applications of ointments and lotions, baths and powders. There are a number of useful references throughout the book—an uncommon feature that will prove of great value to students who desire to follow up in detail any subject that particularly interests them.

JOURNALS AND MAGAZINES.

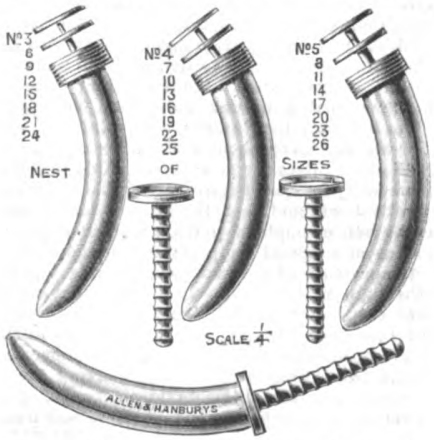
Journal of Pathology and Bacteriology. (Official Organ of the Pathological Society of Great Britain and Ireland.) Vol. XV., No. 4. Published from the Department of Pathology, University of Cambridge. Price 7*s.* 6*d.* Yearly subscription, £1 1*s.*—In observations on animals showing the symptoms of the disease called "distemper," Dr. J. P. McGowan of Edinburgh isolates constantly from the nose, pharynx, and trachea of men, monkeys, ferrets, goats, guinea-pigs, rabbits, and especially from cats and dogs suffering from symptoms resembling those of "distemper," a short Gram-negative, slightly motile, flagellated bacillus, sometimes nearly a coccus, and growing in chains in broth and in the infected tissues; neither involution forms nor spores have been observed. The organism grows well on ordinary media and forms a yellowish-brown thick growth on potato; in media containing dextrose and other carbohydrates and in litmus milk there is a marked production of alkali. The organism grows well without liquefaction on gelatin, and there is no formation of indol. Cultures of the organism were pathogenic to dogs, cats, and other animals on intraperitoneal inoculation, and when applied to the nasal mucous membrane of healthy dogs can set up the clinical symptoms of "distemper." Dr. T. Addis of Edinburgh writes on the Pathogenesis of Hereditary Hæmophilia. As the result of a very careful series of quantitative experiments with solutions of fibrinogen, thrombin, and prothrombin, prepared from normal blood and from the blood of well-marked cases of hæmophilia, and with thrombokinase solutions prepared from human tissues, the author comes to the following conclusions regarding the share which each of these factors has in causing the delayed coagulation of hæmophilic blood. Fibrinogen is present in hæmophilic blood in normal amount and is readily coagulated. The amount and activity of calcium, prothrombin, and thrombokinase, in hæmophilic blood are normal. As regards the thrombin, there is in hæmophilic blood

a marked delay in its formation, though in the end as much is formed as in normal blood. This delay in the formation of thrombin in the shed blood, he maintains, is proportional to the retardation of coagulation, of which it is the cause, and is not due to deficiency of thrombokinase. There is no difference in the amount of antithrombin in normal and hæmophilic bloods. Professor D. A. Welsh of Sydney, in a note on the positive and negative phases of coagulation of blood in man, recalls the observation of Wooldridge, that injection of tissue extracts (thrombokinase) may cause intravascular clotting (positive phase). He holds that these phenomena may be reproduced in man in disease associated with cellular disintegration and leucocytosis. The white fibrin thrombi in the heart and pulmonary artery, which are common in pneumonia and leukæmia, are formed during life and represent the positive phase. They are a cause of death rather than the results of dying. Dr. M. A. Ruffer, of Alexandria, in a paper on arterial lesions found in Egyptian mummies, dating from 1580 B.C. to 525 A.D., records that the lesions of advanced atheroma are common and present the same features, on microscopical examination, as do present-day specimens. Among the suggested causes of atheroma, tobacco and syphilis may certainly be excluded, probably also alcohol, hard muscular work, and an excessive meat diet. Dr. T. R. Elliott of London and Mr. R. G. Armour of Toronto, in a paper on the development of the cortex in the human suprarenal gland and its condition in hemicephaly, maintain that the large size of the human suprarenal gland during fœtal life is due to the presence, between the cortex and medulla, of a mass of tissues which resembles cortex but does not contain any doubly-refracting fatty material. This "fœtal" cortex appears at an early stage and persists till birth. After birth it undergoes fatty change and rapidly degenerates until at the end of the first year it has usually disappeared. It has not been found in animals, and appears to be peculiar to man. It was absent in the small suprarenals of a case of hemicephaly. Professor H. Seidelin, of Merida, Mexico, under the title "Epidermoidal Metaplasia in Ureter and Pelvis of Kidney," records the occurrence of stratified squamous epithelium in the pelvis and ureter, asssociated with numerous small calculi and ulceration. Dr. A. G. Anderson of Aberdeen describes a case of psammo-carcinoma of the pancreas. This was a tumour arising in the head of the pancreas, with a well-marked alveolar structure and showing numerous calcareous nodules made up of concentric layers. These psammoma bodies were present in the neighbouring glands, but not in the metastatic growths in the liver and lung, and arose apparently by degeneration of the carcinoma cells. Dr. Carey Coombs of Bristol, in an article on the microscopic or "submiliary" nodules of active rheumatic carditis, states that active cardiac rheumatism is constantly associated with the presence of small inflammatory foci in the muscle and serous membranes. These foci consist of fibrin, lymphocytes, and characteristic large cells which are often multinucleated. They are not found in other forms of infective carditis, and appear to be characteristic of rheumatic endocarditis and pericarditis. They are most abundant in the left ventricle and are rare in the auricles. In structure they appear to be identical with the subcutaneous rheumatic nodules. Dr. J. O. W. Barratt of Liverpool, in "The Modelling of Mitotic Forms," shows how accurate and instructive models of the chromosomes in dividing cells may be made by making plans of the dividing nucleus in the successive planes formed by using the fine adjustment of the microscope. From these, wax models magnified 12,000 times are prepared and mounted on a wire frame; from these, again, permanent wooden models are constructed. Professor I. Walker Hall of Bristol gives a short account of some valuable observations on the bone marrow of the humerus made by the late Dr. F. F. Leighton, who classified the bone marrow of 63 cases under seven headings according to their naked-eye appearances—appearances which accorded well in almost every case with definite microscopical "findings."

New Inventions.

"NESTED" UTERINE DILATORS.

THE accompanying woodcut well illustrates a new form of uterine dilator which has been made for me by Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W. The set is so arranged that the smaller sizes telescope into the larger instruments, with the result that when "nested" the 21 dilators form three pieces with accompanying handles. The main objections to all dilators which have hitherto been made on this principle are their great weight and considerable bulk. The present set of "nested" dilators, however, is



eminently portable and comparatively light. In actual practice I find one handle sufficient, since when one size is inserted the handle is detached and rapidly fitted to the next number, and the smaller instrument withdrawn as the larger one is ready to insert. The principle on which the handle is fitted or detached is simple and rapid, and when the handle is adapted for insertion its stability and mechanical advantage are superior to those of the double-ended instrument.

BRYDEN GLENDINING, M.B., M.S. Durh., F.R.C.S. Eng.
Devonshire-place, W.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Killian of Freiburg, whose name is well known in connexion with bronchoscopy, has been appointed to the chair of Laryngology, in succession to Dr. Fraenkel. Dr. Th. Weil of Charlottenburg, author of many works on hygiene and technology, has been granted the title of Professor.—*Bordeaux:* Dr. Pachon, *agrégé*, has been appointed Professor of Physiology, in succession to Dr. Jolyet.—*Breslau:* Dr. Richard Stumpf of Königsberg has been appointed First Assistant in the Pathological Institute, in succession to Dr. Winkler who goes to Posen. Dr. Hermann Küster has been recognised as *privat-docent* of Midwifery and Gynæcology, and Dr. Karl Fritsch as *privat-docent* of Surgery.—*Cracow:* Dr. Sigismund Radlinsky, Assistant to Professor Kader has been recognised as *privat-docent* of Surgery.—*Erlangen:* Dr. von Liebermann has been recognised as *privat-docent* of Physiology.—*Gratz:* Dr. Karl Potpeschnig has been recognised as *privat-docent* of Children's Diseases.—*Montpellier:* Dr. Vires, *agrégé*, has been appointed Professor of Therapeutics and Materia Medica, in succession to Dr. Hamelin.—*Munich:* Dr. Hugo Kaemmerer has been recognised as *privat-docent* of Medicine.—*Paris:* Dr. Paul Teissier, *agrégé*, has been appointed Professor of Internal Pathology in succession to Dr. Dejerine. Dr. Letulle, *agrégé*, has been appointed to the chair of the History of Medicine and Surgery, in succession to Dr. Chauffard. Dr. Weiss, *agrégé*, has been appointed to the chair of Medical Physics, in succession to Dr. Gariel.

THE

BRITISH MEDICAL ASSOCIATION.

SEVENTY-NINTH ANNUAL MEETING IN BIRMINGHAM.

THE SECTIONS.

MEDICINE.

THURSDAY, JULY 27TH.

President, Dr. A. H. CARTER (Birmingham).

Dr. W. HALE WHITE (London) opened a discussion on

Obscure Cases of Fever without Physical Signs.

He pointed out that as means of investigation became more numerous the cases in which we cannot explain the cause of pyrexia would be fewer. For example, the X rays now helped us to recognise deep seated pus, and an agglutination reaction taught us to detect typhoid fever in those in whom the cause of the pyrexia might formerly have been overlooked. Mouth temperatures might be misleading, since if the patient had been breathing cold air the thermometer would register too low, if there had been much exertion it would register higher than the disease warranted. Bardswell and Chapman had recently shown that a normal individual walking for one hour at four miles an hour raised his rectal temperature to 100·6° F., walking for one hour at six miles an hour he raised it to 103° F. Sometimes the power of the body to maintain its temperature fairly constant irrespective of that of the surrounding air broke down, and then the patient had a sunstroke. This was the best example of pyrexia without physical signs. The influence of external temperature was shown in the fact that the temperature of fevered patients was higher in the hot months than in the cool. It was well known that the majority of cases of rheumatic hyperpyrexia occurred in the months of June, July, August, and September, and Dr. J. H. Bryant had shown that this was also true of most cases of hyperpyrexia from other causes. The younger the patient, the more easily was the thermotaxic mechanism put out of gear; therefore, in infants, the temperature was likely to be raised by very slight causes. Certain chemical bodies were sometimes the cause of pyrexia, and belladonna, cocaine, and β-tetrahydro-naphthylamine were mentioned in illustration. Dr. Hale White referred to some experiments done in conjunction with Dr. J. Fawcett as to the results of injecting the last-named drug into rabbits. In one the temperature rose 9·9° F. The drug probably acted by increasing the production of heat. Excess of carbohydrate food could sometimes lead to pyrexia, and, in illustration, Dr Hale White referred to a case published by Dr. H. Davy,[1] a former President of the Association, who had pointed out that carbohydrate fever must always be thought of in children who have those frequent attacks of pyrexia which were formerly called febricula and are now often erroneously said to be influenza. Fever due to some abnormal body in the intestines might be quite unsuspected until examination of the stools showed the presence of blood and mucus in them. Pyrexia due to disorders of the nervous system was next referred to. Fracture of the spine, especially if in the cervical region, and damage to certain parts of the brain, especially the corpus striatum, would lead to pyrexia. Dr. Hale White described the results of his experiments, showing that damage to the corpus striatum in rabbits produced considerable pyrexia. The importance of the central nervous system in relation to pyrexia was well shown in the study of hyperpyrexia. Dr. J. H. Bryant found hyperpyrexia in 10 out of 258 cases of fractured skull. Dr. Hale White had seen the temperature rise to 107·4° F. in cerebral hæmorrhage, to 107° in cerebral softening, to 108° in cerebral tumour and in delirium tremens, to 108·4° in chorea, and to 109·1° in convulsions. All such cases might be said to be cases of pyrexia without physical signs, and the explanation in all probability was that the disease of the brain had thoroughly upset the thermotaxic mechanism. Cases of hysterical pyrexia were next considered. The possibility of fraud in these cases was mentioned and illustrated by referring to the case of a nurse whose axillary temperature was stated to be 110°, the explanation being that the patient had heated up the axilla by a very hot indiarubber hot-water bottle. Her rectal temperature proved to be normal. Dr. Hale White was of opinion that a survey of published cases showed that some were genuine, and suggested that just as in hysterical paralysis or hysterical convulsions the cerebral motor mechanism had gone mad, so in hysterical pyrexia the cerebral heat mechanism had gone mad. He then gave details of two cases of hysterical pyrexia which he had observed. The importance of the examination of the blood in any case in which the cause of the pyrexia is not obvious was then emphasised. An excess of polymorphonuclear cells would often indicate pus, but was of less clinical value than might be thought, since usually when there was a sufficient increase to confirm the suspicion of pus, this could be detected by other means. Moreover, a considerable quantity of pus might be present without any increase in the number of these cells, and in some diseases such as pneumonia they might be increased without suppuration being present. In some examples of pyrexia—e.g., enteric fever—a leucopenia was present. Sometimes the parasite causing pyrexia could be found in the blood—e.g., in malaria, blackwater fever, sleeping sickness, tick fever, relapsing fever, and filariasis. Again, bacteria might be found in the blood, as in malignant endocarditis. A Wassermann reaction or one of its many modifications might show whether an obscure fever was due to syphilis. The examination of the blood for agglutination reactions helped to a diagnosis in typhoid fever, paratyphoid fever, Malta fever, dysentery due to Shiga's bacillus, and glanders. Dr. Hale White discussed the limitations and fallacies of the agglutination test in enteric fever. He then referred to the estimation of the opsonic index as an aid to diagnosis, more especially when it is suspected that the pyrexia is due to the tubercle bacillus. The cases of obscure fever due to diseases of the blood were then illustrated by reference to pernicious anæmia, Hodgkin's disease, and acute lymphatic leukæmia. The fact that examination of the cerebro-spinal fluid will often yield positive evidence of meningitis before any optic neuritis is discernible was mentioned as of importance in the diagnosis of cases of obscure pyrexia. Dr. Hale White stated that it was probable that the nature of some cases of fever was overlooked when the explanation should be sought in the condition of the urine, which though perfectly free from albumin, blood, and casts might contain streptococci or bacillus coli, to which the fever was due. The most common cases of obscure pyrexia to be cleared up by examination of the urine were those which occurred in pregnancy. Before giving up any case as inexplicable the urine should always be examined bacteriologically. Forgetfulness of the fact that malignant disease may be the cause of pyrexia could lead to mistakes. As a rule the growth was one which was rapidly spreading and of considerable size, or there were many growths throughout the body. Dr. Hale White had several times known a large growth of the liver to be associated with pyrexia for many weeks. Cirrhosis of the liver might be a cause of pyrexia, as was pointed out by Carrington, and a so-called tropical liver might be seen in this country as a cause of fever. Pylephlebitis and inflammation in connexion with the biliary passages must also be remembered as possible causes. Dr. Hale White believed that mistakes were most often made about obscure pyrexia by failing to discover deep-seated pus, especially in that an empyema after pneumonia was regarded as chronic pneumonia or tuberculosis. Pus in connexion with the teeth, the antrum, and the cavities of the nose was often difficult to find, and so also was that of a small subdiaphragmatic abscess. A retro-pharyngeal abscess might be overlooked, and pyrexia after an operation thought to be caused by pneumonia might really be due to suppuration in connexion with the wound. Malignant endocarditis was perhaps the next commonest cause of difficulty, and the pitfalls in the diagnosis of this disease were discussed. Failure to examine the urine bacteriologically was probably the next most common cause of non-success. Next on the list of difficulties Dr. Hale White placed obscure pyrexia due to tuberculosis. He pointed out the importance of repeated examination of the sputum or urine in such cases and discussed the value of X ray examinations and of the tuberculin tests in this connexion. Enteric fever and paratyphoid fever must also not be forgotten.

Sir WILLIAM OSLER (Oxford) divided the causes of pyrexia

[1] THE LANCET, vol. ii., 1904, p. 882.

of obscure causation into three chief groups: (*a*) neurotic, (*b*) infectious, and (*c*) those due to obscure unrecognised tumours. The first group was not a large one. He referred especially to cases in fat children and in young people at puberty. In the second group unrecognised tuberculosis accounted for a good proportion. In latent tubercle there was often slight transient fever without physical signs. Tuberculous glands were not always detectable in children, and might cause fever lasting for weeks. Fever due to chronic septic endocarditis was another example to be included in this group. It might continue for months without observable physical signs, either cardiac or otherwise. A useful hint in regard to these cases was sometimes given by the appearance of ephemeral nodes on the fingers and toes like an urticarial wheal. Syphilis was also sometimes associated with fever of obscure origin. Gummata in the liver were often present in such cases. Colon bacillary infections of the urinary tract were then referred to, and their characters were outlined. Such conditions were common in pregnancy and during childhood. Vaccine treatment of these cases in his experience had not been very successful. In the tumour group of causes he referred to cases of Hodgkin's disease and to latent obscure sarcoma of the retroperitoneal tissues and liver.

Mr. E. C. HORT (London), after outlining his views as to the genesis of fever and to the doctrine of the unity of fever, which is based on the observation that in man fever follows cell destruction, proceeded to classify cases of fever under three headings: (1) Those cases due to absorption of foreign products; (2) those due to absorption of native products; and (3) unclassed fevers, a group which contains very few cases, such as the fever due to hysteria. In endeavouring to elucidate the cause of fever it was therefore necessary to eliminate one by one all possible causes of cell destruction, including the infections. He illustrated his remarks by a diagram and gave a table classifying fevers on the principles outlined.

Dr. E. HOBHOUSE (Brighton) in his remarks described a physiological fever in children due simply to ordinary metabolism being hastened. It was desirable to make prolonged observations in children. He believed that fever in syphilis was commoner than Dr. Hale White suggested, and it could occur in tertiary and hereditary conditions Cirrhosis of the liver might also cause disturbance of temperature. He also referred to latent tuberculosis, erythema nodosum, and bacilluria in children. He had not found vaccines successful in his experience of the last-named condition. Some cases of fever were not even explained after post-mortem examination.

Dr. W. J. TYSON (Folkestone) emphasised the importance of sex and age in regard to the question under discussion, conditions which he thought had not received sufficient notice by previous speakers. The temperature in the female was, as a rule, higher in disease than that of the male, perhaps by a half to one degree. In children the temperature was considerably higher than in the adult and was raised by comparatively slight means. He alluded to the effects of indigestion of various kinds of food in children.

Dr. C. A. HAWTHORNE (London) said he thought the field of pyrexia had been so thoroughly explored in the discussion that it would be difficult to imagine "unexplained pyrexia" as an appropriate subject for the Section to consider for many years to come. One more precaution might be added to those mentioned by Dr. Hale White—namely, the necessity for the use of a thermometer of guaranteed accuracy; this, of course, applied to subfebrile rather than to severe febrile temperatures. He put in a plea for the recognition of rheumatism as among the possible causes of pyrexia occurring apart from physical signs or other objective evidences of local disease. No doubt in many cases of rheumatic fever there was so close a correspondence between the extent and severity of the polyarthritis, on the one hand, and the height of the temperature record, on the other, that it was common to accept the view that the relationship between the two was that of cause and effect. But manifestly it was quite consistent with the facts to hold that both events, the pyrexia and the arthritis, were results of a common cause, and if this were granted it must be recognised that theoretically at all events the one might occur apart from the other. Further, it was noteworthy that unexplained pyrexia was more common in children than in adults, and especially in "neurotic" children. But it was in children particularly that rheumatism tended to assume a non-articular form, and children with a rheumatic inheritance were prone to be "neurotic." It seemed possible, therefore, that fever might, at least in children, sometimes be the sole evidence of rheumatism.

Dr. T. STACEY WILSON (Birmingham) was of opinion that rheumatism was not essentially a joint disease. Certain organisms found their final nidus in the tissues and fluids of joints where the alkalinity of the fluids was lessened. The effect of the salicylates in removing this condition might account for their efficacy in rheumatism. He also mentioned rat-bite fever and gastric ulcer as examples of obscure pyrexia.

Dr. R. D. RUDOLF (Toronto) drew attention to the question of the level of the normal temperature when taken in the ordinary way and referred to the statement of Wunderlich that the normal levels lay between 97·2° and 98 8°. In some observations upon a number of students Dr. Rudolf had found that the average temperature in the morning was 97·4° and in the evening 97·6°.

Dr. C. H. MELLAND (Manchester) expressed his desire merely to underline a few of the points which Dr. Hale White had dealt with in his very exhaustive paper. It was a very common error to diagnose malaria in any obscure case of fever if the patient *at any time of his life* had ever had malaria or lived in a malarial country. Acute leucocythæmia was another cause of obscure fever which he believed to be more common that was usually recognised. It sometimes occurred without any enlargement of lymphatic glands or of spleen to draw attention to it, and though an examination of the blood should demonstrate the nature of the fever it was not uncommonly omitted. And, indeed, in some cases, though it might sound paradoxical, there was no increase in the number of leucocytes, at any rate until the very last stage of the disease. With regard to ulcerative endocarditis, Dr. Melland suggested that during the last ten years this disease had to a large extent changed in type. Instead of being an acute disease running its course to a fatal ending in a few weeks and with well-marked signs of cardiac trouble, it had become a very chronic febrile affection, lasting many weeks or months, with constant or recurrent periods of infection, but often with very few symptoms or physical signs to draw attention to the heart.

Dr. WILLIAM HUNTER (London) would distinguish between the disease and the fever accompanying it. He divided the causes of fever into two main groups: (1) the non-infective and (2) the infective, the latter group being subdivided into specific and non-specific. Any part of the alimentary tract might become the source of infection.

Dr. HALE WHITE replied.

SURGERY.

THURSDAY, JULY 27TH.

President, Sir THOMAS F. CHAVASSE (Birmingham).

Mr. H. ALEXIS THOMSON (Edinburgh) opened a discussion on

The Technique of Wound Treatment.

He commenced by saying that surgeons are all agreed that it is essential to exclude micro-organisms from wounds, but the methods to be employed are still open to discussion. Different surgeons showed more uniformity in the results they obtain than might have been expected from the diversity of methods. The thorough carrying out of any method and the personal factor are of the chief importance. There is no such thing as an aseptic method; it is the result which should be aseptic. In comparing different methods it is very desirable that we should trust not to general impressions but to exact statistics of large numbers of cases. As to the means of sterilisation, they are more often wanting in efficacy than is usually thought. Even when sterilisation of dressings by heat is employed, it is desirable to employ one of the capsules devised for the purpose, which can show that the temperature in the middle of the dressing has been sufficiently high. If sepsis should occur during the operation, it is necessary either to return the instruments to the steriliser or to keep them in an antiseptic solution. For the sterilisation of catgut we have better methods than formerly, but it must not be forgotten that iodised catgut causes more exudation from the tissue than does simple catgut, and drainage may be needed. It is a good test of the thoroughness of a

surgeon's method if he can employ buried silk. As to the hands, there is a large consensus of opinion in favour of dehydration by alcohol, but it is very important that the surgeon should never allow his hands to become septic. The wearing of gloves is a personal matter; and it must not be forgotten that surgeons can obtain unsurpassed results without gloves. If a surgeon never uses gloves he must get his hands infected sometimes, while if he uses gloves only occasionally, as in septic cases, he will find them a great handicap. Some surgeons may be more dangerous with gloves than without them. It must be remembered that the use of gloves does not remove the necessity for the sterilisation of the hands. With regard to the skin of the patient, dehydration by alcohol is the most satisfactory method, and it acts not by killing the germs but by fixing them on the skin and so nullifying their action. The results of the use of alcohol are equal to those of any other method. The use of iodine for preparing the skin of the patient has at present a great popularity, but if it is employed it is essential that the skin should not be washed just before. Iodine is a more reliable steriliser of the skin than is alcohol alone, though Kocher does not think so. For children the iodine should be used of less strength than for adults, and it should be applied only before the operation, as its excessive use may cause eczema. In adults the iodine should be employed both before and after the operation.

Mr. HERBERT J. PATERSON (London) claimed that for the sterilisation of instruments all surgeons agree as to the value of boiling. During the operation it is better that the instruments should lie in an antiseptic solution, for if they lie in sterile water the water is almost always septic within ten minutes. If catgut is to be properly sterilised it must not be allowed to come in contact with water before it is prepared. Gloves should be sterilised dry, for if they are put on wet the hands are always septic by the end of the operation, and if a puncture of the glove should occur it may cause contamination. For sterilisation of the patient's skin a solution of iodine is the most satisfactory. The best test of the sterile nature of the skin is its condition at the end of the operation and not at the beginning. Out of 22 cases treated with iodine solution only one showed signs of sepsis at the end of the operation.

Mr. G. P. NEWBOLT (Liverpool) considered that the use of gloves became natural to a surgeon after a little use; and he employs them always, except for enucleation of the prostate. He has noticed that those surgeons who do not wear gloves employ drainage more than those who do wear gloves. He considered it to be a mistake to operate, except in an emergency, on a patient the day after admission to the hospital, especially when the operation is on the mouth or rectum, where much preliminary cleansing is advisable. He always performs a preliminary tracheotomy in mouth cases, and he never has septic pneumonia. In painting the patient's skin he uses equal parts of the liniment and tincture of iodine, and he is satisfied with the results. As to whether the skin is really aseptic or not he does not care, as it is of no practical importance. He has met with two cases of post-operative tetanus, but he was unable to find any cause. In the sterilisation of the knife boiling in oil gives good results, but it is an expensive method.

Mr. C. A. LEEDHAM GREEN (Birmingham) contributed to the discussion by reading a paper on

An Inquiry into the Value of Sterilisation of the Skin by Iodine.

Little experimental work has been done to test the claims which have been made for iodine as a steriliser of the skin. In estimating the value of any antiseptic it is essential that the antiseptic be neutralised before any attempt at culture be made. Cultural experiments were made with small portions of ligature silk and glass beads infected with various organisms. Alcohol of 70 per cent. strength has more antiseptic power than alcohol of any other strength. Tincture of iodine proved to have the greatest bactericidal power when prepared with 70 per cent. alcohol, and experiment showed that this is not due, as Kutscher claims, entirely to the alcohol, the iodine being a superfluous ingredient. Comparative tests with tincture of iodine (70 per cent. spirit), plain alcohol (70 per cent.), and a watery solution of iodine of the same strength showed that whilst the watery solution of iodine possesses decided germicidal properties, it was less potent than the 70 per cent. alcohol, which in its turn was inferior to the tincture, and this was true even with resistant microbes. Further, it was shown that an alcoholic solution of perchloride of mercury of 1 in 1000 of 70 per cent. alcohol was superior in bactericidal power to the tincture of iodine. Experiments were also made upon the skin, and it was proved that the ordinary preliminary washing of the skin with soap and water is not merely unnecessary but actually harmful; for it does not materially lessen the number of microbes, and by macerating the epidermis it hinders the penetration of the iodine or other alcoholic solution. The question was then examined whether iodine has an exceptional power of penetrating and hardening the epidermis. The penetration is not greater than with other alcoholic solutions of a like strength and the hardening of the epithelium is lost in the presence of blood or albuminous fluids. The alcohol is the chief factor in the hardening, and this hardening is of little value except in short operations. Comparative practical tests on the skin with plain alcohol, tincture of iodine, and sublimate alcohol showed the marked superiority of the two last named, which proved to be powerful skin disinfectants, even after special contamination. A true sterility was never obtained, but both methods always greatly reduced the infectivity of the area. Neither of the two methods can be said in any way to guarantee sterility, for the skin which had proved to be practically sterile directly after the process of disinfection gradually became more and more infective as under the imbibition of fluid the hardened epithelium became loosened. Sublimate alcohol has given the better results, there was a slight superiority even when it was merely painted on the skin, but when it was freely rubbed on, as in the usual method of alcohol disinfection, the superiority was much more marked.

Professor C. F. A. KOCH (Groningen) expressed himself on the whole in agreement with those who had spoken. For two years he used tincture of iodine with good results, but the skin was not aseptic. Very good results in accidental wounds and in compound fractures were obtained by the application of balsam of Peru; the wound may do well even when the skin is very septic; the balsam is simply poured into the wound and it heals up without any real sepsis. He considered it a point of importance that wounds should not be dressed too often. He does not use gloves and yet he does not find it necessary to drain more than those who wear gloves.

Mr. T. S. ELLIS (Gloucester) dealt with the treatment of wounds as wounds. He described a case of very severe burn of the neck and ear, which he had treated by daily pulling of the skin at the lower part of the wound in a direction up and out. When the wound had healed the lower part of the scar was soft and non-adherent, while the untouched upper portion of the scar was firmly fixed and heaped up with keloid. Every amputation stump should be persistently moved to keep the skin supple. Sheet rubber with a rough surface on both sides made the movement of the skin easy and painless.

Mr. C. W. CATHCART (Edinburgh) has the patient prepared the night before the operation. The skin is washed, shaved, and dehydrated with alcohol. In his operations he employs what is often called old-fashioned Listerism. The biological effect of iodine on the skin has not been studied. It can be seen that the skin is abnormally vascular, and it is a question whether the effect is not due to the hyperæmia. For the preparation of catgut, he steeps it in a solution of iodine, made by dissolving one part of iodine in 15 parts of proof spirit; and the catgut so prepared is excellent, it does not rot, and it does not cause an undue amount of effusion. For granulating wounds dry dressings are not good, and packing a sinus every day does definite harm.

Dr. J. M. ELDER (Montreal) employs iodine sterilisation of the skin. It produces hyperæmia, and the hyperæmia is the real agent in producing asepsis. The increased supply of blood is not only in the skin itself, but also in the subcutaneous tissue. Balsam of Peru also gives rise to hyperæmia in wounds.

Mr. CUTHBERT S. WALLACE (London) pointed out that any method proposed must be judged by the results. In his practice the skin of the patient is well washed, the surgeon's hands are washed with soap and water, and then dry sterilised gloves are put on. The instruments are boiled and

put on a plain dry cloth, and if they are soiled during the operation they are dipped in sterilised water. As to the results he had obtained, in the last 600 "clean" cases he had only 4 per cent. in which any suppuration occurred.

Colonel HENRY SMITH, I.M.S., said that in the tropics it was necessary to have plenty of air, and therefore dust was very liable to be deposited on the wound and on the instruments. Therefore the instruments were kept in a solution of carbolic and the wound was flushed out at intervals with a solution of perchloride of mercury (1 in 2000). He uses no sponges and seldom drains the wound. Tetanus is one of the most serious complications of a wound, and it is specially liable to follow an operation for hernia. It may also follow an injection of quinine. The explanation is that whenever there is an anaerobic area tetanus bacilli from the blood will settle in it. The ligating of the stump of the sac produces an anaerobic area and the injection of the quinine has a similar effect. The solution of the difficulty is found in not tying but in suturing the sac of the hernia. It must be remembered that in India 50 per cent. of the men have tetanus bacilli in the blood. He uses catgut whenever he can. Want of dexterity has a very definite relation to sepsis, and he believes that all who aspire to success in surgery should have practice in hand work. He thought that not sufficient attention had been given to the after-effects of chloroform.

Mr. DOUGLAS DREW (London) said that as it was impossible to sterilise the skin, and as the skin was always septic at the end of an operation, it is necessary to protect the wound from the skin, and this can be done by clipping thick layers of gauze to the edges of the skin. In clean wounds he uses linen thread for sutures, but in septic wounds he uses catgut, though it is a little liable to give way. Drainage of a wound is unnecessary if the cavity in the wound can be completely obliterated.

Professor I. H. CAMERON (Toronto) declared himself an antiseptic surgeon. The use of iodine previous to operations is confined to emergency operations and to out-patient work. To prepare the skin of the patient it is merely washed with soap and water, while the instruments are sterilised in 1 in 20 carbolic and are then kept in 1 in 60. The dressing consists of gauze wrung out of a solution of carbolic acid in glycerine. As to the results in clean cases there is suppuration in less than 4 per cent. He rubs his hands with mustard and water and he has a high opinion of it. He employs ordinary marine sponges wrung out of 1 in 20 carbolic. He mentioned that he was the only surgeon who did not wear gloves at the hospital to which he was attached, and he claimed that his results were as good as the results of his colleagues. Dexterity in operating was merely a question of practice.

The PRESIDENT confessed that in most respects he followed the teaching of his teacher Lord Lister. He has used gloves for the last eight years, and the results were better than previously. He never uses a mask except when he suffers from nasal catarrh. In operations the surgeon has merely to follow out the precepts laid down by Lord Lister, "Be clean and be careful."

Radium in the Treatment of Malignant Disease.

Dr. RYERSON (Toronto) described two cases of malignant disease which had been treated successfully by Dr. Wickham of Paris. In the first case a tumour appeared in the toe, and after the toe was removed it returned in the foot. Half the foot was amputated and then it appeared in the glands of Scarpa's triangle. Radium was applied and the tumour rapidly disappeared, but it reappeared in the foot, but here also radium caused the tumour to disappear. In the second case a sarcoma appeared in the muscles of the thigh, and after removal it recurred, but the application of radium was soon followed by the disappearance of the tumour. He considered that radium should be used both before and after an operation.

ANATOMY AND PHYSIOLOGY.

THURSDAY, JULY 27TH.

President, Professor THOMAS H. BRYCE (Glasgow).

The PRESIDENT in his opening speech welcomed the visitors, and expressed his deep regret at the absence, through ill-health, of Professor Peter Thompson of Birmingham. He expressed his pleasure that anatomists and physiologists were sitting in joint session, for the modern specialisation of their subjects along somewhat divergent lines had led to serious inconveniences, and a meeting on common ground was necessary at times to bring the two branches of study into harmony. Nothing but good could come from such a union, and it was possible that with proper coöperation a great deal of simplification could be brought about, with a corresponding reduction of the detail of teaching and curtailment of the already overburdened curriculum. As an example of the changes that might be brought about by harmonious working with the physiologist, the President alluded to the study of histology. Physiology of to-day had so many ramifications that the teaching of histology by physiologists was something of a burden, and the growing importance of embryology and of microscopic detail to the anatomist made the teaching of histology almost imperative in his department. The study of microscopic and macroscopic anatomy should now go hand-in-hand, for no anatomist could be equipped properly for any research work unless he be both an anatomist and a histologist. Professor Bryce echoed the sentiments of modern anatomy when he noted that every year brought the work of the anatomist more within the domain of the physiologist, and expressed his conviction that it was by the combined attack of the sister sciences that the great outstanding problems of the human economy were to be solved. It was by such conjoined meetings as these that the truths of vital importance to medical science were to be solved.

Dr. ALEXANDER HAIG (London) then read a paper entitled

Some Factors of the Circulation, admitting of Easy Measurement.

The factors studied were the capillary reflux, the blood pressure, the relation of these two to each other, the cardiac area, and the liver dulness. Dr. Haig dwelt especially upon the capillary reflux as a valuable clinical sign, and he demonstrated his instrument for estimating and comparing it. He discussed the well-known physiological principles which underlay this very ancient method of investigation of the circulation, and he departed from the generally accepted teaching only in regarding the varying amount of uric acid in the blood as responsible for the variations of the reflux.

Professor E. M. WACE CARLIER (Birmingham) and Professor RICHARD ANDERSON (Galway) joined in the discussion which followed Dr. Haig's paper.

Mr. D. P. D. WILKIE (Edinburgh) delivered a paper on, and gave an excellent demonstration of,

The Existence of Valves in the Gastric Veins of Man,

and he extended the scope of his work so as to include other tributaries of the portal venous system. The author commented on the strange fact that although the presence of valves had been noted from time to time in the history of anatomy, still the text-books almost unanimously adhered to the statement that the portal tributaries were valveless. These valves may be demonstrated by the arrest of injections, as Hochstetter first showed, or by pressing their contained blood, as demonstrated by the present author. The valves are more conspicuous and more competent in young children than in adults, and Mr. Wilkie found them present in 38 out of 40 stillborn infants and in some 60 per cent. of 50 adults examined. They are most numerous at the site of the junction of the omental tributaries of the epiploic veins, but they were also demonstrated on other branches of the gastric veins and on the veins of the large intestine. So far the author had been unable to demonstrate them on any of the veins of the small intestine. In lower animals, such as the cat and the dog, these valves are also present. Some very beautiful micro-photographic slides were shown, in one case illustrating competent valves in a woman of 50. The valves appeared to be bicuspid and their structure very delicate.

The PRESIDENT, Mr. J. E. S. FRAZER (London), Professor CARLIER and Professor ANDERSON joined in the discussion.

Dr. A. MACLENNAN (Glasgow) delivered a paper dealing with

The Action of the Ilio-psoas Muscle.

He reviewed in detail the statements from various authors concerning the movements brought about by contraction of the muscle, the general consensus of opinion in text-books being that an abduction and an outward rotation of the femur were produced. From a series of observations on the action of the muscle in women who had recently been delivered, and on whom examination was easy, Dr. MacLennan concluded that

the muscle produced an inward and not an outward rotation of the femur. This conclusion was strengthened by an anatomical investigation into the relations of the muscle to the bone. The author's findings were that the muscle produced (1) abduction, (2) inward rotation, and (3) flexion of the femur on the pelvis.

A general agreement with the author was expressed in the discussion which followed, and Mr. FRAZER drew attention to the precise attachment of the muscle to the lesser trochanter of the femur.

Dr. S. LEWIS GRAHAM (Birmingham) showed a very remarkable Skeleton obtained from a dissecting-room subject at Birmingham University some four years ago. The skeleton was that of a male, the subject of achondroplasia, whose age was 46 years, and whose total height was 4 feet 6 inches. The outstanding characters of this skeleton were noted and demonstrated, and the pathology of the underlying process and its relation to other well-known bony anomalies were discussed.—Much interest was aroused by this very curious set of bones, and in the discussion which followed Dr. DOUGLAS E. DERRY (London) mentioned a case which had recently come under his notice from an ancient Egyptian graveyard.—Dr. GRAHAM, in reply, instanced the wonderfully accurate representations which the Egyptians had left us of what were without doubt examples of achondroplastic dwarfs.

Professor ANDERSON read a paper entitled

On Variation with Special Reference to Muscle.

The author dealt with such subjects as the regenerated limbs of arthropods, and the adaptation of the individual bones in the carpus and tarsus of the elephant. The underlying laws of variation were considered, and a review was made of the various theories put forward. The variations of the human carpus and tarsus were considered, such outstanding anomalies as the os trigonum being discussed. The paper was an abstruse one, not admitting of brief summary, and it was not followed by any discussion.

Demonstration on Reconstruction Models of Ferret's Brain and Pharynx.

Miss RADFORD (Birmingham) exhibited her reconstructed models of the Brain and Pharynx of a Ferret Embryo. The embryo used for this study was 6 millimetres in total length and of a probable age of 19 days. Some 400 sections were made of the head region, and these were reconstructed with a magnification of 100. Three models were shown—one of the head, one of the brain, and one of the side of the neck and the pharynx. A demonstration of the leading points of these models was given, and many of the features displayed were of great embryological interest. Miss Radford received the congratulations of the meeting on her models, but no detailed discussion of the many points of interest raised by them was possible within the time limits of the session.

Dr. J. P. GOOD (Birmingham) showed two reconstructed models of the Head End of a Ferret Embryo of 8 millimetres. This embryo, which was one of the series got together by Professor Arthur Robinson, showed the presence of spina bifida, and the reconstructions were therefore of obvious interest in connexion with a very early stage in the development of this anomaly. Some 360 sections were cut, and two models were reconstructed with a magnification of 50. The more important normal anatomical features of these models were demonstrated, and special attention was called to the sites of the cranial flexures. It appeared that the development of the spina bifida had taken place at the site of an abnormal flexure, and Dr. Good suggested that the flexure was the cause of the development of the spina bifida, but what accounted for the production of this abnormal flexure he was unable to say.

In the discussion which followed, the PRESIDENT alluded to the interest of the association of an abnormal flexure with the production of a spina bifida, and he instanced those cases where an abnormal retroflexion of the embryo in the sacral region is associated with sacral spina bifida.

Mr. FRAZER and Professor ANDERSON also joined in the discussion.

Professor CARLIER read a paper entitled

Notes on Some Effects of Iso-osmotic Solutions of Certain Salts on Frog's Muscle.

The first part of the paper was concerned with the method of experiment and the description of the apparatus devised for studying the behaviour of frogs' muscles when immersed in iso-osmotic solutions of salts. The muscle under investigation was first stimulated in its undrugged condition and a record was taken of its contraction; 20 c.c. of the iso-osmotic solution was then poured into the specially constructed vessel in which the preparation was suspended, and fresh records were taken of its contraction on stimulation. Single break shocks were used in all cases for stimulation, and time records of the immersion were made. Some very beautiful tracings were handed to the meeting illustrating the effects produced, and elaborate tables were constructed to show the behaviour of the solutions employed. All solutions were found to produce some well-marked effect on the muscle, some solutions causing it to shorten markedly and some producing elongation. It was found that the sodium halogens of Group VII. followed the periodic law in all effects, their action becoming more marked with the increasing atomic weight; that the chlorides of Groups I. and II. did not follow the periodic law, or followed it in some effects only.

In the discussion which followed Dr. D. FRASER HARRIS (Birmingham) alluded to the importance of the method as a means of studying the effects of various solutions upon tissues.

Method of Strengthening Wax Plates.—Reconstructed Model of Ferret Embryo.

Dr. THOMAS YEATES (Birmingham) gave two demonstrations, of which the first was directed to call attention to some improvements in the method of strengthening the wax plates used for reconstruction models. Dr. Yeates showed specimens of all the plates used at the present day, as well as of the special type of plate with which he had been working recently. He criticised the various methods which had been employed to strengthen the wax plate, and enumerated the substances which had been used, and with which he had experimented. After trial of many substances Dr. Yeates had obtained the best results from the incorporation of thin sheets of celluloid within the plate. Such plates can be readily handled and possess the advantage that they may be bent without cracking. The samples handed to the meeting met with general approval. Dr. Yeates's second demonstration was on a series of reconstruction models of a ferret embryo of a maximum possible age of 15 days. The embryo was cut in utero, and it showed a remarkable number of points of interest and novelty in connexion with the early stages of the union of the embryo and the uterine wall.—The amount of detail demonstrated by Dr. Yeates baffled any minute discussion, but the PRESIDENT and Mr. FRAZER raised some additional points of interest which the models made clear.

DISEASES OF CHILDREN.

THURSDAY, JULY 27TH.

President, Dr. OTTO J. KAUFFMANN (Birmingham).

Dr. SAMUEL WEST (London) opened a discussion on

The Diagnosis and Treatment of Chronic Pulmonary Affections of Children.

He said that tuberculous pulmonary affections in children were for the most part acute, appearing as acute miliary tuberculosis and acute caseating pneumonia. The chronic lesions indicated by the term phthisis were very rare before the age of five years, and the same remark applied to hæmoptysis. Chronic tuberculous pleurisy was rare compared with the frequency of chronic tuberculous peritonitis, which was remarkable considering the close connexion between the two serous membranes and the very thin partition between them. Tuberculous enlargement of the bronchial and mediastinal glands was a condition of great interest and importance, though they rarely led to pulmonary lesions, unless they perforated a bronchus and set up acute aspiration broncho-pneumonia. In many cases wrongly diagnosed and treated as asthma the symptoms were in reality due to pressure on the trachea by these enlarged glands. Dr. West related an interesting case in illustration. There were several different kinds of emphysema common in childhood, including interstitial emphysema and the transitory over-distension of the lung which resulted from violent coughing, as in whooping-cough, and the collateral emphysema which developed round the patches of collapse in broncho-pneumonia, which often appeared and disappeared

in a remarkable way. True large-lunged emphysema as it occurred in the adult was rare in the child. Collapse of the lung was one of the most interesting conditions met with in childhood, as it was one of the commonest complications of bronchitis and broncho-pneumonia. It was largely due to feeble muscular power and to the want of rigidity of the chest walls. Bronchiectasis in the chronic form was associated with fibrosis of the lung. The peculiar condition described as "turtle lung" was often preceded by a febrile attack resembling pneumonia, to which it was referred, but intercurrent febrile attacks were common enough in bronchiectasis. The treatment of the chronic pulmonary affections of childhood must be on the same general lines as in the adult.

Dr. H. VOGT (Strasburg) said that it was a well-known clinical fact that certain cases of broncho-pneumonia, especially those due to measles and whooping-cough, had a special tendency to run a prolonged course, and that the symptoms were very liable to recur after the disease had apparently subsided. Each new attack brought with it danger, which was greater the oftener it was repeated. The position of predilection of the disease was the left lower lobe posteriorly and laterally. He believed that the pulmonary diseases caused by the influenza bacillus showed a more marked tendency to chronicity than any others.

Dr. J. E. H. SAWYER (Birmingham) laid stress upon the extreme rarity of chronic tuberculosis of the lungs in children, more especially on account of the misleading reports of school inspectors, in which this affection was diagnosed in from 3 to 60 per 1000 of all children treated. In his examination of 10,000 children he had only diagnosed phthisis of the adult type in 11 cases.

Dr. W. R. JORDAN (Birmingham) agreed with Dr. Sawyer's remarks, and drew attention to the importance of the pharynx and naso-pharynx in the production of the frequent coughs of childhood.

Dr. D. BARTY KING (London) thought that pulmonary tuberculosis occurred in from 3 to 5 per 1000 in London school children aged from 8 to 12, and that latent tuberculosis existed somewhere in many others.

Dr. N. C. HARING (Manchester) recommended swabbing of the larynx or trachea in these cases as a means of obtaining tubercle-laden mucus when cough and sputum were absent.

Professor STOELTZNER (Halle) advocated the use of fibrolysin in the chronic fibrotic pulmonary diseases of children.

Dr. D. STANLEY (Birmingham) considered that a number of the cases of so-called "chronic bronchitis" in children were due to a chronic adenoid hypertrophy, not in the pharynx so much as in the larynx and bronchi. These, he believed, were the patients so often wrongly diagnosed as tuberculous.

Dr. C. P. LAPAGE (Manchester) considered that phthisis was not very rare in children, especially in older children. Probably the bronchial glands were often the seat of primary infection, and the disease spread from them to the lungs.

Dr. ELIZABETH J. MOFFETT (Stafford) said that in examining school children some 15 to 20 per cent. were found with impaired notes on percussion either at the apices or bases, or both. She believed that many of these children developed phthisis later, but many cases cleared up when adenoids were removed.

Dr. W. EWART (London) agreed with Dr. Moffett's conclusion that local impairment of the percussion note was not always due to tuberculosis, but was in children frequently the late result of rickets, which caused imperfect expansion of parts of the thorax. In the treatment of bronchiectasis he recommended the systematic use of the "infant exerciser" which he had devised, which acted by emptying the sacculations and expanding the lung.

Dr. A. E. NAISH (Sheffield) agreed that chronic tuberculosis in children of school age was uncommon, though enlarged mediastinal glands were fairly frequent.

Dr. E. C. MYOTT (Newcastle) held that the majority of children who suffered from chronic cough without physical signs were mouth-breathers.

Dr. WEST replied to the remarks of the various speakers.

Dr. VOGT read a paper on

Disturbances Arising from Milk Feeding in Children after the First Year.

He thought it was not generally known that overfeeding with milk might be injurious to infants, even though the milk was uncontaminated by micro-organisms and irreproachable in quality. There was a definite group of children who were specially liable to disease from overfeeding with milk—namely, those who suffered from the constitutional abnormality described by Professor Czerny under the name of "exudative diathesis." This continued for some time even during later childhood. In this condition there was a pronounced susceptibility of the skin and mucous membranes of the body, resulting in different forms of eczema, as well as catarrhal affections of the respiratory and digestive organs. In these cases milk diet should be greatly restricted, and during the second year small quantities of finely minced meat should be given instead of milk. It was generally supposed that breast-fed infants were protected against rickets, but in his opinion this was a mistake, as children who inherited a disposition to rickets might suffer severely even though fed on breast milk. He also believed that children who had excessive milk feeding were more susceptible to infection than normal children. A third group of diseases directly affected by milk diet was the group of anæmias. Children fed on an exclusively milk diet up to the end of the first year, and even during the second year or longer, almost invariably showed a pronounced pallor. There was a diminution of red corpuscles and of hæmoglobin, but usually no increase of white cells. In these cases it was necessary to diminish the amount of milk and replace it by vegetable food and meat. Constipation also was caused by an excessive milk diet. In conclusion, Dr. Vogt maintained that the long retained dogmatical belief of the medical profession that milk was not only the ideal food for infants, but for every age and every ailment must be abandoned.

Dr. EWART referred to the value of whey as a temporary measure of dieting in infantile milk dyspepsia.

Dr. STOELTZNER quite agreed with Dr. Vogt about the clinical facts and the treatment in these cases.

Dr. R. B. MCVITTIE (Dublin) agreed as to the dangers of excessive quantities of milk, but thought that much of the evils were due to chemical and physiological changes produced by excessive heat in pasteurisation.

Dr. VOGT, in reply, said that he had found no difference between sterilised and unsterilised milk in the feeding of infants and children.

Mr. D. C. L. FITZWILLIAMS (London) read a paper on

Nervous Influence in the Causation of Angeiomata,

based upon notes of 700 cases which he had himself observed. His conclusions from his investigations were: (1) that females were affected more frequently than males; (2) that nævi were almost always present at birth and only comparatively few appeared at a later date, spider marks and deeply seated nævi being the chief exceptions to this rule; (3) that nævi most usually started on the surface and less frequently in the deeper structures; and (4) that their extension and growth were intimately connected with the nerve-supply of the part affected.

ELECTROTHERAPEUTICS AND RADIOLOGY.

THURSDAY, JULY 27TH.

President, Dr. HUGH WALSHAM (London).

The proceedings opened with a paper by Sir VICTOR HORSLEY (London) and Dr. N. S. FINZI (London) on

The Action of Filtered Radium Rays Applied Directly to the Brain,

which was read by Dr. Finzi. The following is an abstract. In the literature on the action of radium rays on the brain Danysz's was the first communication and Obersteiner's and Alquier and Faure-Beaulieu's the most important work. Except for an experiment of Danysz, in which the tube was laid outside the bony canal of the spinal column, these all used external applications, most used toxic doses, and Alquier and Faure-Beaulieu, the only ones who used filters, only employed 1/10th and 2/10th mm. of lead. In the present experiments a platinum tube ½ mm. thick containing radium carbonate, having, according to Rutherford's standard, a content of 27·7 mg. of metallic radium, was used, and was by means of a trephining operation laid directly on the pia mater over the pre- and post-central gyri of three monkeys. In the third monkey a tube containing nearly double the amount of radium was placed on the opposite side, and at a subsequent experiment on the occipital lobe. The time the tubes were left on varied from

2½ to 4 hours, and the animals were killed at periods of 16, 26, 31, and 45 days after the experiments. In none of the animals was the slightest symptom exhibited even where large overdoses had been given. Histologically it was found that the meninges were infiltrated with blood, and that their vessels showed considerable proliferation of the endothelium which sometimes practically occluded the lumen. There was also a considerable formation of fibrous tissue which extended into the cortex and along the sulci. Small hæmorrhages were seen mostly in the first two layers, but in one animal extending as deeply as the fifth layer of the cortex, and it is noted that they are due to erythrocytes which have passed into the perivascular lymphatics and sometimes breaking through these into the surrounding neuroglia. There also occurred in the animal killed on the twenty-sixth day small collections of leucocytes at rare intervals in the first two layers of the cortex. Further, there occurred wedge-shaped thrombotic areas about a quarter of its depth in the cortex. The only change discovered in the nerve cells apart from these thrombotic areas was a condition of hyperchromatosis in the cells of the region of the cortex in which the hæmorrhages occurred. Examined by the Marchi method, there was some degeneration of the pyramidal fibres as well as some fibres in the brain proceeding from the hæmorrhagic areas.

Professor FARR (New Zealand) gave the results of some observations made on the effect of radio-active water on the development of fish. A large amount of the water used in New Zealand came from artesian wells, and it was observed in the hatcheries that ova placed close to the opening of one of the wells, particularly if the water was not agitated in any way, very soon died; but if placed a little distance from the well, and especially if the water flowed over a weir or was otherwise agitated, very few of them died; while among the survivors two conditions were recognised, the most frequent being protruding eyeballs—"pop-eye"—and the other being the development of a blue sac attached to the gill. These conditions tended to disappear when the fish were removed a considerable distance from the well. Examination of the water taken carefully from the mouth of the wells showed that the water was radio-active and that a gas closely resembling the emanation of radium could be collected from it. Professor Farr stated these facts as a contribution to the physical and biological aspects of radium; he was not in any way concerned with the medical applications of that substance.

Dr. F. HERNAMAN-JOHNSON (Bishop Auckland) and Mr. W. DEANE BUTCHER (Ealing) also made some remarks bearing on the subject.

In opening a discussion on

The Therapeutic Uses of Radium,

Mr. DEANE BUTCHER said that the time had come when it was possible to make a sane and sober judgment as to the utility of radium, and the cases which were amenable to radio-action treatment. The cases specially suitable were small circumscribed lesions of the skin. He protested against the practice of excising a portion of a doubtful growth for diagnostic purposes, since this defeated the very object of radium treatment—viz., the destruction of the neoplasm without opening the lymph channels. In extensive or deep-seated cancer the most hopeful procedure was to introduce the radium into the interior of the growth by a surgical operation or to introduce the radium ion itself by Hasel's electrolytic method. Mr. Deane Butcher alluded to the theory of immunisation by radio-vaccination as a possible explanation of the good effects of radium irradiation. With regard to measurement, he considered that the dose should be defined accurately by the weight of pure metallic radium contained in the specimen used. The prescription for radium irradiation should include weight of metallic radium, area of applicator, thickness of screen, and duration of irradiation. He alluded to the approaching opening of the Radium Institute, which would afford to poor and rich alike in this country an adequate supply of radium. He hoped that the new radio-active substance, meso-thorium, would perhaps partially replace radium, and at all events help to mitigate the present radium famine.

Dr. J. H. SEQUEIRA (London) gave a short account of his experience of the use of radium at the London Hospital and in his private practice. He had treated nearly 400 cases, and emphasised the fact that in the majority of early cases of rodent ulcer the results were admirable. The factors which militated against success were the involvement of cartilage and bone and the spread of the disease into the orbital cavity. He was accustomed to apply the radium in the form of sulphate spread upon metallic plates.

Dr. FINZI spoke of the great value of proper filtration in radiumtherapy, which had to be modified both as to material and thickness depending on the requirements of the case and other circumstances. He also referred to the pronounced action of the beta rays of radium in the production of fibrous tissue.

Mr. W. HOLDER (Hull) spoke of the good results obtained by the use of small quantities of radium in cases of malignant disease as well as other local conditions. He emphasised the danger of making the intervals between applications too short.

Dr. G. WILLIAM HILL (London) referred to the results obtained in œsophageal strictures, which were very encouraging up to the present. He also asked for some standardisation of dosage.

Mr. COLIN CAMPBELL (Southport) also bore testimony to the good results that were to be obtained from the use of small quantities of radium, and he quoted instances of its great value in tuberculous ulcerations, and particularly in pruritus.

The prominent feature of this discussion was the evidence brought forth as to the large amount of good work that could be done with small quantities of radium, even though it be not of the highest possible activity.

Professor J. K. A. WERTHEIM SALOMONSON (Amsterdam) described and showed

A Modified Form of Benoist's Penetrometer

for measuring the hardness of the X ray tube. It might perhaps be more accurately described as a modification of Wehnelt's, which it more closely resembles. The improvement consists in the provision of two wedge-shaped pieces of aluminium, inverted to each other, so that as one is moved over the other the whole of the aluminium within the field of vision is of even thickness for all degrees of penetration. The instrument is being made in this country by Messrs. Newton and Co.

Dr. REGINALD MORTON (London) read a paper to introduce a discussion on

The Present Position of the X Ray Treatment of Malignant Disease.

He considered that the present time was a very good one to take stock of our position in this respect, but in connexion therewith he felt there were several points that wanted clearing up, and upon these he particularly invited discussion. Assuming that our object is to destroy or otherwise remove the cancerous cells, how far beneath the surface is the X ray method capable of bringing this about? Owing to the fact that the therapeutic value of the rays fell off very rapidly as the penetration increased and from observation in other ways, he was of the opinion that this could not take place to any appreciable extent beyond one-half inch from the surface of the growth. He considered that it was only those rays which were stopped and absorbed by the tissues that produced any effect upon them. He regarded the introduction of filters as one of the most important events in the history of radiology. He considered the non-metallic filters the most useful for this particular class of work. In the matter of dosage he had tried different methods, but now favoured fairly liberal doses given at comparatively short intervals. Massive doses at intervals of a week or so had given very poor results. He also invited an expression of opinion as to the relative value of the method in sarcoma and in carcinoma. In his own experience cases of carcinoma had so largely predominated that he found it difficult to draw a comparison. It was impossible to say how any particular case would respond to X ray treatment, but cases of carcinoma did so more evenly than sarcoma and also more favourably, though among the latter class he had one of his most brilliant results. It was, however, always possible to tell after a few applications how the case was likely to respond to the method, and for this reason he considered a trial course of treatment advisable in all cases. Summing up, he stated that the influence of the method upon malignant disease was a most distinctly favourable one—pain was relieved, the rate of advance was

greatly reduced and even arrested for a time, ulceration and accompanying discharge were checked, life was prolonged, and the patient made more comfortable in nearly every way. Unfortunately, treatment by any form of radiation gave us no control over metastasis. If we were to make any decided progress we must meet this difficulty to some extent at least. With this in view he made a plea for a closer coöperation between the surgeon and the radiologist than had existed up to the present. Taking operable cases first, he advised that a massive dose of X rays should be given to the site of operation before the wound was closed—a perfectly feasible procedure—and further X ray treatment as soon as the patient could bear it, carried on at intervals for a year or more. With regard to cases usually declared to be inoperable, the surgeon should not wash his hands of the case, as is so frequently done, but should consider whether it is not possible to remove the more superficial parts so as to allow the rays to get more or less directly at the part that really matters—the advancing margin.

In the discussion that followed most of the speakers were in agreement with the main points raised in the paper.

Dr. FINZI was not so sure that radiations which were unabsorbed did not produce some effect on the cells by the mere act of passing through.

Professor WERTHEIM SALOMONSON considered that the results of the X ray treatment of malignant disease were not encouraging as a whole, but admitted that the more superficial cases at times did very well.

Mr. J. HALL-EDWARDS (Birmingham) considered that only in the most severe cases should massive doses be given, but in ordinary conditions he thought mild doses repeated daily or on alternate days gave superior results.

Dr. J. DELPRATT HARRIS (Exeter) related his experience with a case of sarcoma of the cheek which seemed to resist ordinary treatment and he decided to give a very massive dose. He administered the equivalent of 18 Sabouraud pastille doses, the sitting lasting nearly six hours. An aluminium screen, ½ mm. thick, was placed between the skin and the tube. The tumour rapidly shrank and gave every promise of doing well. No bad results were noticed from the massive dose.

Dr. W. IRONSIDE BRUCE (London) also gave his experiences with very massive doses of the X rays, and felt that the method gave promise of good results in this class of disease.

Dr. MORTON suitably replied.

Dr. IRONSIDE BRUCE read a paper on

Pyelography and the Use of Collargol in the Diagnosis of Diseases of the Urinary Tract.

He said that collargol forms a perfectly inert solution which is opaque to the X rays. In cases of suspected dilatation, for instance, of any part of the system this part is filled with the collargol solution and the part radiographed. The work had been done in conjunction with Mr. J. W. Thomson Walker, whose paper was published in THE LANCET of June 17th, 1911.

At the afternoon session Mr. W. ARMSTRONG (Buxton) reported the results of his treatment of over 600 cases by

Radium Water

by means of drinking, inhalation, and bathing; the two latter in conjunction with oxygen. He showed that the radium emanations were eliminated in order of quantity by the lungs, skin, and kidneys. He described the increased excretion and the greater amount of the body poisons carried off in the breath, perspiration, and urine; also the increased activity of the various digestive ferments, and the hastening of purin body metabolism, and of the excretion of uric acid. He gave examples of most satisfactory results in cases of gout, rheumatism, arthritis, neuritis, diabetes, Bright's disease, high blood pressure, and neurasthenia. Great stress was laid upon the value of the radium oxygen both in high arterial tension, insomnia, and skin trouble of nervous origin. Mr. Armstrong summed up as follows: (*a*) That the successful treatment of diseases by radium water demanded a high dosage; (*b*) that these large doses can be given without the least fear of ill-effect; and (*c*) that two points stood out as regards the value of this treatment: (1) the great increase in nerve strength and vitality; (2) the very considerable quantity of poisonous matter expelled from the body.

A Review of Radium Therapy.

Professor S. SAUBERMANN (Berlin) gave the section a fairly complete review of all the work which forms the basis of to-day's radiumtherapy for internal use, and went into some detail regarding the physical, chemical, biological, and physiological properties of the emanation. His purpose was to prove that there really exists a close connexion between the emanation and certain processes which take place within the human organism. A large number of tables and experiments which he mentioned suggested that a quantity of energy is developed by the atomic disintegration of radium into a series of decomposition products, and though the emanation itself is absolutely inert, its mere presence brings about chemical reactions which are otherwise inconceivable, or which would normally be greatly accelerated. From this is derived the conclusion that biological and physiological influences upon living cells and organisms must take place. Professor Saubermann stated the following as "biological facts with regard to radium emanation," giving the date of the research and the name of the observer:—

1903—The preparation of radio-active water by means of radium for biological research. (Saubermann.)
1904—Radium emanation (R.E.) increases autolytic fermentation. (Neuberg.)
1905—R.E. increases the activity of the peptic ferment. (Bergell and Bickell.)
R.E. increases the activity of the pancreatic ferment. (Braunstein and Bickell.)
1906—R.E. increases the activity of lactic acid fermentation. (Richet.)
1907—R.E. increases the peristaltic actions. (Deutelmoser and Saubermann.)
1908—R.E. increases the solubility of uric acid salts (urolytic fermentation). (Deutelmoser and Saubermann.)
R.E. increases the glycolytic fermentation. (Deutelmoser and Saubermann.)
1909—R.E. increases the activity of diastatic fermentation. (Edelstein.)
1910—R.E. penetrates the skin into the body. (Engelmann and Strassburg r.)
1911—R.E. effects leukopenia. (Noorden and Falta.)
R.E. increases the coagulability of the blood. (Lazarus, Saubermann, and Velden.)
R.E. penetrates every animal membrane and tissue.
R.E. acts by its disintegration products.
The co efficient of solubility in blood is 0·20. (Lazarus and Saubermann.)
The greater radio-active quality of mountain air plays an important part in human life. (Aschkinass and Kaspari.)
The radio-activity of the air is a matter of importance to the human organism. (Saake.)
In southerly winds (Sirocco, Samun), the physiological action of which is well marked, the radio-active capacity is exceptionally high. (Gockel, Aschkinass, and Kaspari.)
All increased radio-activity in mineral springs makes itself felt in the human organism, a physiological factor which cannot be ignored. (Bergell, Bickel, and Himstedt.)
The higher the emanation capacity of a given spring, the more striking are the physiological results. (Mache, Curie, and Laborde.)
Water rendered radio-active has a most unusual influence upon the human organism. (Bergell, Bickell, and Deutmann.)
Owing to inhalation of emanation in the galleries of the St. Joachimsthal pitchblende mines, where the air is radio-active, gout, rheumatism, and neuralgia do not occur. (Gottlieb, Kemen, and Deutwitz.)
Occurrence of bladder activity, increased diuresis, and exacerbation of pains in baths with radio-active water. (Neusser, Saake, and Wilke.)
R.E. has a favourable effect upon organic metabolism. (Deutelmoser, Saubermann, Silbergleit, and Kijokki.)
Importance of radium emanation in disturbed organic metabolism. (Krieg.)
Increase in the excretion of urea up to 34 per cent. and of uric acid up to 14 per cent. (Wilke.)
The cardiac blood pressure, diuresis, excretion of urea and uric acid are influenced. (Deutelmoser, Saubermann, and Krieg.)
R.E. lessens blood pressure and cardiac activity. (Deutelmoser and Saubermann.)
A certain percentage of radio-active electric ions in the air is absolutely necessary, especially for gouty and rheumatic patients. (Steffens and Grabley.)
R.E. has the power of keeping the uric acid compounds in their easily soluble forms. (Deutelmoser and Saubermann.)
R.E. acts both as a powerful nerve sedative and as a hypnotic. (Pollack and Dreuw.)

"If emanation will activate ferments, a very broad basis for a scientific therapy has been established," said Professor Saubermann, who considered that a normal secretion and mutual activation of ferments are indispensable to the synthesis of simple, classical compounds derived from nourishment. His clinical results so far obtained cover, he said, "as they logically should, the vast field of body metabolism, and have proved of great benefit in the treatment of gout, rheumatism, diabetes, nephritis, high blood tension, and other complaints of similar character, as shown by numerous leading authorities, such as Bergell, Lazarus, Schiff, Bickel, Peters, Sandmayer."

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

THURSDAY, JULY 27TH.

President, Mr. FRANK MARSH (Birmingham).

Mr. MACLEOD P. YEARSLEY (London) and Dr. HUGO FREY (Vienna) opened a discussion on

The Treatment of Chronic Adhesive Processes in the Middle Ear.

Mr. MACLEOD YEARSLEY said the magnitude of the subject necessitated limiting the conditions to be discussed to post-suppurative and post-catarrhal processes, to the exclusion of the labyrinthine capsule. Accuracy of diagnosis was important, and was dependent upon the careful consideration of three factors—namely, symptoms, results of physical examination, and evidences afforded by careful functional testing. Regular inflation of the ear was of value, and inflation from a catheter was to be preferred before that from an indiarubber bag on the grounds of cleanliness and also because the former method could be better controlled by the operator. The Valsalva method was to be deprecated. Nasal treatment was to be encouraged, especially with regard to abnormal conditions in the fossæ of Rosenmüller. Prophylaxis, he considered, would be the treatment of the future. Attention should also be paid to conditions outside the ear, such as pyorrhœa, intestinal toxæmia, and gouty tendencies. The use of thyroid extract in his experience had been attended with uniform failure, and the use of thiosinamin, or its derivative, fibrolysin, had been disappointing. Oto-massage was of value; he was in favour of short piston strokes and rapid vibrations. The operative methods of treatment included mobilisation of the malleus, incision of the posterior fold of the tympanic membrane, tenotomy of the tensor tympani and the stapedius muscles, exploratory tympanotomy, the division of adhesions, the removal of portion of the membrana tympani, and ossiculectomy. Some of these were useful. The value of ossiculectomy was doubtful; possibly the operation was unjustifiable. Whatever method of treatment, whether non-operative or operative, might be employed, a considerable number of cases remained unrelieved. For these, two courses were open—lip-reading, or the use of an artificial aid to hearing. As regards the latter, there was room for valuable research. There was much to be done in the investigation of the relative uses of electrical aid, such as the combination of telephone and microphone; but such investigation required the coöperation of the expert electrician and the otologist.

Dr. FREY spoke of the difficulties that had arisen from the loose terminology in present use. In a subject such as that they were dependent upon the experiences gained by others and the records of those experiences, hence the difficulty in classification and the confusions that had arisen. Such terms as chronic catarrh, dry catarrh, and chronic adhesive processes of the middle ear had been loosely used and interchanged. He pleaded for the distinction of oto-sclerosis from chronic adhesive processes and for more exact reports and better diagnosis by contributors to the literature. Dr. Frey gave a brief account of the etiology of the disease and discussed and compared the various methods of treatment under the following headings: prophylactic measures, local (mechanical and electrical) treatment, constitutional treatment, and operative measures. He urged the importance of inflation of the ear, inasmuch as even minute changes in the Eustachian tube could materially affect the hearing. He did not commend the injection of fluids into the Eustachian tube. A new method of treatment which he thought might ultimately be found to be of service in reducing the subjective noises was the use of light rays. Mobilisation of the stapes, he considered, was both dangerous and useless.

Dr. ANDREW WYLIE (London) referred to the hot-air method of treatment and exhibited an apparatus, which he had shown previously to the section when the Association met in Belfast, for producing hot air by means of the electric current. Since previously exhibiting the apparatus it had been simplified and reduced in bulk. The difficulty of controlling the heat occasioned by the hot air passing through a metal Eustachian catheter had been overcome by using a catheter made of vegetable matter.

Dr. W. JOBSON HORNE (London) pointed out that even in the worst of the cases of deafness under discussion there was a residuum of hearing, and it was important to encourage the patient to cultivate that residual hearing. Therefore one was justified in urging a course of treatment even in those which appeared to be the most hopeless cases. One indication for the treatment of nasal obstruction or narrowing was marked relief following the use of the nasal catheter; but should the use of the nasal catheter yield a negative result that was not, in his experience, evidence of nasal treatment being contra-indicated. Prophylaxis and special attention to the naso-pharynx in early life were strongly indicated. It was remarkable, in his experience, how the sudden onset of suppuration in the middle ear in a long-standing case of chronic dry non-suppurative catarrh would at times leave the patient with a marked improvement in the hearing. He considered that the multiplicity of remedies was in itself a blot upon their methods of treatment of that particular form of ear disease. He thought the time had come for more attention to be paid by themselves in coöperation with expert electricians to the manufacture and sale at reasonable prices of instruments to aid the hearing.

Dr. P. WATSON-WILLIAMS (Bristol) said that even modified success was of importance in the cases under discussion. Adenectomy must be undertaken not only for the relief of nasal obstruction, but also in cases without the adenoid facies for the relief of nasal and Eustachian catarrh. As regards the advisability of removing the drum and the malleus, if a perforation of the drum improved the hearing then he thought one would be encouraged in the operation.

Mr. H. F. MOLE (Bristol) spoke of his experience with fibrolysin, and was desirous of hearing which cases were to be selected for the mobilisation of an adherent malleus.

Mr. W. S. SYME (Glasgow) spoke in favour of extending nasal operative treatment, especially where a naso-pharnygitis existed. In all cases the condition of the internal ear must be previously taken into account. As regards fibrolysin, in cases of pure adhesive middle-ear catarrh he had met with no improvement, but in cases of post-suppurative conditions remarkable results had been obtained. In reading the reports upon school children he had been struck by the proportion of cases in which the diagnosis of enlarged tonsils had been made without any mention of adenoids. The natural inference was that the tonsils had been removed by the practitioners, and the more important factor, the adenoids, had not been removed. From the point of view of prophylaxis that was to be regretted.

Dr. L. H. PEGLER (London) supported the theory of a nerve influence helping in the operative nasal treatment of cases of deafness.

Dr. A. BRONNER (Bradford) argued that by preventing catarrh one would help in preventing the resulting contraction of tissues. The majority of people in this country had nasal catarrh once or twice or more often in the year. This he attributed to the sudden onset of fog and damp in the course of the night whilst sleeping with an open window, and he advised a return to the old-fashioned nightcap as a preventive. All elderly people who are deaf, he considered, should take iodide of potassium in small doses not for weeks or months but longer.

Dr. DAN MCKENZIE (London) pointed out that there were other means of making the tissues hyperæmic besides the hot-air treatment, such as Bier's method or the application of irritants to the drum. He suggested a wider rubber tube in Dr. Wylie's apparatus.

Mr. F. W. SYDENHAM (Walsall) recorded his experiences with the use of fibrolysin. He had observed improvement in 3 out of 12 cases in which he had used it. In one case suppuration inadvertently supervened and with great benefit to the patient's hearing power.

Mr. H. TILLEY (London) said that fibrolysin in his hands had been of no use whatever. The Eustachian catheter he regarded as a test or indication for nasal operative measures. If no improvement in hearing resulted from the use of the catheter, then he considered no benefit would be afforded to the hearing by nasal operation.

Dr. J. GIBB WISHART (Toronto) considered that even if the use of the catheter gave a negative result as regards the hearing, one would not be justified in sending away the patient without treatment if nasal catarrh or post-nasal catarrh existed.

Dr. H. J. DAVIS (London) supported nasal douching. He was in favour of Eustachian injections and the administration of iodide of potassium.

Mr. YEARSLEY and Dr. FREY replied.

The PRESIDENT summed up the discussion. From the opinions that had been expressed he gathered that the general view of the meeting was that if temporary improvement to the hearing could be obtained by inflating the middle ear then nasal treatment should be adopted, and even if not much improvement followed inflation, then nasal obstruction should be dealt with. The residuum of hearing should be cultivated, and, if possible, improved, and the patients encouraged to keep up their general health. Operative measures upon the ear itself appeared to stand very much where they were before.

Dr. JOBSON HORNE exhibited

A Simplified Insufflator for Use in the Treatment of Diseases of the Throat, Nose, and Ear.

The instrument consists of glass-tubes of various lengths, shapes, curves, and calibre to meet the requirements of the regions in which they were to be used. The distal end of the tubes is roughened on the inner surface for an inch or more. This roughening of the inner surface of the tube permits of the powder being retained *in situ*, and also of a known quantity of powder being used. The advantages claimed for this insufflator are: simplicity, cleanliness, simplicity of auto-insufflation, precise dosage, and cheapness. The instrument has been made by Mr. F. Rogers of Oxford-street.

MEDICAL SOCIOLOGY.

THURSDAY, JULY 27TH.

President, Dr. GEORGE REID (Stafford).

Hospital Reform in Relation to the National Insurance Bill

was the subject upon which distinguished speakers, medical and lay, addressed the Section at its second session. The question was dealt with both from the points of view of the medical staffs and of the governing bodies of hospitals, and there was evidently some difference of opinion as to whether hospitals will be wise in accepting grants-in-aid from the State in respect of insurance patients. Dr. GEORGE REID again presided, but the attendance was still disappointing—it was suggested because the Section had been "skied." The meeting-place was on one of the topmost floors of the University buildings.

Dr. LAURISTON E. SHAW (London), in a brief opening paper, asserted that the Insurance Bill must profoundly alter the position of the hospitals. Even if the Bill did not pass, the prominence given by its discussion to the unsatisfactory provision of medical treatment for large sections of the community must lead shortly to the institution of some alternative to the present chaotic jumble of indiscriminate charity, inadequately paid contract service, and a mutually unpopular Poor-law medical service. Assuming that the Bill would pass—modified, of course, in accordance with the strictly moderate demands of the medical profession—the hospitals would find there was still much work for them to do on a voluntary basis. The Bill provided only, except in the case of consumption, for ordinary domiciliary medical treatment. For other cases further provision of some sort must be forthcoming, and it seemed probable that, at any rate at the outset, it would be made by means of the voluntary hospitals. It had long been recognised that the attempt to combine the dual function of ministering to minor ailments, and at the same time dealing with cases requiring the highest resources of medical and surgical skill, had handicapped the development of the professional side of the hospital, while the avoidance of imposition and abuse in these conditions had become quite impossible. The provision of insurance for ordinary treatment for a large section of the present hospital *clientèle* should greatly simplify the selection of suitable cases. Inquiries into the economic position of the patient would be reduced in many cases to determining the status of the patient under the insurance scheme, and there would be *primâ facie* ground for insisting that the hospital should exercise its proper function of providing special medical service only. Dr. Shaw laid stress on the necessity from both professional and social points of view of dealing with the insured persons at the hospital on a consultative basis in coöperation with the insurance doctor. From the professional point of view it might well be regarded as a breach of medical etiquette for a member of the hospital staff, knowing that the insured person had definitely engaged a medical practitioner to attend him, to undertake his treatment except with the sanction of, and in coöperation with, that attendant. To deal entirely on independent lines with another man's patient, even in the sacred name of charity, could hardly be tolerated in the altered circumstances created by the Bill. From the social side the public, which had to maintain the insurance fund, was equally interested with the profession in securing coöperation between the insurance and hospital doctor. It would be obviously unfair and detrimental to the insurance service (Dr. Shaw went on) that the hospital should be in direct competition with it. The fact that hospital treatment was given by men who were consultants and usually charged private patients higher fees than the insurance doctor did, the glamour of the place, and the ritual observed in teaching students would, even if the actual service were inferior—instead of being as a rule, for suitable cases, superior—strongly impress the patient with its superiority. To avoid disaster systematic coöperation was essential. On the question of the nationalisation of hospitals Dr. Shaw said that while believing that in the interests of medical research and education the voluntary system should be maintained, he recognised that its continuance was imperilled. The transformation of voluntary hospitals into truly consultative institutions, taking no independent part in the treatment or investigation of disease, but coöperating always with institutions or private practitioners undertaking ordinary medical treatment, would provide them with a new lease of useful life, and would probably postpone indefinitely the nationalisation or municipalisation of that higher class of institution which was capable of adopting that line of professional work. Even if the hospitals did become nationalised, it would still be essential to define their relation to the insurance service. For the State to provide side by side an institutional and a domiciliary service, and to allow the patient to chose which he would use, would be a most unreasonable and unbusinesslike proceeding. Unless the voluntary hospitals would relinquish voluntarily all treatment such as was to be provided by the insurance scheme, and would coöperate with its officers in providing on consultative lines the additional special professional help which they were best fitted to provide, they would seriously handicap the insurance service and imperil their own future as independent institutions.

Mr. J. COURTNEY BUCHANAN (secretary of the Metropolitan Hospital) contributed a paper on

The Future of Voluntary Hospitals.

He urged that hospital managers should follow the wise course of the British Medical Association and set themselves to define beforehand the work their experience taught them they could do best. After touching on the effect of the Bill in drying up the sources whence hospitals derive their funds, Mr. Buchanan declared that the introduction of a system of charging insured patients was inevitable. In future hospitals would be forced to act solely in a consultative capacity towards the poorer classes. Trivial cases need no longer be treated at the hospitals; these would be seen by the insurance doctors. As he understood, the doctors would prefer to see the insured patients at some centre; these might be institutions conducted very much on the lines of provident dispensaries. These should be grouped around and be in touch with voluntary hospitals. School medical treatment might also be carried out in them. In his opinion it would be little short of a calamity if hospitals were subjected to any municipal control, but he could see no objection to hospitals being paid for work done for the insurance authorities, or even to State grants-in-aid for specific purposes, always provided that if the hospitals had to be subjected to public inspection it was carried out by experienced people. A central council might be established for this purpose; it would leave hospitals free to develop their own particular characteristics, while securing uniformi in matters where uniformity was really desirable, suc methods of admission, &c. The day had gone by, he when the provision of help for the sick would suffi enough money for the hospitals' support. The able ground for hoping that the hospitals maintained by voluntary contributions lay i that the more expensive forms of medical t advancement of medical education and s

now held for wealthy and philanthropic people. The future policy of the hospitals should be to show clearly that the work they did was for the benefit of the whole community, and for this purpose to maintain their special services in the highest perfection.

Mr. NEVILLE CHAMBERLAIN (Birmingham) contributed a paper on

The Reform of Out-patient Departments of Hospitals,

remarking by way of preface that while the Insurance Bill would render impossible the remedies he had in mind before its introduction, it would also, he hoped, remove in large part the evil those remedies were designed to meet. Probably everyone would agree that the work of out-patient departments was the least satisfactory part of modern hospital routine, whether looked at from the point of view of the hospital, the medical profession, or the patients who came to the departments for treatment. Instead of confining themselves to consultation and cases of immediate urgency, as was intended originally, the out-patient departments, with their elaborate and expensive apparatus, their trained nurses and experienced consultants, had allowed themselves to be turned into great free dispensaries. Really serious and important cases were jostled and thrust aside by people with cut fingers or common colds, or, what was perhaps worse, by chronics whose chances of cure lay rather in careful nursing and home treatment than in periodic visits to a distant institution. The result was an ever-increasing crowd of applicants for relief with a corresponding diminution of the amount of time devoted to each individual. Hospital managers chafed under a sense that the money of the subscribers was being wasted, patients grumbled at the long waiting, while the medical practitioner outside bitterly commented on the difficulty of earning a livelihood in competition with an institution which was not run on commercial lines, but offered gratis the knowledge and experience he had spent his time and money in acquiring. Proceeding to consider remedies for this state of things, Mr. Chamberlain mentioned how difficult it had been found in practice at the Birmingham General Hospital to get the staff to sort out applicants for relief and advise trivial cases to apply to their own doctor, to a dispensary, or elsewhere. The only chance appeared to lie in applying pressure on the people themselves. Mr. Chamberlain outlined "an ideal system of medical relief" as follows:—

1. Every person should contribute towards the cost of treatment.
2. Every person should be attended in the first instance by his own doctor, but should have power to change his doctor at intervals.
3. Drugs should not be dispensed by a doctor but by a chemist or dispensary.
4. Patients requiring institutional treatment should be admitted to the hospital as in-patients, or should obtain consultation or treatment on the recommendation of any qualified medical man without the necessity for subscribers' letters, &c.
5. Paying wards should be established for those in better circumstances.

An endeavour had been made to fulfil some of these conditions in Birmingham by the establishment of a provident dispensary. Mr. Chamberlain described the methods of this institution, which a medical speaker later in the meeting paid the tribute of describing as free from the defects of most similar undertakings. Among the hindrances to the success of the dispensary Mr. Chamberlain mentioned the apathy of the medical profession and the stringency of medical etiquette which made no distinction between canvassing for a private individual for his personal benefit and canvassing for a properly managed provident institution primarily for the benefit of the members themselves. Medical men had failed to recognise the trend of modern legislation and to see that the only alternatives open to them were an extension of the provident dispensary system and some form of State interference. The growth of dispensaries had been checked and the consequence was that the community had been led to interfere more and more in medical relief. Already in Birmingham the number of beds in rate-supported hospitals far exceeded those in voluntary hospitals. The urance Bill, following the lines of previous legislation, brought the State at one bound to the doors of the me and by the introduction of the compulsory curre d rendered superfluous the provident dispensary. been sim e the effect of the new system upon the out- trolling the nts? He hoped it would bring about the metal Eusta esired. Every man would go first to his catheter mad came to the hospital first it would be easy

Dr. W. JOB t, and the staff would be haunted no the worst of th a residuum of h

longer by the bogey of a public scandal following on a "spiteful death on the doorstep." He did not think the expense or the numbers of the out-patient departments would greatly decrease. There would be a larger number of difficult, protracted, and expensive cases, but the hospitals would be relieved of the greater portion of the trivial cases which were now such a clog upon their working. Subscriptions, however, must decrease owing to direct taxation of sources of hospital income. He did not agree with a system of *per capita* contributions from the State as likely to give rise to disputes. He would like to see sums of money allotted to hospitals on the lines of State grants to universities.

Dr. E. D. KIRBY (Birmingham) read a paper on

Some Local Aspects of Hospital Reform.

In Birmingham, he said, the medical institutions had allowed themselves gradually to be perverted from charities into provident institutions. That was to say, the working classes had been permitted to subscribe to them for their own benefit. It might be regarded as an intelligent anticipation of the Insurance Bill, with the significant exception that no provision at all was made for any payment to the medical profession. In illustration of this statement Dr. Kirby gave an account of the history of the General Dispensary showing how the practice of compulsorily deducting a penny a week from workmen's wages towards the Hospital Saturday Fund had led to people claiming as a right services which were instituted as a charity.

Dr. J. B. BRIERLEY (Manchester), opening the discussion, remarked that the reason the medical profession had been dubious of provident dispensaries was that they had not been able to secure an income limit for members.

Dr. J. H. KEAY (Greenwich) thought the spirit animating the papers read augured well for hearty coöperation being secured between medical men and hospital managers in meeting the altered circumstances brought about by the Insurance Bill. As to the reform of out-patient departments, he thought a few prosecutions of well-to-do people who abused them would be highly effectual.

Dr. D. J. MACKINTOSH (Glasgow) said that the Bill would assist in doing away with hospital abuse if it existed. Voluntary hospitals had a hand-to-mouth existence at present, and they could not continue to exist unless funds were forthcoming. He objected to hospitals accepting grants from the State, but saw no difficulty in their receiving payment for individual cases.

Dr. J. H. TAYLOR (Salford) thought control of hospitals by the Insurance Commissioners would not be as objectionable as State control, because on the former body there would be medical representation.

Mr. JAMES NEAL (Birmingham), Dr. WALLACE HENRY (Leicester), and Mr. G. JACKSON (Plymouth) also took part in the discussion, all emphasising the point that if insurance patients in hospitals were paid for, the medical staffs could not be expected to give their services voluntarily.

The readers of papers then replied, and on the question of the method of payment, if it was found that the State must come to the aid of the hospitals if the Bill was passed, Mr. CHAMBERLAIN pointed out that the estimated loss of income at different hospitals varied widely. A *per capita* grant would therefore not compensate some of the hospitals for their loss.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

THURSDAY, JULY 27TH.

President, Dr. EDWIN GOODALL (Mental Hospital, Cardiff).

The subject set down for discussion was

Trauma in Relation to Nervous and Mental Affections,

which was introduced by Dr. F. W. MOTT (London), who began by emphasising the importance of distinguishing between cause and coincidence of head injury in relation to nervous and mental disease, also of recognising that head injuries are not infrequently the result of nervous or mental disease. His experience was drawn chiefly from asylum work, and it was curious how few actual cases of head injury with trephining for it he had observed. Out of 20,000 cases there were less than 20 of this kind, and in a series of 2000 necropsies on insane cases there was only one. That head injuries might cause insanity was admitted, although it was of the first importance to elicit the details

of the family history in all such cases. Dr. Mott quoted the case of a shipwright who had fallen down a ship's hold and fractured the cranial base and vertex. The man was taken to Poplar Hospital, and eventually discharged with his mind somewhat affected. On coming under Dr. Mott's observation at Claybury a diagnosis of general paralysis was made, although there was no Argyll Robertson pupil. The patient gradually sank and died, and at the necropsy were found chronic basal meningitis, caries of the petrous bone, and internal hydrocephalus, also a choked optic disc on both sides. The association between the injury and the disease was apparent. On the other hand, a patient who fell 40 ft., fracturing his skull and sustaining a considerable loss of frontal lobe tissue, became irresponsible and immoral thereafter, and had to be transferred to an asylum. In his case there was a marked family history of insanity. Another case quoted was that of a child who had had a bad head injury, with fits and subsequent imbecility. Naturally the friends attributed these to the injury, but at the post-mortem examination microgyria and porencephaly were found, showing that the epilepsy and imbecility could not possibly be attributed to the accident. Dr. Mott quoted other cases, and took up the general attitude that the relation of head injury to insanity was very slight. In five years of his Charing Cross Hospital experience he had seen 65 cases of head injury, of which 22 died in hospital. He had been able to follow up 13 cases of severe head injury, all of which patients developed the characteristic symptoms of traumatic neurasthenia. Yet all eventually recovered, with the solitary exception of one who was transferred to an asylum. He had been able to get certain figures from the admissions to Bexley Heath Asylum. Of 7640 admissions there were only 16 males and 20 females in whom a possible relation of injury to insanity might be considered. But in every case the injury was contributory rather than primal. Dr. Mott quoted a number of instructive cases where the possible relation of injury to the development of general paralysis had to be considered, and went fully into the medico-legal aspect of these cases. He pointed out how head injury might easily be an accelerating factor in the development of nervous and mental disease, and quoted illustrative cases.

Dr. BYROM BRAMWELL (Edinburgh) said the chief difficulty in many cases was to determine whether the patient who had had an accident, and thereafter developed definite nervous symptoms, was nervously healthy at the time of the accident. This was true especially of epilepsy and general paralysis. Careful inquiry often showed that the patient was not in perfect nervous health at the time. Dr. Bramwell said he had seen cases of gumma of the brain, tuberculoma of the cerebellum, and other intracranial growths, apparently excited by injury, and it was quite reasonable to suppose that occasionally injury was the direct exciting cause. He had seen general paralysis resulting, as far as could be judged, from an injury. He entirely agreed with Dr. Mott that until the question of compensation was settled most traumatic cases of neurasthenia did not improve. He often told such patients that if they really wished to get better they must first settle all matters relating to compensation.

Dr. G. E. SHUTTLEWORTH (London) alluded to the frequency—indeed, the constancy—with which friends and others attribute the maldevelopment of defective children to injury either before, during, or after birth. Most parents were unwilling to admit hereditary tendencies, or that there were deeper causes for mental defect than accident. He could not agree with American statistics, which seemed to show that in 2 per cent. of mental defectives the result was due to attempts at abortion. He thought the attribution of mental defect to the use of the forceps at birth was erroneous; the timely use of the forceps saved many infants from the risks they would otherwise have run of sustaining head injuries. It was his experience, with regard to trauma in childhood, that after a fall out of a perambulator the parents began to observe their child more closely, and hence to notice symptoms which had hitherto escaped their observation.

Dr. J. S. RISIEN RUSSELL (London) called attention to the question more particularly of traumatic neurasthenia. He was bound to admit that sometimes trivial injuries resulted in extraordinarily severe symptoms, which could not possibly be simulated, and quoted illustrative cases. He thought, also, that compensation was due if pre-existing disease was accelerated by the injury or if its development was accelerated. He considered that the future of many traumatic cases depended on the age of the patient and the condition of his blood-vessels, especially those cases of severe traumatic neurasthenia where mental symptoms predominated. He agreed that trauma might definitely start a nervous lesion in a syphilitic individual. Further, the effects of a trauma, such as to result in actual structural damage, did not need to be immediate.

Dr. F. E. BATTEN (London) also referred to delay in the production of nervous lesions after an injury. He questioned very much whether actual organic disease of the central nervous system could develop after an injury. He could not subscribe to the views expressed by Dr. Bramwell and Dr. Russell in regard to this point. He had difficulty in imagining how a progressive weakness could follow an injury. He thought the condition after the injury was over would either remain stationary or would tend to improve. Dr. Batten was not able to agree with Dr. Mott that the Wassermann reaction was positive in practically cent. per cent. of general paralytics, and quoted cases in support of his contention.

Dr. NATHAN RAW (Liverpool) remarked how few actual cases of insanity followed head injury. In a series of 137 cases of general paralysis observed by him in the last 14 years, eight were attributed to injury. Careful inquiries, however, resulted in the fact that in six of the cases a definite history of syphilis was obtained, and in one other case general paralysis had been diagnosed before the injury occurred. The injuries alleged were as follows: severe injury to spine, fall of hammer on top of head, explosion with injuries to the face, fracture of cranial vault, fracture of frontal bone, severe kick from horse, general injuries to head, and concussion of brain. Necropsies were made in two fatal cases, and the typical appearances of general paralysis were observed, but no evidence of injury either to the skull or brain could be discovered. Dr. Raw concluded that trauma was not a cause of general paralysis *per se*, but that in persons who were predisposed to the disease a severe injury might accelerate its onset and cause a rapid progression of the symptoms with an earlier fatal termination.

Dr. W. J. MIDELTON (Bournemouth), Dr. D. COLQUHOUN (New Zealand), Dr. G. M. ROBERTSON (Morningside Asylum), Dr. J. G. SOUTAR (Gloucester), Dr. J. MILLS (Ballinasloe), Dr. W. SALISBURY-SHARPE (London), and Dr. EDWIN BRAMWELL (Edinburgh) continued the discussion. Dr. MOTT replied.

Professor B. PFEIFER (University of Halle, Germany) then read a paper on

Brain Puncture for Diagnostic Purposes.

He said that in cases of intracranial abscess, cyst, tumour, &c., it was often advisable to substantiate the diagnosis by the method of brain puncture, the technique of which had been considerably improved by himself. He thought that for diagnostic purposes the method was valuable, and it had received the support of various distinguished German surgeons, notably Krause and Borchardt. His method is as follows. The scalp over the area to be explored is anæsthetised with a spray, and a borer of 3 mm. diameter, worked by electricity, is used to drill through the bone. The needle, of platinum and iridium, 1 mm. in diameter, containing a silver wire inside, is introduced through the membranes and into the brain a given measured distance—say, 3–4 cm. The wire is then withdrawn and a syringe fitted to the needle, with which the operator's assistant aspirates into the tube a cylinder of brain tissue 1 mm. in diameter and 3–4 cm. long. This can be fixed, cut in serial section, and suitably stained. Professor Pfeiffer has found the operation practically painless, has performed it in a number of instances successfully, and reported a series of 13 new cases, in every one of which a positive finding was obtained. In one case death ensued in a few hours owing to the needle having punctured the artery of the corpus callosum, which, post mortem, was found to have been displaced from its normal position by a tumour. Sections were shown on the lantern of some of these cases, in which an exact local and histological diagnosis had thus been made; the tumours found included glioma, sarcoma, endothelioma, carcinoma, cholesteatoma, and cysticercus cyst.

Dr. E. F. TREVELYAN (Leeds) and Dr. R. T. WILLIAMSON (Manchester) discussed the paper.

OBSTETRICS AND GYNÆCOLOGY.

THURSDAY, JULY 27TH.

President, Professor EDWARD MALINS (Birmingham).

Professor PAUL STRASSMANN (Berlin), in opening a discussion on

The Present Position of Vaginal Operations in Relation to the Uterus and its Adnexa,

observed that laparotomy in gynæcological surgery is now not such a necessity as formerly. The following reasons may be cited in support of this thesis: (1) very large tumours of pelvic origin are far less common; (2) the tendency of modern treatment is towards conservatism; and (3) the percentage mortality of vaginal operations is less than that associated with laparotomy. Abdominal sections for disease of the pelvic viscera have certain well-defined disadvantages. In the first place, peritonitis is more frequent than after vaginal cœliotomies. This is in part due to the unavoidable contact with the intestines and omentum, and is to some extent aggravated by the Trendelenburg position. The trauma received by intestines and omentum in packing these structures away from the scene of operation is shown later by the presence of omental adhesions and stomach troubles. The discomfort arising from this cause is frequently diagnosed as hysteria, and serves but to emphasise the necessity for exercising great care in all manipulations of the omentum. Both peritonitis and intestinal paresis are largely avoided when the vaginal route is used. A further argument against laparotomy is the risk of hernia. Although this risk is to some extent obviated by the transverse fascial incision of Küstner and Pfannenstiel, it does not entirely eliminate the danger. Nevertheless, the abdominal incision certainly has a very definite sphere. The speaker recommended that it be employed for all tumours of doubtful origin. The vaginal operation for tumours requires an extensive differential diagnosis, and hospitals without a special gynæcologist will always prefer laparotomy. Fibromyomas should only be removed by the abdominal route when they are larger than the head of a newly-born child. At the most one-fifth of the operative cases of fibroids require laparotomy. Carcinoma of the cervix is best removed by laparotomy, except in the case of fat or elderly women or in the presence of severe constitutional disease, when the vaginal route is preferable. Carcinoma corporis uteri, on the other hand, may be dealt with quite satisfactorily by the vagina. Abdominal section is indicated also when appendicitis is suspected. Although Ott's speculum has removed some of the difficulties and rendered the vaginal operation quite possible, laparotomy is to be preferred. It is a point of considerable importance, therefore, in the diagnosis of cases of pelvic inflammation to eliminate the appendix as the *fons et origo mali*. Professor Strassmann then proceeded to explain the numerous advantages which the vaginal route offered. There was much less shock, and a corresponding smaller mortality. Convalescence was more rapid, and the after-effects due to adhesions or hernia entirely avoided. He was surprised at the disproportion that existed in numbers between obstetrical and gynæcological vaginal operations. The majority of vaginal sections became quite easy with practice, and even large cystic tumours can be removed with less trouble than is experienced in a craniotomy. For intrapelvic diagnosis Ott's speculum has provided the gynæcological surgeon with a very valuable weapon. In removing structures, however, it is better to rely on palpation. Disadvantages that have been urged against vaginal cœliotomy are: (1) the lack of sufficient room; (2) the danger of injuries to the bladder and ureters; and (3) the failure of primary union in the vaginal cicatrix, and the production of a weak scar and possibly hernia. Additional space for the vaginal operation may be gained by the use of perineal incisions and efficient retractors. Vesical and ureteral trauma is avoided by experience and the use of an "anterior flap" incision. Trouble with the cicatrix is more illusory than real. The indications for anterior and posterior vaginal incisions were clearly defined, and the steps of the "flap" operation carefully described with the aid of diagrams and instruments. The vaginal route offers exceptional advantages in the treatment of certain well-defined conditions. Tubal pregnancy, e.g., is easier to remove vaginally when the gestation is early and the rupture recent. Hæmatoceles should always be incised vaginally. Pelvic inflammatory exudates and pyosalpinx are better evacuated by a posterior vaginal incision than through a laparotomy wound. Drainage is much more easily maintained and the risk of general peritonitis reduced to a minimum. Convalescence is usually rapid in such cases. Again, in displacements of the uterus ventral fixations and Alexander's operation are but rarely called for. The ideal operation, in the speaker's opinion, is vesico-vaginal fixation. Great value is attached to a vaginal incision for exploratory purposes. Many pelvic ailments of women are seen where such an incision would permit of effective treatment—e.g., the separation of pelvic adhesions, stomatoplasty upon the Fallopian tubes, and the excision of small ovarian hæmatomata. Laparotomy for such conditions is too severe an operation, and associated with too many risks.

Dr. HERBERT R. SPENCER (London) congratulated Professor Strassmann upon his excellent paper, and was in complete accordance upon many points. He quite agreed with the conservative measures that were advocated, and he deprecated the resort to laparotomy in many cases of what is called the "acute abdomen." The sacrifice of many inflamed appendages by general surgeons is a scandal. A posterior vaginal incision in the majority of cases is all that is required. He did not agree with Professor Strassmann's references to the frequency of hernia after laparotomies, and he was disappointed to hear that catgut was recommended. In spite of Professor Strassmann's vigorous advocacy of the vaginal route, he thought that he still preferred laparotomy. The operation for fibroids is much "cleaner" by this means, and ovarian tumours can be removed entire—an important factor, since malignancy cannot always be diagnosed before tapping. Furthermore, it is much easier to control the bleeding from adhesions when the abdomen is open; and, finally, it is not infrequent to find sinuses existing between a pyosalpinx and intestine.

Dr. AMAND J. M. ROUTH (London) considered that vaginal operations are nowadays much neglected. He had had the advantage of being compelled to practise the method, as laparotomies were not permitted to gynæcologists at an institution to which he had the honour to be attached. He thought that the younger men favour abdominal work nowadays, because many of its dangers no longer exist, and the low mortality of vaginal operations is no longer a stimulus to counterbalance the difficulties. He had seen Ott's speculum in use, and thought that it had a useful sphere in the diagnosis of deposits, &c., but that it did not facilitate the removal of parts. He was quite in accord with Professor Strassmann on many points—e.g., the great value of vaginal drainage and the conservative treatment of salpingitis. In many cases of pelvic peritonitis all that is necessary is a posterior vaginal incision. Fibromyomata, if larger than a fist, are better removed through the abdomen. Carcinoma of the body of the uterus and early cases of carcinoma of the cervix can be treated by the vaginal route.

Dr. J. B. HELLIER (Leeds) remarked that he had employed the abdominal route for many years, and was much in favour of it. He believed in dealing with adhesions "by the light of day," and thought that all ovarian tumours, except the very largest, should be removed entire. One reason against vaginal sections that he particularly urged was the difficulty in checking bleeding. Furthermore, he did not think that infection of the general peritoneum was at all common in dealing with suppurating conditions in the pelvis through the abdomen, but he believed that vaginal drainage in these cases was the right procedure. Another reason that made him prefer the abdominal route was the fact that malignant disease of the intestines or other viscera is sometimes found in the course of a laparotomy.

Dr. C. E. PURSLOW (Birmingham) emphasised the danger of tapping ovarian tumours either during the course of laparotomy or vaginal section. He thought that rupture of an ovarian cyst might readily occur during the manipulations required to expose it by the vaginal route. Should the tumour be malignant or of dermoid nature the results might be disastrous. He also acquiesced in emphasising the extreme danger that some operators run in attacking from the abdomen a pelvic peritonitis secondary to abortion, &c. A vaginal incision relieved many of these cases at once. Exploratory vaginal cœliotomy might be advantageously employed in the diagnosis between some cases of pyosalpinx and tubal gestation.

Dr. A. W. RUSSELL (Glasgow) considered that hæmorrhage in the course of vaginal operations may be practically eliminated by the use of clamps, which are removed in 24 hours. He had used this method for years and had never

had any trouble with venous oozing. He always employed catgut ligatures and removed the whole of a gauze drain by the end of 48 hours after operation.

Dr. THOMAS WILSON (Birmingham) also advocated the use of catgut. He had never seen tetanus or secondary hæmorrhage resulting from its use. For uterine displacements he preferred Alexander's operation or some form of intra-abdominal fixation. For prolapse after the menopause he had had very good results from vesico-vaginal interposition. As regards the choice of operation for carcinoma, he could not agree that early cases should be subjected to vaginal section. He had frequently found that these "early" cases recurred, and advised, therefore, a radical Wertheim operation. Also, in "body" carcinoma cases only one in ten in his practice remained well after five years if dealt with by the vaginal route.

Dr. JOHN CAMPBELL (Belfast) observed that he was not quite convinced by the eloquent advocacy by Professor Strassmann of vaginal surgery. In cases of doubt he would always use abdominal methods. He was of opinion that uterine fibromyomata could be removed much more speedily through the abdomen than through the vagina, and this must have some effect upon the mortality-rate. He always preferred catgut for buried sutures, and hoped that the use of unabsorbable ligatures would soon become obsolete.

Mr. E. STANMORE BISHOP (Manchester) considered that the choice of route must depend upon the case, and be decided by the surgeon in charge. In the matter of ruptured tubal gestation, he thought that the most important factor in treatment was the rapid cessation of the hæmorrhage. This was not easily effected by the vagina and the ligatures were liable to slip. As regards post-operative cystitis, he did not believe the route employed had anything to do with it. The use of the catheter was the one and only cause.

Mr. E. W. SCOTT CARMICHAEL (Edinburgh) was of the opinion that no vaginal section for carcinoma was in accordance with scientific findings. It was quite impossible to excise completely the lymphatics by this route and he therefore strongly advocated abdominal operations for malignant disease. Ovarian cysts and severe degrees of pelvic inflammatory disease should be treated by laparotomy, but for the milder inflammatory conditions vaginal cœliotomy was satisfactory.

Dr. MARY THORNE (London) thought that the mortality of vaginal sections for fibromyomata was too high to prove conclusively the value of the route.

Dr. R. J. JOHNSTONE (Belfast) agreed with Professor Strassmann in that tubal gestation was treated most effectively by means of the vaginal route. He also preferred a vaginal incision for most inflammatory pelvic diseases. For most other conditions he regarded laparotomy as the operation of choice.

Dr. J. E. GEMMELL (Liverpool) regarded the abdominal route as being much cleaner and safer.

Dr. M. HANDFIELD-JONES (London) emphasised the danger, from the educational standpoint, of a too free advocacy of the charms of vaginal section. Amongst experts the operations undoubtedly were quite safe, but if they became general he was afraid that the mortality would at first be very high.

Professor STRASSMANN in reply, quite agreed that carcinoma should be attacked from the abdomen whenever possible, and a wide excision of lymphatics was indicated. He was surprised to hear that certain speakers disagreed with the use of catgut for buried sutures. If properly prepared with iodine he considered that it was quite safe. The material was very largely employed in Germany and he had never seen tetanus arise from its use. He thanked the section most heartily for the great interest that it had taken in his paper and for the excellent discussion that had followed.

ODONTOLOGY.

THURSDAY, JULY 27TH.

President, Professor F. EARLE HUXLEY (Birmingham).

A paper on the Incidence and Natural Arrest of Caries was read by the SECRETARY in the absence of the author, Dr. W. WALLACE (Glasgow).

Mr. A. S. UNDERWOOD (London) contributed

Some Remarks regarding Two Antral Cases.

He pointed out that the gorilla had septa in its maxillary sinuses which appeared to divide them into two separate chambers. In reality, however, inflation of the nasal duct, which was brought about probably by the vocal habits of the animal, encroached on the antral wall and gave it this appearance. He exhibited a human skull in which the nasal duct was inflated, simulating antral division, and spoke at some length on the difficulties of operation for relief of suppurative conditions of this cavity, and in his reply said that the accessory cavity was commoner on the left than on the right side—viz., in the proportion of 1 to 3—the usual position being that of the region of the third molar in each case.

The PRESIDENT, Professor JOHN HUMPHREYS (Birmingham), and Mr. HERBERT SMALE (London) took part in the discussion.

Mr. A. W. WELLINGS (Birmingham) then gave a lantern demonstration of

An Interesting Abnormality of the Dental Tissues.

In the ensuing discussion Mr. A. HOPEWELL-SMITH (London) expressed the view that the tooth tumour shown was probably due to fusion of two tooth germs, with a hollowing out of the intervening space; Mr. UNDERWOOD likened the condition to the folded character of the poison fang of the viper; and Mr. J. G. TURNER (London) suggested that it represented a calcified unilocular cystic tumour. Mr. HUMPHREY HUMPHREYS (Birmingham) endorsed the opinion of the first speaker.

Mr. J. G. TURNER, reading a paper on

The Pathology of Retained Teeth,

believed that teeth often remained buried in the substance of the bones of the jaws without producing any symptoms of pain or discomfort. When a communication and septic infection occurred between the retained body and the mouth, or the antrum, or the nose, neuralgia might occur. Skulls in the Anatomical Museum at Cambridge and the Museum of the Royal College of Surgeons of England had been examined, the result being that the probable factors in the production of retained teeth were failure of development of the bone of the jaws, the influence of sex, the displacement of tooth germs, the premature removal or undue retention of deciduous teeth, general and local diseases, and the presence of supernumerary teeth. He showed a number of slides and preparations to illustrate his subject.

This paper was discussed by Professor JOHN HUMPHREYS and Mr. HOPEWELL-SMITH, who inquired of the author whether his researches threw any light on the development of cystic fluid around these retained teeth; whether traumatic influences, such as those set up by foreign bodies in the mouth, had any effect without direct bacterial infection; and whether, by studying these pathological conditions, it was possible to explain the physiological processes connected with the normal eruption of the teeth.

Mr. A. BRITTEN (Birmingham) also spoke.

Later, the members of the Section adjourned to the Dental Museum, when Professor JOHN HUMPHREYS gave a discourse on the story of evolution of vertebrate life from geological times as shown by the most indestructible portions of the bodies of animals. Specimens of the teeth of ganoid and other fishes from the Silurian, Devonian, and Carboniferous epochs were passed round for examination, including orodus, strophodus, and the predatory sharks of the cretaceous periods. Reptiles were represented by the marine lizard ichthyosaurus, pliosaurus, plesiosaurus, iguanodon, and the miocene charcarodon. He concluded by briefly referring to the teeth of mammals of an archaic type—viz., palæotherium, hyopotamus, rhinoceros, hippopotamus, red deer, and the bison of pleistocene times.

OPHTHALMOLOGY.

THURSDAY, JULY 27TH.

President, Mr. HENRY EALES (Birmingham).

A discussion on

The Etiology, Diagnosis, and Treatment of Concomitant Squint and Heterophoria

was opened by Mr. CLAUD A. WORTH (London), who said that any historical survey would be out of place, but the names of four great workers in this field would be in everyone's mind—Donders, Javal, Priestley Smith, and Maddox. Convergent squint: In a normal-eyed person the two sets of

visual impressions received by the two eyes are fused in the brain into one picture. In order that fusion may take place the direction of the visual axes must correspond. The cerebral faculty of fusion determined the effort of the oculomotor apparatus to this end. When that faculty was perfect even gross displacement of the visual axes, such as could be produced by prisms, could be overcome, so a want of balance of the motor apparatus would not cause squint, but heterophoria. If the fusion faculty was temporarily in abeyance—e.g., when one eye was covered—the eyes would deviate. In hypermetropia there was a tendency to excessive convergence during accommodation, but in the interest of binocular vision this was checked. In forcible deviation, as in paralysis of an external rectus, there was persistent diplopia. Contrariwise, in the absence of fusion faculty there was no reason for accord in the visual axes, and any disturbing factor, hypermetropia, motor defect, or mental disturbance, caused squint. The controlling factor was referable to the brain; further than this one could not go. The onset of squint was most frequent in the second and third year. He thought that some fusion faculty was present and remained effective until particular strain, illness or school, rendered it insufficient in the face of ocular difficulties. The belief that squint was determined by motor difficulties was negatived by cases of motor imbalance, where so high a defect as 15° could continue without squint. Considering the amblyopia of squint, he held that at least 90 per cent. of amblyopia in squinting eyes was acquired. In the rare cases of amblyopia without squint there was usually a high degree of astigmatism in the amblyopic eye and none in the other eye; in these cases it appeared that the amblyopia arose from the selective use of the good eye. In the treatment of convergent squint he recognised three aims: (1) the cure of the "amblyopia ex anopsia," (2) the removal of the deformity, and (3) the securing of binocular vision. Measures for the attainment of the final result were: 1. Atropising of the fixing eye only; this was only of use when the squinting eye retained the power of fixation. 2. Occlusion of the fixing eye when the squinting eye had lost the power of fixation. There should be total occlusion of the eye for at least one month; more than that was rarely necessary or useful. 3. The exact correction of errors of refraction. He did not hesitate to do this at as early an age as three months, for it was now certain accommodation came into play at an early age. 4. Operation. As a rule this should not be attempted until all other means of rectification had failed. Simple tenotomy for the rectification of squint he did less and less; he relied now almost entirely upon advancement of one or both external recti. There were two varieties of divergent squint which had an entirely different origin. The first was associated with myopia of high degree, and was consequent on the increasing difficulty of maintaining excessive convergence. Since the eyes of school children had been systematically examined it had become less frequent. The second order he had called "neuropathic." It usually dated from infancy; it was occasional or constant, unilateral or alternating. There might be feeble fusion; more commonly it was absent. Only in the constant unilateral cases was there amblyopia; in others vision was perfect. Convergence was always defective, and the degree varied from day to day. The subjects of it were bright and intelligent but nervous. It was three times more common in females than in males. He held that in heterophoria there was a defect in the relative motor balance of the eyes kept in check by the fusion faculty. It was the reverse of squint. It was impossible in most cases to demonstrate any particular muscle defect, but the effect of it was manifest in an abnormal tendency to convergence, divergence, or vertical deviation. It was by no means uncommon to find that sufferers from "eye-strain," who had emmetropia in each eye, were deficient in motor balance, and that to this their trouble was due. Of the varieties of defect hyperphoria was the most troublesome, and the least common; in these last, for cases of moderate degree the use of prisms was invaluable, but for high degrees advancement of an inferior rectus was preferable.

Mr. H. H. B. CUNNINGHAM (Belfast) laid stress upon the hereditary or familial nature of squint; he had traced the characteristic in not a few families. Anisometropia in a more or less marked degree seemed a particularly effective ocular defect in determining a squint; the fusion faculty must be at a special disadvantage in such cases. On the general lines of treatment he was in agreement with Mr. Worth. On the matter of training, whilst he held instruments such as the "amblyoscope" and "diaphragm test" of the greatest value in children of fair age, something was wanted for very young children. For this purpose two colour pictures had been devised which, when looked at through red and green screens, showed which eye was fixing; by these pictures useful practice could be obtained. He agreed in the superiority of advancement over tenotomy, and in the importance of not including the artery of the muscle within the suture.

Dr. R. J. COULTER (Newport, Mon.) drew attention to those cases in which no error of refraction was found in early life, but later, after the existence of squint for some years, astigmatism appeared. He suggested that the abnormal pressure of the muscles in excessive convergence might induce the astigmatism.

Dr. J. B. STORY (Dublin) put the order of procedure in treatment as: (1) Correction of error of refraction; (2) occlusion of the fixing eye; and (3) advancement to correct deformity and permit of fusion training. As regards etiology, there were cases that he felt were not covered by current theories—cases where squint ought to have appeared, but in which there was none.

Mr. A. W. ORMOND (London) called attention to a record by Cheselden in the middle of the eighteenth century concerning the lack of appreciation of a patient at the restoration of his sight by cataract couching. It emphasised the fact that amblyopia did not appear unless vision was interfered with before it was properly established; once that was attained an amblyopia was unlikely to be complete at any time, and vision was recoverable. If vision was interfered with before it was properly established amblyopia tended to be marked and irremediable. He considered that every effort should be made to remove the squint by operative measures before training was undertaken.

Dr. W. B. INGLIS POLLOCK (Glasgow) said that in advancement it was necessary to exert particular care to obtain equal stress in the arrangement of the sutures, otherwise distressing hyperphoria might be caused.

Dr. MCREYNOLDS (Texas) had heard it said that American ophthalmologists over-emphasised the importance of muscle anomalies; he thought to-day's discussion dispelled that idea. Formerly there had been a large practice of partial tenotomies in the States; that had fallen into comparative disuse in favour of advancement. In one point their practice differed from that described by Mr. Worth; they did not sever, but folded and tucked in, the tendon.

Mr. N. BISHOP HARMAN (London) said the point in the paper of Mr. Worth that particularly interested him was the note concerning "neuropathic divergence." This defect he considered akin to such other cerebral defects as colour blindness and tone deafness; it was probably referable to an inherent weakness of the fusion faculty. There was great difficulty in treating it, just because the subjects of it never realised that they did squint. The wandering eye promptly returned to its duty when the patient was told of the squint, and they never could see it in their looking-glass! What they did not see they did not bother about. It was almost always the friends who objected to the squint. In the "diaphragm test" he had found a most satisfactory means of demonstrating the existence of the squint to these patients; they saw its effects for themselves, and that was the first step in any attempt to improve their condition. As regards heterophoria, he agreed in the influence these defects had in producing eye-strain, but he thought that this only held good for those people who did near work. He greatly preferred the practice of decentering the lenses worn by patients to secure prismatic effects rather than superadding prisms to the lenses. This was more convenient in prescribing, in manufacture, and in wearing.

Dr. K. PISCHEL (San Francisco) spoke of the superior advantage of sutures obtained from the tendons of rat tails in advancement operations.

Major R. H. ELLIOT, I.M.S., said that heterophoria as a cause of asthenopia was much more common in India than it appeared to be in England. Patients complained of its effects in India and remarked these disappeared when in England. He agreed with Mr. Bishop Harman that it was only necessary to correct the defect for the purposes of near vision.

Professor R. A. REEVES (Toronto) said that asthenopia from heterophoria was common enough in Canada. He found great benefit from the use of systematic exercise

with prisms. In advancement for squint there was a real danger of causing hyperphoria by inequality of the sutures. To avoid this risk he always stitched the shortened muscle to the old insertion of the muscle, end to end.

Professor PRIESTLEY SMITH (Birmingham) asked why Mr. Worth considered it better to advance the muscle to the edge of the cornea rather than in the manner Professor Reeves had just mentioned. The contrast of the old-time neglect of squint with their present-day careful educative methods was great, and this revolution they owed to the initiation of Javal.

Dr. N. H. PIKE (Cheltenham) said he had had good results in heterophoria by the use of prism exercises. The method was not nearly enough made use of.

Dr. T. HARRISON BUTLER (Coventry) said he wished to thank Mr. Worth for his operation; it had proved most satisfactory in his hands. He was in the habit of combining tenotomy of the opposing muscle with advancement, but the tenotomy was done so that its effect was temporary only or until the advanced muscle was secure.

Dr. ARTHUR GREENE (Norwich) asked what amount of improvement could be anticipated from atropising or occluding the fixing eye.

Dr. A. LITTLE (Bradford) asked how it was possible, as had been advised by Mr. Worth, that the exercise of the squinting eye should be carried out by the surgeon. How many sittings did it require?

Dr. A. HUGH THOMPSON (London) said that occlusion of the fixing eye for a long period was a serious handicap in the school life of the child. He had been in the habit of occluding the eye for only half the day, and with apparently good results.

Dr. J. GRAY CLEGG (Manchester) asked if training was of any use in securing restoration of vision in the squinting eye after the age of 8 or 9 years. He commented upon the existence of cyclophoria in patients without any indications of asthenopia.

The PRESIDENT said that to his mind the great change which had come about in their treatment of squint was due to the recognition that the amblyopia was caused by the squint, and was, therefore, ameliorable; and that it was not, as formerly held, the cause of the squint.

Mr. WORTH, in reply, said that as regards operation he did sometimes shorten and reattach a muscle to its old insertion, but in cases of considerable squint that did not give enough rotation, and it was necessary to advance the muscle to the corneal margin. It enhanced the action of the muscle considerably. He considered there was little risk of causing hyperphoria if the stitches were inserted parallel to each other and in line with the old insertion of the muscle. Occlusion of the fixing eye, he agreed, might occasionally be advantageously prolonged beyond four weeks, and at an older age than 7 years; but the willingness of the parents to take trouble had to be considered, and the risk of disappointment. At these late ages, when vision was improved, the gain was usually not great. For fusion training the most favourable age was from 3 to 6; 2 was too early to attempt it, and 7 mostly too late.

Dr. THOMSON HENDERSON (Nottingham) read a paper on

The Comparative Anatomy of the Ciliary Region.

He said that in the common farmyard quadrupeds (horse, cow, sheep, pig, cat, and dog) the regular arrangement seen in man did not obtain. The ciliary processes were not all the same size; they were smaller and more numerous towards the nasal side, and the smooth posterior part was absent. In effect it amounted to the prolongation of the retina forwards on the nasal side, a provision apparently correlated with the necessity for a wide field of vision towards the flank.

Mr. BISHOP HARMAN asked if Dr. Henderson had found any variation in this striking peculiarity in animals the shape of whose pupils were narrowed vertically, as the cat, or horizontally, as the horse or goat.

Dr. HENDERSON replied that there was no difference; both were alike in the advancement of the retina.

Dr. INGLIS POLLOCK read a paper on

The Treatment of Chronic Dacryocystitis.

He said that pathological examination of excised lacrymal sacs had enabled him to show that the subadenoid layer was greatly swollen and thrown into folds by a dense cellular infiltration. Such a condition was obviously unsuited to the older treatment of probing; rather, probing was likely to accentuate it and produce stricture. The dacryocystitis was secondary to a septic focus, most frequently in the nose, and its cure was best effected by regular and persistent lavage of the sac and duct. In private patients a short course of syringing usually effected a cure; but in hospital patients the results were not so satisfactory, probably because the condition was commonly advanced before they were seen. If after three months' lavage cure was not effected excision of the sac should be resorted to.

Dr. HARRISON BUTLER read a paper describing

A New Operation for the Extirpation of the Lacrymal Sac.

He said it was essentially a modification of Meller's operation. The site of the sac was rendered anæsthetic and anæmic by the injection of codreniue. The primary incision was through skin only; it took the form of a half circle with the centre at the canthus and a radius of 6 mm. The flap was carefully dissected up, avoiding buttonholing the skin or wounding the veins underlying the nasal side of the incision. The palpebral ligament was then isolated and the deep fascia split vertically so as to expose the sac. The sac was freed from its bed with blunt-pointed scissors and pushed down under the ligament. Then the canaliculi were severed, the sac drawn down towards the duct and twisted to the cord and cut off. The operation was bloodless and painless; no retractors were required, only sutures to hold back the flap and secure the ligament.

Mr. BISHOP HARMAN said that in his experience the difficulty of removing the lacrymal sac arose from attempts to see it. In this operation touch was better than sight. The bed of the sac could be perfectly defined by the sense of touch. To turn forward the contents of this groove, and then establish the actual position of the sac by means of a probe passed through the lower canaliculus into the sac itself, left no room for mistake. That done, he gripped the tissue between the fascia and bone and removed it bodily. The removed tissue contained the sac and little else. He did not hesitate to cut the palpebral ligament, and had never found any ill-effects for that procedure.

Mr. JOHN HERN (Darlington) agreed with Mr. Bishop Harman that removing the contents of the lacrymal groove was the best procedure. But he did not favour indiscriminate operation; most cases could be cured by syringing, preferably with weak iodine solution.

Mr. WORTH said that the practical abandonment of probing was a great advance; syringing should be the main procedure. Excision was a last resort.

Mr. CUNNINGHAM said enough attention was not called to the primary cause of dacryocystitis, which was commonly in the nose. Recently he had seen a case where cure of ozæna relieved the lacrymal trouble.

Mr. W. ALLPORT (Birmingham) said that in his experience it was never necessary to excise the sac unless intraocular operation was contemplated. His practice was to use silver styles, and their insertion and retention had the most beneficial effect.

Professor PRIESTLEY SMITH confirmed this statement of his colleague.

Mr. F. M. GRAINGER (Chester) also approved the use of silver styles, and in cases where abscess and fistula had supervened recommended the use of a little zinc paste to the interior of the sac; it destroyed the diseased mucosa and the fistula soon closed.

Mr. ORMOND said that styles were elusive things; he had once found three in one patient.

Mr. J. JAMESON EVANS (Birmingham) doubted if styles would cure the primary condition; excision secured a permanent result and relieved the patient of serious risks.

The PRESIDENT said he had tried both styles and excision; both procedures had their uses. He did not find any benefit in hollow styles over the solid. He agreed that more attention should be paid to the nasal conditions; when that was done sac troubles would probably disappear.

Dr. POLLOCK and Dr. BUTLER both replied.

PATHOLOGY.

THURSDAY, JULY 27TH.

President, Professor R. FRASER CALDER LEITH (Birmingham).

The PRESIDENT, in reopening the business of the meeting, stated that when the Committee decided on the subject for that day's paper they were divided as to whether a pure pathologist or a pure clinician should be asked to open the

discussion. They finally came to the conclusion that no one was better fitted for the task than Dr. Rolleston. He then asked Dr. H. D. Rolleston (London) to read his opening address on

The Pathogenic Action of Bacillus Coli.

Dr. ROLLESTON stated that it would no doubt be desirable to confine attention to the typical bacillus coli communis of the Escherich group, and as far as possible to exclude the intermediate group comprising B. enteritidis and the paracolon and paratyphoid organisms, and also the aerogenes groups. But this was hardly feasible at the present time, for many conditions and cases described as due to B. coli might really be examples of infections with coliform organisms of the intermediate group. The pathogenic action of B. coli was of great interest from the tendency in clinical medicine to regard the alimentary canal as primarily responsible for many diseases of obscure origin, such as rheumatoid arthritis, diabetes, &c. B. coli was widely distributed, rapidly invaded the body after death, and might be found in pure culture in cases not searched for anaerobic organisms. Great caution must be exercised before stating that B. coli was pathogenic in any given case. There was, perhaps, a possibility that the pathogenetic effect of B. coli might sometimes be underestimated rather than exaggerated. In Flexner's studies of terminal infections he found B. coli so often that unless there were special reasons he attached no pathogenic importance to their presence. Dr. Rolleston then stated that the agglutination test was not an efficient one in determining whether the B. coli found in pathogenic exudates was infective or no. He stated that Dudgeon in a long series of cases found it was extremely rare to obtain a well-marked agglutination reaction. Dudgeon placed more reliance on the opsonic and phagocytic indices. The association of B. coli with other organisms was on a different footing from the presence of B. coli alone. Dr. Rolleston suggested that the failure of antistreptococcal serum to check the course of puerperal infections might be due to the fact that in these cases the streptococci were often associated with B. coli. He discussed the clinical features of the reaction of the human infection by B. coli. In acute forms there was often high temperature with rapid oscillations, though experiments made with B. coli endotoxin showed a marked fall of temperature. He considered that in children, if malaria was excluded, rigors were almost pathognomonic of urinary infection with B. coli. In the chronic forms of infection with B. coli the long duration and liability of relapse after periods of quiescence were notable features. As regards hæmic infections with B. coli, he stated that there were probably less than 50 recorded cases in which the organism was found by blood culture. He mentioned three groups of cases: (1) resembling typhoid; (2) pyæmic; and (3) terminal infections, and invited discussion on the frequency with which septicæmia due to B. coli occurred in fatal peritonitis and appendicitis. Reference was made to Adami's view on the bearing of subinfection with B. coli on the etiology of pernicious anæmia, hæmochromatosis, and hepatic cirrhosis. Metchnikoff's contention that indol and phenol produced by B. coli caused visceral lesions and arterio-sclerosis was mentioned, and reference was made to the production of arterio-sclerosis by injections of cultures of B. coli.

Dr. WOODS HUTCHINSON (St. Louis) stated that people were now so taken up by the fact that the alimentary canal was responsible for so much disease that some even went so far as to advise extirpation of the colon. He stated that in hook-worm disease in America the opinion generally held was that the profound anæmia was due to the passage of B. coli and its products through the walls of the bowel *viâ* the worm-bites. He held that many so-called gouty disorders were due to B. coli infections, and not to disorders of metabolism. He thought diabetes might be caused by an ascending infection of the canal of Wirsung and so of the pancreas by the B. coli, and that in diabetes the toilet of the alimentary canal was nearly as important as diet. He thought that many diseases were hastened to their end by infection with B. coli.

Professor G. SIMS WOODHEAD (Cambridge) said there were great difficulties in determining whether B. coli was the real and only factor at work. Mixtures of organisms of a most complicated character were found in the alimentary canal, and it was difficult to say which was the offending organism. He drew attention to the work of Cobbett and Graham Smith on grouse disease. They found that there was a constant relation between the number of animal parasites found in the cæca of grouse to the number of B. coli that could be detected in the organs and tissues; observations made by himself on the parasites of the alimentary canal of certain of the lower animals bore this out. Another difficulty was the variation in the pathogenicity of B. coli, becoming parasitic and saprophytic according as it grew in the tissues, in the intestinal canal, or outside the body. He stated that the nearer to human origin the B. coli is, in water contaminations by sewage, the greater is its pathogenic power, and that as soon as B. coli left the intestines and entered the tissues, so it became more active.

Dr. J. M. BERNSTEIN (London) argued that from the point of view of the clinical pathologist he considered that in any given case the diagnosis of coliform organism was sufficient, and that it was unnecessary to state the exact type of coliform organism found. He said that if a vaccine was prepared from the organism found and the patient treated with it, the exact definition of the organism was unnecessary, and that the labour involved was more than he as a clinical pathologist, and not a pure bacteriologist, considered justifiable. He considered urine free from pathogenic B. coli if cultures of 5 c.c. remained sterile, and did not consider, as Dr. Emery suggested, that B. coli present in 1 litre was pathogenic.

Dr. GEORGE DOCK (St. Louis) said that it seemed to him that many of the problems in pathology were closely connected with B. coli infection. He suggested that in future work in the B. coli group precise identification of the germ should be made, and he thought Adami's hypothesis regarding so-called subinfection very attractive, and that Opie's work was very suggestive. He drew attention to the increase of virulence of B. coli in animals given small doses of morphine, and thought it was disadvantageous to use morphine in B. coli infections.

Dr. J. H. THURSFIELD (London) mentioned the difficulty clinicians and pathologists had in identifying B. coli infections, and said that what was now wanted from the scientific pathologist was a clear indication of the means by which the organisms found might be classified, in order that the clinician and clinical pathologist might be able to correlate the symptoms found with the different types. Dr. Thursfield stated that in his opinon the prognosis as regards symptoms in urinary infections was good; prognosis as to freedom of the urine from the B. coli was bad, and he had not known of an adult who had become free bacteriologically, though in children such results were more frequent.

Dr. J. W. SMITH (Newcastle) referred to a case of chronic general dermatitis with acute exacerbations every three or four weeks, and affecting practically all the cutaneous surface, the cause of which was with difficulty discovered. A catheter specimen of urine was examined and found to contain large numbers of B. coli. An autogenous vaccine was prepared and the patient treated with it with complete success. She was having at the same time alkalies and sour milk.

Dr. W. D'ESTE EMERY (London) thought that Dr. Thursfield was unnecessarily pessimistic with regard to the prognosis of urinary infections with B. coli. He admitted that in many cases it was difficult to get rid of the last few organisms from the urine, but this was accomplished in a fair proportion, and in the great majority all symptoms could be removed by means of vaccines. In children the number of successes was even greater, and vaccines were not always necessary. He had never seen B. coli in the blood or cerebrospinal fluid of patients suffering from B. coli infections, and insisted on the little value of agglutination tests in B. coli infections.

Dr. CHALMERS WATSON (Edinburgh) remarked that his experience of a large number of reports furnished to him by his bacteriological friends led him to agree with previous speakers that it was difficult to speak otherwise than of "organisms of the coliform group." He had found from reports sent to him that the morphological characters and bio-chemical characters of the bacillus from the same patient sometimes varied considerably at different stages of treatment. Dr. Rolleston had given a very comprehensive account of the clinical features of B. coli infections. Dr. Watson desired to emphasise the occurrence of symptoms in women in which asthenia was most marked usually associated with slight anæmia, and sometimes with slight enlargement

of the phalangeal joints, warranting the clinical diagnosis of rheumatoid arthritis, but which were the results of a B. coli infection. He considered the suggestion as regards gouty conditions very interesting, as he had long advocated the infective origin of this disease.

The PRESIDENT then addressed the meeting, and in congratulating the speakers on the excellency of the discussions, said that he thought disagreement between them on some of the points raised was the sign of a healthy condition, and that it was an inducement which weighed with the committee in choosing this subject for discussion. He regretted that the pure pathologist was so seldom able to meet his patients. He thought that the attention of clinicians should be drawn to the fact that great advances had been made as regards the exact determination of B. coli in the laboratory, and greatly deplored the suggestion that we should go back to the loose nomenclature of "coliform organism" in preference to the exact definition of the species involved. He considered the problem of the future to be the drawing up of definite bio-chemical and other tests, so that each worker would be sure that he was isolating the same organism. He believed that B. coli always bred true and would always give the same reactions.

STATE MEDICINE AND INDUSTRIAL DISEASES.

THURSDAY, JULY 27TH.

President, Professor ALFRED BOSTOCK HILL (Birmingham).

Dr. R. A. LYSTER (Winchester) read a paper on

The Need for Unification in the Public Medical Services.

He said that at the present time medical services were being provided for the public in the following ways: (1) By public health authorities; (2) by Poor-law authorities; (3) by county councils; and (4) by voluntary agencies. These services, he went on, although they overlapped to an astonishing degree in many ways, left many gaps. The overlapping caused a gross waste of public money, while the universal gaps represented a persistent and serious menace to public health. In reality there were other public medical services distinct from those he had already mentioned, such as factory surgeons, police surgeons, medical officers to the Post Office, and medical referees. These might be left out of consideration at first as they dealt with small sections of the public, but they would inevitably need coördination later. The central control of the public medical offices was in an almost equally chaotic condition, the Local Government Board, the Home Office, the Board of Agriculture, and the Board of Education all taking a hand in the supervision and control of purely public health matters, but each apparently acting quite independently of the others. The Local Government Board, in fact, appeared to be able to maintain the supervision and control of the great services—Poor-law and public health—in water-tight compartments without preserving any relationship with each other and without having any aims in common. From these causes resulted confusion and the obvious need for unification. Experience in the past ought to prove conclusively that independent authorities working on the same or similar lines led to wastefulness and inefficiency. The necessity for unification became apparent when one considered the unsatisfactory competition that took place between public health authorities, the Poor-law, and the voluntary agencies in the provision of institutional as well as out-patient treatment. The treatment provided, although unsatisfactory and often inadequate, was, as a rule, indiscriminate and liable to great abuse. Assuming that the need for unification had been proved, it now remained to suggest the lines upon which such could be arranged. The alternative principles to be followed were the combination of offices on the one hand and the unification of authorities on the other. The recent Order (1910) issued by the Local Government Board recommended that the medical officer of health could, with advantage, also hold the position of school medical officer, superintendent of the isolation hospital, certifying factory surgeon, police surgeon, public vaccinator, district medical officer, and medical officer to the workhouse. Such advice should have an important effect in educating public opinion, but the desirability, and especially the practicability, of such a method of unification must be carefully considered. An officer holding the above eight distinct and separate posts would be working under four authorities and with eight different conditions of appointment. The holding of the eight offices by one individual would not necessarily effect any coördination of work or bring about any real unification, so long as there were the different public bodies left to pursue their independent policies and to control his work. The advantage claimed for the above policy of the Local Government Board was that the officer could by these means be made independent of private practice. It was not likely, however, to have any extended trial owing to the opposition and mutual jealousies between the authorities chiefly concerned. The combination of offices might be found to be desirable as a sequence to the unification of authorities, but was not at all a promising procedure until that had taken place. The disadvantages of the present system did not arise from the multiplication of offices so much as from the number of authorities concerned. Each authority was independent, and, with the best of intentions, it was quite impossible for any coherent scheme of work to be arranged. The process of unification presented no insuperable difficulties, as all officials concerned could be taken over by the new authority, and the difficult problem of dealing with displacements from office would not appear. It would at once become possible to adopt a definite policy and to adjust the work so as to avoid overlapping, and yet leave no part of it undone. The fact that a scheme of unification was recently approved by the County Councils Association affords additional evidence of the desirability and practicability of such proposals. Recent developments in public administration indicated clearly that the unified service should be controlled by the councils of counties and county boroughs. If local committees were considered to be still desirable in county areas, it should be possible to arrange for a certain amount of local work to be given them so long as the organisation and coördination were carried out by the county council. Only when the unification of authorities was an accomplished fact would it be necessary and useful to discuss the advisability or otherwise of whole-time officials for public work. The gradual condensation of staffs by grouping together appointments as they fell vacant would be a simple matter if only one authority was concerned in such appointments, and the policy of the Local Government Board, as outlined in the Order (1910), would be quite easy to carry out. By very slight extensions of the plans suggested by the Local Government Board and the County Councils Association it would be possible to aim at the gathering together, under one medical officer, the work connected with general public health, school inspection, Poor-law out-door relief, inspection of midwives, work under Food and Drugs Acts, food inspection, prevention of river pollution, vaccination, organisation of voluntary work, &c. Local staffs would include sanitary inspectors and health visitors, while the central staff would consist of bacteriologist, analyst, veterinary inspector, and also under the control of the county council there would be an in-door staff consisting of resident medical officers of infirmaries, infectious disease hospitals, and sanatoriums.

Surgeon-General G. J. H. EVATT, A.M.S. (retired), urged the financial union of the charges for the Poor-law medical officers and the medical officers of health for the country as a preliminary step towards a closer union of those two classes of officials.

Dr. E. W. D. KITE (Sheffield) considered that certifying factory surgeons should have a central authority to report cases of unfitness.

Mr. HERBERT JONES (Hereford) protested that in the schemes for the unification of the medical service, with the county council as the centre and the county council medical officer of health as the administrative chief, the medical officers of health of the large districts were apparently ignored.

Dr. F. E. WYNNE (Leigh, Lancs) said his conception of the unification of the public health service was the establishment of a Department of Public Health with a Cabinet Minister at its head.

Dr. R. MURRAY LESLIE (London) was strongly in favour of some measure for the unification of the health service of the country. There was, no doubt, at present considerable wastage of effort on account of the overlapping of the work of the various State and voluntary health agencies. The office of the medical officer of health would naturally be the centre of the different local health agencies, and would be recognised as such.

Dr. A. E. LARKING (Buckingham) objected to the medical officers of health endeavouring to secure all the appointments. All schemes for the unification of the public health had the idea of subordinating the general practitioners to the medical officers of health. As a general practitioner, he thought that his class was the one to do the clinical work, and let the medical officer of health keep to his special work. The medical officer of health ought not to do any clinical work; he should devote all his time to public health work and to investigating into deleterious conditions reported to him by the practitioners of the district.

Dr. S. BARWISE (Duffield) said there was an entire misapprehension if it was imagined that the medical officer of health wanted in any way to undertake the work of treatment or interfere in the slightest degree with the independence of the general practitioner.

Dr. T. SHADICK HIGGINS (Birmingham) said that as a preliminary step to the unification of the medical services there should be unification of the present public health service.

The PRESIDENT said that the trend of the discussion seemed to show that all agreed that there was a need of unification, though in many cases some interests appeared to fear any extension of the power of the medical officer of health.

Dr. D. S. DAVIES (Bristol) read a paper on

Disease Carriers.

He said that in regard to State interference in the case of the chronic typhoid carrier, up to the present no solution as to what legislation was necessary and desirable had been arrived at.

Dr. E. W. GOODALL (London) said that however desirable it might seem to be to insist upon freedom from bacilli as a criterion of freedom from infection practice had shown that it was quite unnecessary and hardly worth the expense it entailed.

Dr. J. C. G. LEDINGHAM (London) agreed with Dr. Davies that some form of routine bacteriological examination of typhoid convalescents was essential before discharge and also that late control examinations should be made at the end of six months and one year.

Professor J. SPOTTISWOODE E. CAMERON (Leeds) said he was strongly of opinion that "return" cases of scarlet fever were most of them due to carriers. After eliminating all practical possibilities of inefficient disinfection—six weeks, nine weeks, or even longer before the discharge of the patient—there remained a certain number of cases in which the patient developed, when sent home, some nasal or other mucous discharge, although all such discharges were non-existent on being sent home and bacteriological examination showed no streptococci. They were greatly indebted to the bacteriologists. The debt would be infinitely increased if they would tell them what was the essential contagium vivum of scarlet fever.

Dr. H. J. EGERTON H. WILLIAMS (Sheffield) said that in his experience it was practically impossible to carry out a detailed and systematic examination of all cases of typhoid with the view of isolating carriers from the fact that trained assistance was insufficient.

THERAPEUTICS, INCLUDING DIETETICS.

THURSDAY, JULY 27TH.

Chairman, Dr. JAMES GALLOWAY (London), Vice-President.

In conjunction with the Dermatological Section a discussion was held on

Recent Developments in the Recognition and Treatment of Syphilis.

Mr. J. ERNEST LANE (London), who has been connected for more than a quarter of a century with the London Lock Hospital, opened the discussion, restricting himself mainly to a consideration of the clinical aspect of the subject. About seven months ago the introduction of salvarsan was a valuable addition to the therapeutic stock for the rapid relief of symptoms, though as a cure the speaker did not consider it displaced the time-honoured method of treatment by mercury. He wished to check immoderate enthusiasm and issue a warning not to expect too much of this new agent, which had certainly been over-estimated at first and had raised people's hopes that syphilis would now be easily curable. He quoted the *Times* of Dec. 19th, 1910, in this sense, stating that much disappointment has already resulted. In regard to the 120 cases which had come under his observation, the patients could not compare with those treated in the army either in physique, general hygiene, discipline, or in the opportunity for observing later effects; but experience showed that salvarsan was capable of checking most of the ravages of the disease, though lapse of time, at least three years, would be necessary before declaring a cure established. Infectivity would also in all probability be greatly diminished. It should not be forgotten that almost equally remarkable results followed the administration of mercury by intramuscular injection and inunction, which he still regarded as the mainstay in treatment. The demonstration of spirochætæ in the first stage was of the greatest importance in many instances that were formerly doubtful, and their discovery enabled vigorous treatment to be undertaken at a time which promised the greatest chance of success. He recommended the employment of 0·6 to 0·4 gramme of salvarsan, repeated in 14 days, though the primary lesion often cleared up after the first injection. He counselled the continuance of mercurial treatment thereafter for three years with intermissions. These injections involved some inconvenience, since the patient had to remain in bed at least 24 hours under close and skilled observation, as the reaction was sometimes severe and even alarming. It could not be foreseen in any individual, and might depend on arsenic intolerance. There was sometimes difficulty in reaching a vein, especially in women, as had been previously experienced in 1896 when intravenous injection of mercury was introduced. If the vein were missed serious and painful œdema and phlebitis resulted. Some fatalities had occurred, probably more than were generally known. He had had two such experiences in hospital, doubtless connected with the severity of the disease, but accelerated by the arsenic, and two others had recently come to his knowledge. Faults in technique resulting in admission of air or clotting also occurred, so the treatment was not without risk and discomfort. If undertaken by one thoroughly skilled, and followed by the administration of mercury, the treatment appeared ideal.

Captain L. W. HARRISON, R.A.M.C., said it was only natural in speaking of salvarsan to compare its effects with those of mercury in regard to safety of administration, rapidity of action, and permanency of results. In the majority of cases two years' persistent treatment by mercury was probably efficacious, but it made great demands on patience, and relapses and complications could scarcely be avoided. The dose needed nice adjustment, and intermissions of treatment might be necessary. His experience in the use of salvarsan at Rochester Row Hospital extended over 11 months, and the cases could be divided into (1) early primary cases, and (2) cases which had proved refractory to mercury. He presented tables showing every case treated, a complete account of relapses, those showing very striking results, and those in which the effects were not so pronounced. The first table of fresh cases treated initially by salvarsan showed a much more rapid decline of symptoms than was produced by mercury, whether tested by clinical appearances, bacteriology, or the Wassermann reaction. The second table, made up from cases refractory to mercury throughout the army, showed very striking effects of salvarsan, the symptoms commonly disappearing by the third or fourth day. His general conclusion was that a rapid cure was effected in both these classes of case, though it was yet too early to give an opinion as to ultimate and complete cure. Among 115 cases 18 relapses had been encountered. When a second injection had been given for recurrence of symptoms its effects were as strikingly beneficial as in the first. The subsequent instances showing a positive Wassermann reaction were more numerous than those of recurring symptoms, and he held it unwise as yet to draw conclusions as to permanence of cure. In regard to mode of administration, he preferred infusion to injection. A large-bore needle was not necessary. If the saline solution were freshly made reaction was milder, possibly owing to entire absence of micro-organisms.

Mr. J. E. R. MCDONAGH (London) attributed most of the ill-effects which had been recorded as following the administration of salvarsan to the influence of the spirochætæ themselves, particularly in the nervous system. Accidents also resulted from errors in technique and probably also in connexion with an arsenic idiosyncrasy which could not be

anticipated. Optic neuritis and affection of the cochlear nerve occurred in the second stage as part of the original disease, and indicated rather that the treatment had been inadequate. He considered neither of these nerve conditions a contra-indication to the use of salvarsan. After administration there was a rise of blood pressure, succeeded by a fall, attributable to the alkaline solution. This was important in connexion with diseased conditions of the heart and large vessels. Preparation of the patient should be in all respects the same as for other operations, especially as regards preliminary rest, relative starvation, and clearing of the bowels. When vital parts were involved in the disease the local reaction might have very serious effects, such as meningitis or hæmorrhage in various directions. The solution employed should be neutral in reaction and the dose 0·6 gramme salvarsan in 10-ounce saline solution. He advised treating cases in the earliest stage, repeating the injection in 14 days and continuing with intramuscular injections of mercury, many recurrences being due to auto-infection.

Dr. R. SCHUSTER (Aachen) contended that the Wassermann reaction was reliable either in the latent or active stage of syphilis. In latent and parasyphilitic conditions salvarsan was quicker and also more dangerous in its effects. He referred to cases of locomotor ataxia in Westphalia which had died suddenly from respiratory paralysis and hæmorrhage in the medulla oblongata. Ordinary treatment commonly failed because it was not persisted in till the cure was completed.

Dr. R. STOPFORD TAYLOR (Liverpool) reported a series of cases treated by salvarsan. General paralysis had not been benefited, but a bad case of locomotor ataxia had been able to walk after 48 hours. The arsenic was rapidly eliminated when given intravenously, and could not be found in the urine after 9 to 10 days. After intramuscular injection, however, it could be detected after several weeks. Disappearance of pain was very striking, as was also improvement in the general health and increase in weight.

Dr. OTTO F. F. GRÜNBAUM (London) said that in tabes dorsalis it was too much to expect formation of new tissue, but arrest of the disease and cessation of pain might be secured. Freshly prepared saline solution and a minimum alkalinity were important. A slight addition of acid could be made without causing a precipitate. A small needle could be used provided it could be kept free of clot. If the vein was small, freezing to the skin made transfixion easier. A second injection could be safely undertaken after 48 hours.

Dr. G. PERNET (London), Dr. G. H. LANCASHIRE (Manchester), and Dr. J. C. MCWALTER (Dublin) also spoke before Mr. LANE and Captain HARRISON replied.

TROPICAL MEDICINE.

THURSDAY, JULY 27TH.

President, Sir FRANCIS LOVELL, K.C.M.G. (London).

At the opening of the sitting Dr. A. W. G. BAGSHAWE, director of the London Sleeping Sickness Bureau, made an important announcement regarding

The Most Recent Advance Reported as to Experimental Inoculation of Sleeping Sickness.

He said that Professor F. Kleine, of the German Sleeping Sickness Commission, who had been the first to prove that Trypanosoma gambiense underwent a cycle of development in the body of the Glossina palpalis, and who had been continuing his research work in Africa, but who was at present home on leave in Germany, had sent him a communication in which he said that he had received information by telegram from Dr. M. Taute in the Tanganyika district to the effect that the experiments with the object of transmitting sleeping sickness by the agency of Glossina morsitans had proved successful. Of 16 monkeys experimented upon, six had become infected, the disease having been unquestionably conveyed by G. morsitans. This, said Dr. Bagshawe, was an important discovery, for hitherto they had regarded G. palpalis as the sole agent by which sleeping sickness could be transmitted. That under certain circumstances G. morsitans also could convey the infection served to explain some recent puzzling cases of sleeping sickness which had occurred in Rhodesia and Nyasaland, in districts where, though carefully sought for, no trace of G. palpalis could be found, and where, consequently, the origin of the cases could not be accounted for. They would, however, have to wait for full details of these experiments until the issue in due course of the printed report of the German Commissioners.

Dr. J. W. W. STEPHENS (director of the Incorporated School of Tropical Medicine, Liverpool) then opened a discussion on

Yellow Fever on the West Coast of Africa.

He explained that the duty of opening the discussion had devolved upon him in consequence of the unexpected death of Sir Rubert Boyce, who had already with great vigour and ability dealt with the question. For himself he wished to say that he desired to approach this difficult subject more as a critic of the evidence brought forward in favour of the alleged endemicity of yellow fever on the West Coast of Africa than as a partisan of one side or the other. So far as he could make out, no one denied that the disease did appear now and again in that region. On the one hand, there were those who contended that these cases were due to an imported infection, possibly from South America or the West Indies, brought on board ships; while others maintained that the cases arose from the locality itself where the native acted as a reservoir of the virus. Some persons alleged that the evidence as to transmission of yellow fever by the stegomyia fasciata was not definite or precise, and some suggested that the parasite might be different from that of South America. It had, however, to be admitted that stegomyia abounded in the towns on the West Coast of Africa, but notwithstanding this fact there had not been any recent epidemics of the disease on a large scale in any of these towns. Was this cessation of epidemics to be explained by native insusceptibility, or had the natives acquired immunity by previous mild attacks? It was maintained by some that natives had a natural resistance to yellow fever infection. Such examples of this natural resistance had been met with—e.g., among large bodies of troops in the Mexican war—some corps entirely escaping, while others suffered severely, both parties apparently being subjected to the same opportunities for contracting the infection. With regard to the alleged natural resistance of negroes to yellow fever, in the American war with Cuba it was found that the black troops suffered equally with the Americans. If yellow fever be not imported in each instance into the West African towns, the disease must be endemic, the native acting as the reservoir of the virus. This was the late Sir Rubert Boyce's view. Recent text-books make the statement that yellow fever is endemic in West Africa, and Dr. Stephens said he was not prepared to dissent from that statement. He thought it impossible to believe that the disease could be so frequently imported. Endemicity of yellow fever implied that the infection spread to some extent among the natives, and that this infection resulted in subsequent immunity. It was obvious that more careful investigation on the spot was necessary, and they had therefore to be cautious in drawing too hasty conclusions. Mere assertion on the one hand or a simple denial on the other was useless. Sir Rubert Boyce also believed the bilious remittent fever of West Africa was yellow fever. But the difficulty was in proving the diagnosis, no specific organism of yellow fever having as yet been identified. A practical point in the prevention of yellow fever, if it existed endemically in West Africa, was to secure, in addition to anti-mosquito measures, sufficient isolation of the housing of the European from that of the native community. Further investigation was needed to settle in a satisfactory way whether (1) yellow fever was imported or endemic in West Africa; (2) had the native natural or acquired immunity, and was this the reason the disease did not spread? It was also very important to learn definitely whether bilious remittent fever was being mistaken for yellow fever. Inquiry was necessary before a settlement of the disputed points could be reached.

Dr. W. T. PROUT, C.M.G (Liverpool), reminded the Section that the subject had already been discussed and fully thrashed out at recent meetings of the Society of Tropical Medicine in London, with the assistance of the late Sir Rubert Boyce, and so far as he could see no new facts had been adduced since then. What was needed, he thought, to help to a right decision was the production of more definite facts as to the actual conditions under which alleged yellow fever cases were met with in West Africa. Without doubt cases of true yellow fever occurred now and again on the Coast, but that the disease was always happening not only in a few places but up and down the country, as contended by the late Sir Rubert Boyce, there was no proof at all.

The constitution of the West Coast town population was usually a small isolated community of Europeans and a large community of natives, the Europeans being constantly recruited by non-immunes from home. It was alleged that the native population had acquired immunity, but certain of the West Coast towns had an annual large influx of natives brought from the interior, presumably having no acquired immunity. If the disease were endemic there was material both among Europeans and natives in which it could spread and give rise to an epidemic. Dr. Prout quoted some of his own personal experiences gained while serving in West Africa, and contrasted yellow fever and malaria in their modes of spread. He contended that though occasional cases of yellow fever occurred in that region they were not by any means so common as the late Sir Rubert Boyce asserted. Dr. Prout was not convinced that the disease existed commonly in a mild form among the natives of West Africa, thus conferring subsequent immunity upon them. But he wished to keep an open mind, and would carefully consider any trustworthy evidence on the subject if it were submitted to him.

Dr. H. SEIDELN (Liverpool, formerly professor of pathology and bacteriology in the University of Merida, Mexico), pointed out that the views put forward by Sir Rubert Boyce were not new, but it had required some courage to bring them up in the face of official disapproval. The conditions of the districts on the West Coast of Africa did not, in his opinion, differ from those found in other centres, as, for example, in South and Central America, where yellow fever was endemic. From what he had heard he believed that in West Africa only severe cases of yellow fever were reported as such, and this did not give a true idea of the extent of the prevalence. Dr. Seideln gave some interesting details of an illness from which he and his family suffered within a month of their arrival in the Mexican province of Yucatan, but which was not at the time diagnosed as yellow fever. From facts which came to his knowledge afterwards he regarded the illness as true yellow fever. As he was exposed subsequently to various opportunities for contracting the disease and escaped, he inferred that the illness in question had conferred immunity upon himself and family. It was significant that the local health officials offered to give him a certificate that he was immune to yellow fever, so that he could travel without any restriction in South and Central America. He believed that the number of stegomyia in West Africa was not large enough to allow of the development of epidemics of yellow fever. Investigation was greatly needed to settle the amount and distribution of the stegomyia fasciata in West Africa, and whether after all this was the transmitter of the yellow fever infection in that region. It was possible that some other insect acted as a carrier of the disease. He disputed the statement that the blood of a yellow fever patient ceased to be infective after three days in all cases, for he had himself met with cases which were infective at a later stage than this. Extremely careful and exact observations were required to settle the question. The biology of the stegomyia should also be investigated, and the clinical diagnosis of yellow fever should be fully worked out. Dr. Seideln said that he had done some research work on yellow fever which he proposed shortly to publish.

Dr. A. J. CHALMERS (Colombo) continued the discussion, mentioning his personal experiences while stationed in West Africa. As regards bilious remittent fever, there were some cases in which examination of the blood revealed evidence of malarial parasites, but in others with similar symptoms no such evidence was forthcoming. He was unable to say that the latter were instances of yellow fever. He was disposed, however, to believe that yellow fever was endemic in West Africa.

Major R. W. H. JACKSON, R.A.M.C. (Plymouth), referred to the outbreak of yellow fever during the Ashanti war in 1872 and his personal experiences in West Africa and the West Indies. He regarded the quarantine regulations in the West Indies as very effective, but it was very necessary that the diagnosis of yellow fever should be beyond dispute before they were applied.

Dr. R. H. KENNAN (Dublin) also related some personal experiences while stationed on the West Coast of Africa. Cases he did not diagnose as yellow fever at the time now appeared to him to have been instances of yellow fever. He thought that the disease went in cycles, appearing epidemically in some part of the coast every eight years.

Dr. J. W. MARTIN (Dumfries) doubted that yellow fever was always present in West Africa. He admitted the difficulties of diagnosis, especially in mild or anomalous cases. Until some method for establishing the diagnosis of the disease was found, he feared we must remain in doubt as to the alleged frequency of yellow fever in West Africa.

Professor W. J. R. SIMPSON (London) believed that while yellow fever did occur on the West African coast from time to time, it was by no means so frequent as was asserted. Natural immunity was an interesting point. He mentioned an outbreak comprising 46 cases—viz., 27 Europeans, of whom 23 died; 13 natives, of whom 7 died, and 6 Syrians, of whom all died. This outbreak showed that natives were attacked, and that a proportion died from the disease. One might naturally expect that with the large number of Europeans constantly going to West Africa yellow fever, if widely endemic, would attack these non-immunes far more frequently than was actually the case. He thought further investigation on the spot was called for.

Dr. H. P. COLE (Alabama) said that, as one of the officers of the United States Public Health and Marine Hospital Service, he, as well as his colleagues, was always on the look-out for endemic cases of yellow fever among the coloured population, but he had seen none as yet. Bilious remittent fever was not regarded by the Americans as yellow fever.

Dr. M. CAMERON BLAIR (North Nigeria), Dr. G. ROME HALL (London), and Dr. K. S. WISE (British Guiana) also took part in the discussion.

After the PRESIDENT had expressed his opinion that the so-called bilious remittent fever in Sierra Leone, where he had at one time served, was in reality yellow fever,

Dr. STEPHENS replied. He said he was surprised to find that, after all, a majority of the Section regarded yellow fever as endemic in West Africa, but no one had thrown light on the reason why if endemic it did not spread oftener and cause epidemics. He did not commit himself to the opinion that bilious remittent fever was yellow fever, but he thought that a case for inquiry had been made out. The difficulties of the diagnosis were the crux of the whole matter, and no advance could be made until some trustworthy pathological test for yellow fever had been discovered.

Dr. H. BAYON (Craggs Investigator, London School of Tropical Medicine) then read a paper on the

Culture of the Leprosy Bacillus.

He said that Hansen's bacillus was generally regarded as the cause of leprosy, but it was possible that it was merely a harmless accompaniment of the real organism. He referred to the recently published work of Captain T. S. Beauchamp Williams, I.M.S., who had cultivated two types of organism from his cases—(*a*) a diphtheroid non-acid-fast organism, and (*b*) an acid-fast streptothrix. Dr. Bayon then described a number of carefully planned laboratory experiments which he had carried out on animals. His investigations were made partly at the Lister Institute and partly at the London School of Tropical Medicine. His conclusions are summed up by him as follows: 1. It is not sufficient to culture an acid-fast or other organism from one or several cases of human leprosy to enable the statement to be made as to its relation to the disease. This must be the result of complete animal experiments and extensive serological tests. 2. It is possible to culture from cases of human leprosy an acid-resisting diphtheroid which acquires acid-fast properties on being injected into rats or mice. It is possible to regain the germ by cultures from the animals experimented upon as an acid-fast rod. Re-injected into rats or mice it causes the identical changes of spontaneous rat-leprosy and very striking analogous lesions similar to those found in the glands and organs in human leprosy. 3. No special medium can guarantee a culture from a case of leprosy. The growth depends on circumstances which we do not so far exactly know and cannot control. This applies to the lepra bacillus in its acid-fast form. The most favourable media appear to be placental extract-agar and horse serum nutrose-agar, with the addition of 2 per cent. of ground-up smegma bacilli. 4. Agglutination, precipitation, complement deviation, and percutaneous tests can be used to prove the relationship of acid-fast or other germs cultured from cases of leprosy. 5. Serological tests and histological changes taken together seem to prove that rat and human leprosy are caused by the

same germ. It is therefore possible that the disease can be transmitted from rat to man, given an appropriate carrier. As rat-leprosy seems endemic to a slight extent in England this may be an explanation of the cases of leprosy where infection has occurred without the patient ever having been abroad. 6 Nodular and anæsthetic leprosy may very well be due to different modes of infection. 7. Kedrowsky's work on the variable morphology of the lepra bacillus appears to be confirmed by these experiments.

Owing to the lateness of the hour at which Dr. Bayon's paper was read there was no opportunity for discussion, but a demonstration of his microscopical preparations was given by him to those interested in the subject after the sitting had terminated.

THE ANNUAL EXHIBITION.

(*Concluded from p. 389.*)

III.—FOODS AND FOOD PRODUCTS.

THE special foods were worth studying, foods for the diabetic and milk foods being most in evidence. In this section it was apparent again that manufacturers are devoting real scientific attention to the composition of foods with the view of adapting them to special requirements.

Albulactin produced considerable interest at the stall of Messrs. A. Wulfing and Co., of 12, Chenies-street, London, W.C. As we have already pointed out in our analytical columns, this substance represents the true milk albumin, the protein which predominates in human milk. Its addition to diluted and sweetened cow's milk is, as practice has shown, of great advantage in infant feeding. Messrs. A. Wander, Limited, of 1 and 3, Leonard-street, London, E.C., exhibited specimens of "ovaltine," which, as our analysis has shown, presents the elements of a complete food, containing in addition the ovo-lecithin of eggs. It is made with malt extract, milk, eggs, and a cocoa flavouring, and occurs in the form of a granular powder soluble in warm milk or water. Messrs. Southall Brothers and Barclay, Limited, of Lower Priory, Dalton-street, and Dale End, Birmingham, showed in addition to a series of chemical and pharmaceutical preparations a milk food reinforced with glycerophosphates of calcium, magnesium, and sodium known as "vitafer." Mr. Richard Maurice, of Bedford Chambers, Covent-garden, London, W.C., represented Messrs. Brusson Jeune, the makers of the diabetic bread known by their name. It is not claimed that this bread is free from starch—and our analysis has shown that starch is present—but it has been considerably reduced, the amount of protein being proportionately increased. The protein amounts to nearly 40 per cent., while the carbohydrates amount to 50 per cent. An excellent assortment of foods for diabetic and plethoric patients was shown by Messrs. G. Van Abbott and Sons, of Baden-place, Crosby-row, Southwark, S.E. These included gluten bread (starch free), gluten flour, semola, and biscottes. Besides there were table jellies, almond biscuits, bran biscuits, and so on. To emphasise the merits of barley water was the chief object of Messrs. Keen, Robinson, and Co.'s exhibit, of Denmark-street, St. George's-in-the-East, London, E., who showed specimens of Robinson's patent barley and patent groats. In addition there were shown at this stall examples of Colman's medical mustard bran, concentrated mustard oil, and Colman's sinapisms. Messrs. Callard and Co., of 74, Regent-street, are well known for their endeavours to make the diet of the diabetic an agreeable and a scientific one. They showed starchless and sugarless breads, biscuits, cakes, rusks, and sugarless marmalade, jams and jellies, fruits, chocolate, and milk. Messrs. J. Reynolds and Co., Limited, of Albert Flour Mills, Gloucester, showed some admirable specimens of wheatmeal bread, and also various grades of wheats, the whole exhibit affording an excellent object-lesson as to the valuable constituents in flour which should not be eliminated. There was a large selection of active digestive ferments on the stall of Messrs. Armour and Co., of Atlantic House, Holborn-viaduct, London, E.C., besides a series of special foods. Their essence of pepsin, elixir of enzymes, glycerine extract of red bone-marrow, glyco-lecithin, and vigoral, a highly concentrated beef preparation, deserve special mention. Messrs. Savory and Moore, Limited, of 143, New Bond-street, exhibited a number of foods which have enjoyed a well-deserved reputation. Amongst these were peptonised milk preparations, coffee and chocolate, and a useful malted food. Their "new chemical food," or fructole of red bone-marrow and glycerophosphates, is giving excellent results in defective nutrition, anæmia, and so forth. Messrs. Brand and Co., Limited, of Mayfair Works, 74 to 84, South Lambeth-road, Vauxhall, London, S.W., showed their well-known "essences" of beef, mutton, veal, and chicken, which are now put up in glass. There were besides a number of special foods for the invalid, which, apart from nutrient merit, appeal to an indifferent palate. Cerebos salt (Cerebos, Limited, of 3, Maiden-lane, London, E.C.), the pioneer of dry powdery salt which does not cake, exhibited their speciality, while not far away was the stall of Virol, Limited, of 152-166, Old-street, London, E.C., where specimens of virol were shown. There is now abundant practical evidence in favour of the value of this complete food in wasting diseases. It contains marrow fat emulsified with carbohydrates (active malt extract), including red marrow, and phosphates are plentiful. Its special nutritive value has received considerable testimony. An interesting selection of food products and adjuvants was shown by Messrs. Fairchild Brothers and Foster, of 64-65, Holborn-viaduct, London, E.C. There were panopepton containing peptonised lean beef and wheat flour, pepsencia containing the active digestive principles of the gastric juice, lecithin in the forms of elixir and glycerole, the "nerve food," and a number of carefully prepared digestive products known as "pepules."

The food exhibits were of a special rather than of a general kind, and showed in many directions advances on previous attainments.

IV.—SANITARY APPLIANCES.

The exhibition here was small. There was a curious falling off in the number of disinfectant preparations shown. The Jeyes' Sanitary Compounds Company, Limited, of 64, Cannon-street, London, E.C., were represented in a comprehensive series of disinfectant preparations the basis of which is cyllin, an effective bactericide, while it is much less toxic than carbolic acid. A profusion of antiseptic preparations with different active agents to do the work of disinfection was exhibited by the Sanitas Company, Limited, of Locksley-street, Limehouse, London, E. Peroxide of hydrogen, formaldehyde, phenolic fluids (sanitas-bactox, a clear fluid forming a white soapy emulsion with water, and sanitas-sypol, a clear soapy fluid which forms a clear mixture with water), sanitas (oxygenised turpentine) sulphur candles, and so forth, made up a stall crowded with sanitary appliances. Messrs. Slack and Brownlow, of Abbey Hey, Gorton, Manchester, showed several models of their simple and effective germ-proof filter made for high and low pressure. There were also shown a hospital filter made for dealing with hot and cold water for use in the operating theatre, and a "sanitary bulb" for automatically diffusing disinfectant into the water of the flushing tank. Close by were specimens of flooring polished with the sanitary paste, ronuk, of Ronuk, Limited, of 16, South Molton-street, London, W. Ronuk is obviously an application which conduces to a sanitary environment. It is used on hospital floors with marked success.

V.—MINERAL WATERS, BEVERAGES, ETC.

A feature of this section in previous years has been the demonstration by photographs, literature, &c., of the merits of certain of our leading watering places. There were but a few represented on this occasion. The brine baths of Droitwich, which enjoy a deserved reputation in the treatment of rheumatic affections, found illustration at one stall, and stress was laid upon the advantages which this place offers to those who seek a nerve- and rest-cure. Buxton was also represented in a series of photographs which sufficed to show how alive to the modern requirements of a spa the authorities at this health station are. The exhibit was under the direction of Mr. F. J. C. Broome, the manager. The Apollinaris Company, Limited, of 4, Stratford-place, Oxford-street, London, W., exhibited samples of their well-known natural bitter saline purgative water, Apenta, the action of which is due chiefly to the sulphates of magnesia and soda present, but carbonate of sodium is an important constituent, giving the water a soothing effect upon the lining of the stomach and bowel. There were also examples of Apollinaris, a really alkaline table water and antacid; and Johannis water, with and without lithia. Messrs. Ingram and Royle, of 45, Belvedere-road, London, S.E., had a quite exhaustive series of mineral waters on their stall. There were the Carlsbad waters, Carlsbad sprudel salt (evaporated from the spring itself),

Vichy water, Contrexéville, Friedrichshall (saline aperient), Giesshübler (a clean alkaline table water), and Hunyadi Janos (a bitter purgative saline water from the famous springs near Budapest). Friedrichshall water was also represented at the exhibit of Messrs. C. Oppel and Co., of 10 and 12, Milton-street, London, E.C. In addition to the sulphates of magnesium and sodium it contains relatively large amounts of the chlorides of sodium and magnesium, which render the water alterative and an aid in metabolism.

VI.—PUBLICATIONS.

There was an interesting collection of modern medical works to be found on the stalls of several well-known publishers. Amongst the publishers represented were: Messrs. Iliffe and Sons, Limited, of London and Coventry, the proprietors of *The Autocar*, which provides information and advice to medical men in regard to the use of motor-cars; the Oxford Medical Publications (Henry Frowde); Messrs. Macmillan and Co.; Messrs. Rebman, Limited; Mr. E. A. Brooke Williams; Mr. H. K. Lewis; Messrs. John Wright and Sons, Limited; the W. B. Saunders Company; and Messrs. J. and A. Churchill.

VII.—MISCELLANEOUS.

Amongst the miscellaneous exhibits worth recording was the gas-heating apparatus of Messrs. John Wright and Co., of 19 and 21, Queen Victoria-street, London, E.C., who showed the "Eureka" gas fire fitted with a patent thermo fire-front with a big radiating surface, and a gas-heated boiler in which the consumption of gas is controlled by an automatic valve which enables the water to be heated and kept hot with a small amount of gas. The underclothing material known as "Aertex cellular," shown by the Cellular Clothing Company, of 72 and 73, Fore-street, London, E.C., also made an interesting exhibit. The material is comfortable and light whilst sufficiently protective to the body. A specially dyed red Aertex fabric was shown for tropical use, the view being that such a material cuts off the greater part, at all events, of the actinic rays of the sun.

BRITISH PHARMACEUTICAL CONFERENCE.

THE PRACTICE SECTION.

THE newly constituted Practice Section of the British Pharmaceutical Conference has held its first meeting at Portsmouth in connexion with the Conference whose proceedings we briefly noted the week before last. Until this year the Conference has devoted itself almost entirely to scientific matters, but a large number of members having expressed the desire that the scope of the work should be enlarged so as to embrace subjects of more general pharmaceutical interest, the rules of the Conference were altered to permit of the inauguration of the new section. Accordingly, in addition to the papers read in the Science Section, abstracts of which have already appeared in THE LANCET,[1] subjects of a non-technical character were discussed at the forty-eighth annual meeting.

Mr. J. C. UMNEY presided, and the first subject considered was that of Secret and Proprietary Medicines. Recently the Conference caused an inquiry to be made among over a hundred local pharmaceutical associations in the United Kingdom with the object of ascertaining the views of pharmacists regarding the sale of these articles. The result of this inquiry was announced by Mr. E. S. PECK, one of the honorary secretaries of the Conference. It appears that the sale of proprietary remedies is considerable in all districts, and, according to replies received, proprietary remedies are ordered by medical practitioners in many localities. Replies to the various questions were received from 103 associations. To the question, "Are the proprietary articles which are ordered by prescriptions, usually single substances made up by a patent process, or under a protected name—e.g., veronal, stovaine, &c.—or mixtures which any competent pharmacist might be supposed to be able to prepare if the formula were known"? the replies were: Single substances, 6 per cent.; mixtures, 6 per cent.; both single substances and mixtures, 84 per cent.; neutral, 4 per cent. The replies to other questions indicate that the majority of pharmacists would welcome legislation requiring manufacturers to declare the principal ingredients of proprietary remedies, and that a large body of opinion is in favour of joint action being taken by medical and pharmaceutical bodies to bring about a more satisfactory state of affairs. The result of this inquiry having been explained, a discussion was opened by Mr. E. F. HARRISON. Describing various kinds of proprietary remedies, some good and some very bad, he said a strong case could be made out for certain classes of remedies, as, for instance, such as are not of secret composition; if a man by his special experience discovered some new way of combining certain medicines of known value so that their efficiency is increased he was entitled to profit by his special knowledge. He expressed the opinion that legislation should be introduced to make it impossible for fraudulent quack medicines to be sold, and suggested that it would be enough to require the declaration on the label of the names of all the principal ingredients and the exact quantities of any coming within the poison schedule or possessing great activity. He thought the proprietor might be allowed to keep to himself the nature of subsidiary ingredients used, for example, as emulsifying or flavouring agents, and the exact proportions in which the different constituents were combined. For several reasons he thought any legislation on this subject should be preceded by a thorough public inquiry. The discussion was continued by a number of speakers. Mr. J. C. UMNEY, who is chairman of the Proprietary Articles Section of the London Chamber of Commerce and chairman of the Proprietary Articles Trade Association, said that so far as he could find out the bulk of the proprietors of proprietary medicines would be willing to give a certificate of a negative character stating that their preparations do not contain noxious ingredients. Mr. R. A. ROBINSON, an ex-president of the Pharmaceutical Society and a former chairman of the London County Council, considered the retailing of articles for which extravagant claims were made was an illegitimate form of pharmacy. The SECRETARY of the National Food Reform Association expressed the hope that before long the Government would find time to take up the question. On the motion of Mr. HARRISON, seconded by Mr. WIPPELL GADD, a proposition was carried unanimously, calling upon the Government to institute a public inquiry into the advertising and sale of proprietary secret remedies and the law relating thereto with a view to further legislation for the prevention of fraud and quackery.

In the same Section a paper was read by Dr. F. BEDDOW, Vice-Principal of the Portsmouth Technical College, on the Education of the Pharmacist from the Point of View of the Teacher. In his view the present system of educating the pharmacist is by no means an ideal one, and he hoped that when changes were introduced the education of the student would be considered as the important thing and the examination as of secondary importance, and that regulations would be made ensuring that successful candidates shall have received such education as can be obtained without excessive cost to themselves. He hoped the present system of testing candidates by oral and practical examination would be retained and that the written examination and the production of notebooks would be looked upon as an additional help in deciding the candidate's qualification. A discussion followed the reading of the paper.

The National Insurance Bill was then considered and a resolution was carried expressing approval of certain recommendations passed at a special meeting of the Joint Standing Committee of the British Medical Association and the British Pharmaceutical Conference. These recommendations, which were not all confirmed by the British Medical Association, were to the following effect: (1) That the principle be affirmed that the dispensing under the proposed scheme be done through the channels provided by the Pharmacy Acts, and that provision should be made in the Bill for the carrying out of the Chancellor's expressed intention that this work should be done by pharmacists; (2) that insured persons should be allowed free choice of pharmacists; and (3) that provision should be made for exclusion from medical and maternity benefits of persons whose average income from all sources exceeds £2 a week. The principles of the first two of these recommendations were embodied in Clause 14 of the National Insurance Bill during the Committee stage in the House of Commons last week.

At the concluding session of the Conference on July 27th Sir Edward Evans was elected President for 1911–12, and an invitation to hold the next annual meeting in Edinburgh was accepted.

[1] THE LANCET, July 29th, 1911, p. 319.

THE LANCET.

LONDON: SATURDAY, AUGUST 12, 1911.

The Cholera.

In another column a valued correspondent deals in a suggestive manner with the present situation of cholera in Europe, while our correspondent in New York draws attention to the apprehensions in the United States. The fears, freely expressed by numerous epidemiologists at the close of last year, that a recrudescence of cholera would be seen in Europe during the present summer, and that the disease would again become epidemic, have unhappily been realised. Cholera already appears to be extending from two chief centres—Italy and Turkey—and is now threatening a number of countries into which the infection has been imported. Our readers will remember that the epidemic which prevailed in Italy last year subsided about January of the present year, the last cases being notified at Taranto in the extreme south of the Italian peninsula. Nothing more was heard of the disease until early in June, when almost simultaneously announcements appeared that cholera was epidemic in certain places which had last year suffered severely from its ravages, including Naples and Palermo, with their adjoining districts. Up to the middle of July upwards of 1400 cases have been officially notified in a period of about five weeks. So far as can be judged by the published figures the virulence of the existing strain of the cholera organism in Italy is not great, the recorded case mortality rate being a little less than 31 per cent. More recently extensions of the infection have occurred in Northern Italy, groups of cases having been reported in the province of Genoa at Spezzia and elsewhere, and at Leghorn on the coast of Tuscany. In some other districts "cholerine" is said to be prevalent, and there is some suggestion that certain outbreaks of so-called "typhoid fever" are in reality manifestations of cholera infection. Naturally some alarm has been created, and one result has been the postponement until next April of the meeting of the International Congress on Tuberculosis, which was to have been held at Rome in September. Correspondents in the continental press allege that the true incidence of cholera in Italy is not recorded in the returns published by the Italian Government, and that the occurrence of outbreaks is being concealed by the authorities in order that foreign visitors may not be frightened away. The statement is also made in the continental papers that as many as 200 cholera cases have occurred in quite a short period at Venice, and a number of others at Rome, without either of these towns appearing in the official list of infected places, and further, that no notification of these cases in Rome and Venice has been made to the European Powers as required by the terms of the Paris Convention. It is asserted that the policy of concealment practised at Naples last year is being repeated at the present time at other infected towns. How much truth there is in these allegations we are not in a position at present to say, but the suggestion is a very serious one and demands immediate attention.

From Italy cholera has been carried into France, a group of cases having occurred at Marseilles, and also into certain districts in Austria, including Trieste, Gratz, and Cattaro in Dalmatia on the eastern shore of the Adriatic, the source in each instance being traced to some Italian infected district. In some cases we hear that the eating of infected oysters or other shellfish by tourists in certain infected localities in Italy had resulted in attacks of cholera. On shipboard the disease has been carried from Naples and Palermo by Italian emigrants to the United States of America, 25 cases having already occurred in connexion with the port of New York and one at Boston. Some of the attacks occurred during the voyage across the Atlantic, others after arrival at the quarantine station when the passengers were undergoing five days' observation, while yet others occurred after the termination of the detention period in quarantine and after the passengers had proceeded to their destinations. These occurrences have given serious cause for alarm to the American port sanitary officers, who say that while it is comparatively an easy task to prevent the entrance into the States of persons ill with cholera, it is far more difficult to deal with cholera bacilli carriers who are themselves on arrival apparently in good health. On the advice of its medical experts the Government of the United States has issued a fresh order to the national, State and local quarantine officers, collectors of customs, shipowners, and agents, and to all others whom it may concern, that, with a view to diminish the danger from bacilli carriers, steerage passengers from ports or places infected by cholera shall be detained for ten days for observation, unless after five days (the previous period of detention) they are found not to be bacilli carriers. The importation of food by the arriving Italian emigrants was also forbidden. These new measures, however, in less than a fortnight were supplemented by another order, dated July 19th, providing that all steerage passengers arriving at ports in the United States from infected places shall be subjected to a bacteriological examination, and shall not be admitted to entry into the States until it has been determined by this examination that they are not carriers of the cholera bacillus. It is obvious that these new regulations, necessitating as they do bacteriological examination of the fæces of large numbers of persons, will entail a considerable amount of additional work upon the staff of the State and port authorities. In our opinion, it would be very difficult to carry out such systematic examination at English ports. It is not denied that much more care is necessary in America than with us in England to prevent danger arising from the introduction of cholera germs into a country where it is admitted frankly that sanitary circumstances and administration generally are not so satisfactory as with us, and where in some places particularly the public water-supplies have not been sufficiently safeguarded or protected from excremental pollution. These extra precautions now enforced in America may be regarded as the penalty paid for postponing necessary sanitary reforms until danger has actually arisen.

In Turkey, the second centre of diffusion of the cholera infection, the disease has of late been extremely prevalent in

parts of Asia Minor, especially in Smyrna and Samsun and in the districts along the southern shores of the Black Sea. In Constantinople cases have been occurring, sporadically, it is said, but here, as elsewhere in Turkey, the authorities for their own purposes have minimised the outbreak. There is evidence that the infection is spreading in the Turkish provinces; an outbreak is now reported among the soldiers on service in the disturbed districts of Upper Albania. From Turkey cholera has been conveyed into Greece and Bulgaria, and perhaps also into Roumania, but this as yet lacks confirmation. It is somewhat strange that so little has been heard of cholera this year from Russia, where for three years in succession the malady has been widely epidemic and where in 1910 no fewer than 216,000 cases were reported with 101,000 deaths. Scattered groups of cases have, however, been already reported in June or July in the basin of the Volga in the governments of Kazan, Samara, and Astrachan; in Southern Russia at certain Black Sea ports in the governments of Kherson and Ekaterinoslav, and at Baku on the Caspian Sea. There is an entire absence of mention of cholera at St. Petersburg which has usually in past years suffered severely; it is possible that this present immunity may be due to the measures recently taken to "sterilise" the water for the city's public supply taken from the polluted River Neva. It is said that now first of all the water is clarified by the addition of sulphate of aluminium, then sent through rapid filters and afterwards passed to the "sterilising" towers, where it is mixed with ozonised air by means of Otto injectors. In Western Russia a few cases have been notified in the government of Minsk, which is near the borders of Poland, and at least one fatal case has occurred in Vitebsk on a raft coming down the river Dwina (or Düna), which is navigable for upwards of 400 miles of its course, and which flows into the Baltic Sea at Riga. It has generally in former years been the Baltic ports which were regarded as the greatest source of danger from cholera to this country. Up to the time of writing there is no indication of any present danger from that quarter. Should cholera invade the Baltic ports in August or September less danger is to be apprehended than if they had become infected earlier in the year, as there would be less time for the epidemic to develop before the advent of the colder weather, when commonly the infection spontaneously subsides. But in England we place our reliance mainly in the excellence of our sanitation and administration to protect us from the dangers which chance importation of cholera infection might bring to us, as we have pointed out on many previous occasions in these columns.

The National Insurance Bill.

ON Friday in last week the Chancellor of the Exchequer briefly reviewed what had been done in Committee of the House of Commons in respect of the National Insurance Bill, and while he drew attention to points of difficulty ahead, he congratulated the House upon having made very substantial progress. As far as the profession of medicine is concerned—and on every side of this far-reaching measure we find medicine directly or indirectly affected—the clauses of the Bill as amended in Committee, though not escaping criticism, have been received by our readers with satisfaction. Dr. CHRISTOPHER ADDISON'S valuable amendment, by which the administration of medical benefits was transferred to the Local Health Committees, has naturally called forth a protest from the Friendly Societies. The President of the National Conference of Friendly Societies, a body which is said to represent a membership of 6,000,000, with funds of £40,000,000, is quoted in the press as saying that there is considerable dissatisfaction throughout the Kingdom in consequence of the amendment, "whereby a plan which had resulted in an amicable understanding between Friendly Societies and their medical men was taken away." The President of the National Conference of Friendly Societies has been living, it would seem, in a fools' paradise if he really believes that the relations between the medical profession and the Friendly Societies have hitherto been cordial. While we grant now, as we have done often in our columns, that in some instances the medical officer to clubs and medical aid associations has been properly treated, the evidence has always been overwhelming that such cases were the exception and not the rule. Our columns have over and over again described the distressing circumstances which marked contract medical work done under the auspices of medical aid associations, and the wish was unanimous in the medical profession to be free from the control for the future of the Friendly Societies in the matter of the distribution of medical benefits. We have no doubt whatever, as the President of the National Conference of Friendly Societies is reported to have said to a representative of the *Daily Telegraph*, that the societies would have been prepared, if the discretion had been left with them, to increase the allowances made to their medical officers; they must have been only too well aware that no other course was open to them. But the medical profession has felt all along that in the hands of the societies their interests were not safe; in the past the complaints of the medical officers of the societies were too often not attended to; their professional position was not recognised; their efforts to obtain adequate remuneration even met with determined resistance. If those favourable concessions, which we now learn that the Friendly Societies would have been willing to make under the Bill, had been spontaneously offered, or had been granted years ago in response to the numerous protests of their medical officers, the public would be more ready to see the objections which are seen by the Friendly Societies to Clause 13 as now amended. But with full experience of what the relations between Friendly Societies and their medical officers have been in the past we rejoice at the transfer of the distribution of medical benefits to the Local Health Committees.

Clause 14 as amended may on reflection, we think, be considered, as we termed it last week, a medical triumph. We admit to the full the simplicity and advantage of a wage limit, but we have never been able to shut our eyes to the fact that the arguments which would be brought forward against such a proposal in the House of Commons would inevitably prevail. The process of ascertaining whether the wage limit had or had not in any individual instance been exceeded would be difficult and vexatious; employment, though much better than heretofore, and though never so

precarious in the upper grades of labour as in the lower, is still an uncertain thing, and many of the insured persons will hardly know exactly what their average incomes are; lastly, the conditions of employment in different centres, and in town and country, vary so largely that a man making on an average £75 a year in one place may be substantially richer than a man making £104 in another. Of course the agreement of the House of Commons to the clause definitely committed the medical profession to a form of contract practice, but it would seem that a majority of our readers are reconciled to this principle, so long as safeguards can be maintained against any oppressive methods of its application. The position will now be fair or unfair to the medical profession according as the Local Health Committees are able to make adequate arrangements with the medical profession, and Dr. ADDISON'S admirable amendment securing local option in respect of contracts ought to fulfil his expectations as set out in our Parliamentary report. The Local Health Committees are to be appointed with the approval or at the instance of the Insurance Commissioners (one of whom is to be a medical practitioner) by the county councils, the county borough, and the contributors, and upon these bodies the local sanitary authorities and the medical profession will be represented. The county medical officer of health will attend the meetings. In these circumstances it seems to us that our position should be safe. Resistance to the legitimate recognition of those upon whom, after all, depends the whole working activity of the Bill has been sufficiently demonstrated in the House of Commons during the recent discussions in Committee to be small and factious. We have ourselves always believed that the people of this country, a country which has stood in the van of civilisation by reason of its splendid charities and its organised sanitary service, probably desired efficient medical service, and therefore would be willing to grant the necessary facilities for obtaining it. Undoubtedly difficulties may yet arise between the Local Health Committees and the local medical profession, but in our view the present attitude of the public towards the medical profession is a warrant for the belief that in questions of dispute we shall get a fair hearing. The desire of the Local Health Committees will be to ensure the public health of the local communities.

There is still considerable anxiety felt with regard to the position of the voluntary hospitals under the Bill. The belief is general that the out-patient departments will be relieved, but that any benefit that may accrue to the hospitals in this manner will be lost by an increased pressure upon the in-patient department. Hopeful people see in the measure a promise of the introduction of order into the dispensation of medical charity. Less cheerful people fear lest the voluntary subscriptions to hospitals, both of employer and employed, should fall off when compulsory payments to invalidity insurance begin. If the hospitals had been placed in the same position as sanatoriums with regard to sick benefits their pecuniary position would be less anxious, but the control of the Local Health Committees, which would have followed, might have been very difficult to carry into effect. The obvious method of preventing the waste of labour that takes place in the out-patient departments of voluntary hospitals, and at the same time of dealing with the curse of hospital abuse, is to bring the out-patient departments of the hospitals into touch with the work of the general practitioner, the out-patient departments being used mainly in a consultative capacity. Before the vast scheme of the National Insurance Bill was outlined the suggestion made by most who gave heed to a very difficult situation was the development of provident dispensaries, whereby these institutions would become sorting-houses for the out-patient departments. Under this idea, through the machinery of the dispensaries those patients could be ascertained who could not pay adequate fees. The medical officers of the dispensaries would recommend to the hospitals the suitable cases for treatment, and in this way the hospitals would be supplied with the proper scientific cases without having their charity abused, while quite poor patients would obtain the advantages of coöperation in medical treatment. If the Local Health Committees were placed in a position to subsidise the hospitals they would form a direct link between private contract practice and the out-patient departments of the great charities; but we think that in any event the work of these bodies must have an enormous effect in the near future on our national health.

Annotations.

"Ne quid nimis."

THE WEATHER OF JULY.

FOR several years the summers in this country have been both too cold and too wet. The farmer has also sometimes had occasion to deplore the persistent rain and the lack of seasonable heat. This year it is possible that the mischief resulting from the lack of rain has been almost, if not quite, equal to that caused by the gloom and wet of the few summers preceding. The wind direction on which the temperature at all times of the year so much depends was generally favourable for warmth. As a rule, it came from a southerly point of the compass, often from south-east. Reaching this country from the heated continent after such a short sea passage as the English Channel the air was perceptibly warmer than usual on its arrival. If it had come from the westward after a long passage over the relatively cold waters of the Atlantic the sunshine in these islands would hardly have raised its temperature to 90°, except perhaps in East Anglia. In this country great summer heat which is at all permanent is dependent on two principal factors. The barometer must be high, or rather so, and uniform over a wide area, so that the flow of air from whatever quarter may be light; and the sky must be sufficiently denuded of cloud to allow much sunshine. However high the temperature may be it begins to fall soon after the wind becomes really strong—i.e., a steady flow of air at the rate of upwards of 25 miles an hour—and great heat is never maintained for more than a day or so with an overcast sky. The weather of July was dry in all parts of the kingdom, but the duration of the drought was much longer in the south-eastern and southern counties of England than elsewhere. Over a large area in those districts the drought, according to Dr. Mill, the well-known rainfall authority, was the most severe, taking the extremely high temperature into consideration, of which there is any record. Longer droughts have been experienced, but in the present case the 25 rainless days were nearly all abnormally hot, and the humidity of the

atmosphere always very slight. The effect of the drought on the soil was consequently aggravated very considerably. London, at all events the central portion of it, is generally the most torrid spot in the kingdom during a spell of hot summer sunshine, and it was so on the majority of the days of last month. Occasionally, however, the temperature in other parts of south-eastern England was quite as high, notably at Margate. That resort, while it is much cooler than London and its vicinity during bright weather with the wind from some northerly or easterly point of the compass, is, in common with the other resorts facing the North Sea, very hot whenever there is much sunshine accompanied by a gentle flow of air from the south-west or west. London and its suburbs may be taken as representing fairly the average temperature in the home counties and south midlands, and the figures below show the means both of the maximum and minimum reading for the month, and also the mean temperature of the month, with the difference from the average at the various stations in the metropolitan area :—

	Mean maximum.	Mean minimum.	Mean temperature.	Difference from average.
Kew	79° ...	56° ...	67·6° ...	+4·8°
Greenwich ...	81 ...	55 ...	68·3 ...	+4·6
Hampstead ...	77 ...	57 ...	66·7 ...	?
Westminster ...	79 ...	58 ...	68·6 ...	+4·7

It will be seen that in spite of the high mean of the maximum the difference of the mean temperature from the average of the month was not particularly large—less than 5° at all the stations. This is explained by the fact that the minimum temperature of the nights was often very little above the average. Considering the great heat of the afternoons the nights were relatively cool, the thermometer more frequently falling to below 60° than remaining above it. Westminster was, as would be expected, warmer at night than the outlying places, while during the afternoons elevated Hampstead was the coolest spot. The highest reading recorded was 96° on the 22nd, Greenwich and Westminster both having the same degree of heat, while at Hampstead the thermometer touched 92°, and at Kew 89°. At Greenwich there were as many as 18 days with a temperature above 80°, but at Hampstead there were only 9, at Kew 12, and at Westminster 15. It is very seldom that these islands enjoy as much sunshine as countries in the same latitude on the Continent, and it is probably true that it would be beneficial both to the public health and to agriculture if they had more. But last month, at all events, there was enough and to spare. In many parts of southern and eastern England a new record was established, a record which is not likely to be broken for a generation. At several of the resorts the total number of hours was about 380, or at least 12 hours a day, this high figure being recorded in various places between the coast of Kent and Torquay. Along the west coast the figure was more moderate, but as far north as Llandudno there was a mean of nine hours a day. London's allowance was lower than that of the south coast, but was nevertheless a record, and was about three hours a day above the normal. At Kew the figure equalled 336 hours and at Greenwich 334 hours, while at Hampstead it was 329 hours, at Westminster 319 hours, and in the City 300 hours. An average of nearly nine hours a day for the City is extremely high. During July of last year there were only 94 hours and only 102 hours at Westminster, while at Greenwich and Kew the respective figures were 113 and 111 hours. Throughout France and Germany, and also in the Netherlands and at times in Switzerland, the heat was generally greater than in this country, and the drought was also very pronounced. At Paris the mean maximum temperature was as high as 83° and the total number of hours of sunshine 357.

A NEW SIGN OF ACUTE INTESTINAL OBSTRUCTION.

IN the *Journal of the American Medical Association* of June 17th Dr. H. G. Watson has described a new sign of acute intestinal obstruction, or rather a modification of an old sign, which promises to prove useful in early diagnosis. Fæcal vomiting is one of the cardinal signs of intestinal obstruction, but when the practitioner is called to a case there may be no vomiting, or if there has been vomiting the vomit may have been thrown away without its characters having been noted. The following case led Dr. Watson to suggest a new method of ascertaining the condition of the stomach contents. A married woman, aged 45 years, had undergone an abdominal operation for some pelvic inflammation 12 years previously. It was necessary to use a drainage-tube for several weeks. Subsequently she enjoyed perfect health. One Sunday evening, after eating a good dinner, she felt so nauseated and distended with gas that she took two enemas, with good results. But the abdominal pain increased and she began to vomit. At 11 P.M. her medical attendant was called and treated her for acute indigestion. On Monday she was no better, and on Tuesday she was worse. Dr. Watson saw her on Wednesday. She was in good condition; the temperature was 99° F., the respirations were 30, and the pulse was 100. The diagnosis was still acute indigestion. She complained of considerable abdominal pain and her abdomen was so distended that she said she could hardly breathe. She had vomited, but none of the vomit was saved. As far as her medical attendant and nurse knew there had been no fæcal vomiting, and the stomach was thought to be empty. On examination a splashing sound was obtained down to the pubes. Acute dilatation of the stomach was diagnosed. Dr. Watson passed a stomach-tube and to his surprise expressed over two quarts of dark brown fluid with a fæcal odour. On examination the fluid proved to be fæcal. Acute intestinal obstruction was then diagnosed. Laparotomy was performed and the ileum was found strangulated by a small band of adhesions. The intestines were much distended and it was difficult to relieve this condition in consequence of many adhesions due to the previous operation. Recovery rapidly ensued. Dr. Watson suggests that as an aid to diagnosis in acute abdominal disorders the stomach-pump should be passed from hour to hour and the contents carefully examined. If these are of a dark brown colour with a fæcal odour acute intestinal obstruction may be diagnosed. Dr. Watson thinks that by this means early diagnosis would be facilitated.

A VILLAGE SANATORIUM.

WE have received a copy of a brochure by Mr. H. G. Richter, a French architect, entitled "Contribution à l'Étude des Sanatoria Populaires—le Village Sanatorium." The preface has been written by the Countess of Aberdeen. After a brief review of the principal varieties of sanatoriums now in existence, the author sets forth his views as to the most desirable form which such an institution should take. He considers that it should be built as a small village in which the patients should be encouraged to perform suitable labour. He does not consider manual work absolutely necessary, but after reading a description of the method of treatment adopted at the Brompton Hospital Sanatorium at Frimley he considers that the patients would benefit by performing graduated labour of a kind useful to village life. His chief contention is that anything in the way of a hospital, both as regards building and daily life, should be completely eliminated. He advises that the buildings should not be of a permanent character, but so constructed that

they can be destroyed at a period to be settled by consultation between the physician in charge and the architect. He lays stress on the good psychical effect which such an institution would have on the patients; it would prove, he says, that they are not dependent upon hospitals; it would give them confidence that "cure" is likely to follow, and it would restore hope that they need not always be useless individuals. Mr. Richter gives details of the "village" which he has planned. It would accommodate 300 patients, with the necessary medical and administrative staff. From an architectural point of view the proposed plan is to be commended; the difficulty would naturally be with the selection of suitable cases. That certain patients obtain much benefit by sanatorium treatment combined with suitable exercise and manual labour has been definitely proved, but the application of this method necessarily has its limitations. For selected patients Mr. Richter's village would undoubtedly be of great service.

HODGKIN'S DISEASE.

THE nature and pathology of the condition to which the name of Hodgkin's disease is usually applied have always been matters of controversy, and the numerous alternative names which have been given to it, such as lymph-adenoma, *adénie*, pseudoleukæmia, lymphomatosis, malignant lymphoma, and malignant aleukæmic lympho-adenoma, bear witness to this. Recent histological and other observations upon the tissues in this disease have, however, at last served to establish its identity as a separate condition, although the actual exciting agent has so far not been recognised. An interesting and exhaustive monograph upon this disease has recently been published by Dr. Kurt Ziegler[1] of Breslau, which should be of special value, since not only is the literature of the subject most carefully reviewed, but the clinical and pathological features are described in detail upon the basis of personal observation of over 70 cases, 16 being confirmed by necropsy, while in 40 the nature was established by the microscopical examination of a gland excised for this purpose. At different times and by different authors the disease has been regarded as neoplastic in character, as an inflammatory affection, and as a condition allied to leukæmia. Dr. Ziegler maintains that there can no longer be any doubt that Hodgkin's disease is a specific inflammatory granulomatous affection, and that although the exciting cause is as yet undiscovered it is specific. Its special peculiarity is its predilection for the lymphatic tissues at first, which though not absolute is very nearly so, in spite of the fact that its secondary manifestations may be very widespread. It is convenient to recognise two stages in this affection—the first or local stage, and the second or stage of generalisation. An analysis of 120 cases showed that the glands in front of and behind the sternomastoid muscle were first affected in 50 per cent., the supraclavicular glands and those at the angle of the jaw in 6 per cent., the axillary in 10 per cent, the spleen in 9 per cent., the mediastinal and inguinal glands each in 3 per cent., while in 12 per cent. no glands were discoverable on external examination. The first or local stage is very variable in duration and may last weeks, months, or years. When the stage of generalisation is reached, the swelling of the glands becomes widespread. The spleen is enlarged in 65 to 70 per cent. of the cases, and the liver in 60 per cent. Pressure symptoms from the enlarged glands are very common, and cachexia, anæmia, and fever, as a rule, supervene. The blood changes are usually of the character of the secondary anæmias. The number of red corpuscles may only be slightly reduced, or may sink to 1,000,000 per cubic millimetre. The blood-platelets are usually increased; the leucocyte count is variable. It may be considerably increased, and there may be a neutrophile leucocytosis. On the other hand, there may be an actual diminution in the number. There is usually a moderate increase in the eosinophiles and in the large mononuclear cells, while the number of lymphocytes is, as a rule, diminished. The duration of the disease in Dr. Ziegler's cases was longer than a year in less than 50 per cent., while in 18 per cent. it was three months or less. He recognises a number of different clinical types—viz., an acute form, localised and general forms, a type with the clinical characters of a mediastinal tumour, a typhoid form, in which the manifestations are very similar to those of enteric fever, a splenomegalic type, and a form with ostitic and periostitic characters somewhat resembling multiple myeloma. Other less clearly differentiated varieties are an intestinal type, Mikulicz's disease with symmetrical swelling of the lacrymal and salivary glands, and a form simulating mycosis fungoides. The histological changes are described as being so characteristic as to confirm their specific origin. The special features consist in the proliferative character of the inflammatory processes and in the formal reactive cellular arrangement of the proliferating tissue elements. There is also, as a rule, very marked eosinophilia of the local inflammatory cell infiltration. The final stage is one of connective tissue induration. Dr. Ziegler differentiates three different types: in the first two there is an increasing disappearance of the lymphatic cellular elements with a simultaneous proliferation of the connective tissue cells. In one form there is marked leucocytic infiltration; in the other it is entirely absent. The third type is characterised by pure lymphatic cell proliferation. These changes are examined in great detail by Dr. Ziegler, who also gives an interesting review of the etiology of the disease, and of the various agents, such as bacteria, spirochætæ, and Much's rods, which have been regarded as possible causal agents. He also discusses the diagnosis, prognosis, and treatment of the disease. He refers to the various methods of giving arsenic, including the injection of atoxyl and salvarsan. Operative and X ray treatment are also considered. A very full bibliography completes a valuable and interesting monograph upon this obscure and puzzling disease.

[1] Die Hodgkinsche Krankheit. Von Dr. Kurt Ziegler, Privat-docent in Breslau. Jena: Gustav Fischer. 1911. Pp. 264. Price 9 marks.

TREATMENT OF LEPROSY IN EGYPT.

THE Census of 1907 made the somewhat alarming discovery that there are more than 6000 lepers in Egypt, which is a number at least double that which has previously been mentioned in official figures. The Public Health Department has not yet devoted much time or study to this question, and there are as yet no laws upon the subject. But we are glad to see in the last annual report of that department that it is suggested that beggars and vagabonds affected with leprosy should be isolated, and that lepers should not be allowed to make or sell cigarettes and certain foods, nor should a leper be permitted to be an indoor servant or cook. With regard to treatment, as we remarked in our issue of June 3rd, chaulmoogra oil, among other remedies, has been tried and found wanting, so far as the cure of the disease is concerned, although it is useful for the alleviation of symptoms. There seems to be a consensus of opinion on this point. Dr. Engel, the German Director of Statistics of the Public Health Department of Egypt, and one of the few people in that country who for years have been interested in leprosy, however, has found chaulmoogra oil the most valuable remedy for leprosy. But as many patients were unable to continue its use he obtained a purified form of the oil, sold under the name of "anti-léprol," which is a clear limpid oil, with hardly any smell and

without disagreeable taste, and, moreover, without the secondary ill-effects, such as loss of appetite and indigestion, which chaulmoogra oil so often causes. He praises antiléprol highly, and finds that it is useful in both the nodular and nervous types of the disease. It is best prescribed in progressive doses, from 30 to 60 drops daily after meals in hot milk, and can be given in capsules. Children take half the dose of adults, and smaller amounts have to be given to a few people who seem unable to take it in ordinary doses. During the whole length of treatment, which may have to extend over three or more years, the patients must take care of their digestion, and must avoid salted food, such as fish, cheese, and vegetables. Dr. Engel now reports[1] the result of his treatment of 72 individuals, two-thirds of whom live in Cairo or in the adjacent provinces, and adds to his pamphlet several photographs of Egyptian lepers, some of which show slight amelioration after the use of the drug. His chief object in writing is to persuade the Wakfs Administration, who have sometimes been called the Ecclesiastical Commissioners of Egypt, to build a hospital for lepers where many out-patients can continue to be treated and a certain amount of police inspection might be instituted. In the interest of Egypt we hope that this may be done.

PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE IN MITRAL STENOSIS.

SINCE paralysis of the left recurrent laryngeal nerve was first described by Ortner in 1897 37 cases have been recorded. The notes of those cases in which a necropsy was performed show much difference of opinion as to the cause of the paralysis. In the *American Journal of the Medical Sciences* for May Dr. G. Fetterolf and Dr. G. W. Norris have given the results of a careful investigation made in order to clear up the discrepancies. Their work consisted in an analysis of all the published cases and an examination of sections of hardened thoraces. Observations were not made on soft bodies because the opening of the chest allows so much collapse and the manipulations of dissection cause so much distortion that normal relations are much altered. Ortner reported two cases and ascribed the paralysis to compression of the nerve between the arch of the aorta and the distended left auricle. He found the nerve discoloured, compressed, and ribbon-like. In the following year Herrick recorded a case in which, in addition to a dilated left auricle, there was chronic adhesive pericarditis, the nerve being embedded in a mass of cicatricial tissue as well as compressed by the auricle. In 1901 Krause reported a case. He took exception to Ortner's explanation, and concluded that the paralysis, though associated with dilatation of the left auricle, was indirectly due to hypertrophy of the left ventricle, which by changing the position of the heart as it lay on the diaphragm altered the relation between the pulmonary artery, the aortic arch, and the aortic ligament in such a way as to cause the ligament to drag on the recurrent nerve. In other cases the nerve is described as compressed between a patulous ductus arteriosus and the aortic arch, between the left pulmonary artery and the aorta (the former being pushed up by the dilated auricle), and between the dilated pulmonary artery and the aorta, and finally as pressed upon by enlarged peribronchial and peritracheal glands. As the result of their anatomical studies Dr. Fetterolf and Dr. Norris conclude that the left auricle can expand readily in but one direction—upwards; posteriorly it rests against the aorta and œsophagus; anteriorly it is limited by the right auricle and left ventricle, and below by the right auricle and liver. Should it become dilated it would press upward and backward, thrusting the left pulmonary artery against the aorta, the left pulmonary vein against the left pulmonary artery, and forcing the distal portion of the latter against the aorta. Later the proximal part of the left pulmonary artery would be jammed upward and backward, mainly by the root of the left upper pulmonary vein. The nerve would thus be squeezed between the pulmonary artery and the aortic arch or ligamentum arteriosum. But direct pressure of any portion of a dilated left auricle on the aortic arch is impossible. When the softness of all the structures involved is considered, as well as the fact that the nerve is normally flattened against the aorta, it seems probable that the paralysis is not due to destruction of the nerve by pressure but to neuritis so excited. In the absence of a necropsy reports of cases of recurrent paralysis in mitral stenosis due to auricular pressure should be received with scepticism, for, as stated above, the paralysis may be due to other causes such as the pressure of enlarged glands.

[1] Professor Dr. Engel Bey: Traitement de la Lèpre, Munich, 1910.

THE PRISON COMMISSION OF SCOTLAND.

WE have been informed that one of the Commissioners of the Scottish Prison Commission is about to retire, and we take the opportunity of pointing out how strong the arguments are that, if any vacancy should occur, it should be filled by a medical man. A Grand Committee of the House of Commons, a Departmental Committee of the Home Office, a Royal Commission on Irish Prisons, and a Scottish Departmental Committee on Prisons have all at different times pointed out the value of a medical voice at the deliberations of such a board; and a remarkable expression of opinion in the House of Commons last year proved that, in the opinion of the Legislature, the arguments for the creation of medical Prison Commissioners are very strong. Undoubtedly the presence of a medical commissioner greatly improves the administration of a Prisons Board, and increases the confidence of the public. We went into the whole matter recently when Mr. M. L. Waller, the possessor of only secretarial credentials, replaced Sir Horatio B. Donkin on the English Prison Commission, and the need for a medical member upon these Commissions is greater now than ever since the passing of the Inebriates Act, for example, added to the duties of the bureau. It seems to us that it will be particularly unfortunate if a medical man is not appointed to any vacancy that may occur on the Scottish Prisons Board, for an opportunity will thus be lost of giving effect to an opinion very strongly held by responsible persons. On such boards medical views should be heard at first hand.

WE regret to learn of the death of Dr. Samuel Jones Gee, consulting physician to St. Bartholomew's Hospital, which occurred rather suddenly on August 3rd.

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the committee grants amounting to £158 were made to 15 cases. As the current account already showed a deficit of £54 it was necessary to draw largely upon the reserves, and the committee looks forward with grave anxiety to the heavy demands which will be made upon the resources of the Fund during the next two or three months. Contributions are greatly needed and may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W. Appended is an abstract of the cases relieved:—

Daughter, aged 54, of late L.R.C.P., L.S.A. Is a candidate for a pension from a charity and meanwhile helped by friends. Recently lost a brother who also helped. Relieved three times, £15. Voted £5.

Daughter, aged 31, of late L.R.C.P., L.S.A. Since death of father

14 years ago has supported herself as a general servant, waitress, &c., but has now broken down in health and is at a convalescent home. Asks for a little help for temporary maintenance after leaving the home. Voted £5.

M.R.C.S., aged 83. Has been incapacitated for several years and dependent on a son who is no longer able to help. Voted £5 and recommended to apply for an old-age pension.

Daughter, aged 54, of late M.R.C.S. Receives a home in return for services but cannot do much on account of a long-standing physical infirmity. Relieved three times, £15. Voted £5.

Daughter, aged 67, of late M.R.C.S. Has supported herself for many years by nursing but is no longer fit for work and is endeavouring to obtain a pension from another charity. Relieved twice, £24. Voted £12.

Daughter, aged 42, of late M.R.C.S. Is a trained nurse, but for some few years has suffered from chronic glaucoma and is now quite unable to earn a living. Relieved three times, £25. Voted £10.

Widow, aged 49, of M.R.C.S. Endeavours to support herself by a boarding house and has established a good connexion but has been obliged to incur heavy expenses owing to the illness of three of her children. Relieved once, £10. Voted £10.

Daughter, aged 30, of late M.D. Dub. Unable to support herself on account of continued ill-health and is dependent on her mother whose sole income is £30 a year. Relieved six times, £40. Voted £10.

Daughter, aged 64, of late M.R.C.S., L.R.C.P. No means and unable to maintain herself on account of mental deficiency. Relieved five times, £60. Voted £12.

Widow, aged 50, of M.B., C.M. Edin. Dependent on income of £20 a year and such profits as she can make by taking boarders during the summer. Seven children, three of whom earn nominal salaries. Relieved 12 times, £138. Voted £12.

Widow, aged 63, of L.R.C.P. Lond. Sole means of support a furnished house, which is at present unlet. Children unable to help. Relieved once, £12. Voted £12.

Daughter, aged 59, of late M.R.C.S. Was fairly provided for but lost her capital through the defalcation of a friend. Relieved seven times, £92. Voted £12.

M.R.C.S., aged 72. Practised in London for several years, but now has cataract in both eyes. Relieved once, £18. Voted £18.

Daughter, aged 68, of late M.R.C.S. Used to keep a school, but was obliged to give it up on account of failing health, and is now dependent on a brother who can ill afford to help. Relieved twice, £24. Voted £12.

Widow, aged 60, of L.R.C.P., L.R.C.S. Dub. Did maternity nursing for several years but is now nearly blind. No children. Relieved 17 times, £161. Voted £18.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8284 births and 4940 deaths were registered during the week ending August 5th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been equal to 11·8, 12·1, and 13·6 per 1000 in the three preceding weeks, further rose to 15·9 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these towns averaged 13·1 per 1000, while in London during the same period the mean annual death-rate did not exceed 12·6 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 7·5 in Tottenham and in Northampton, 8·0 in Stockton-on-Tees, 8·2 in Barrow-in-Furness, and 8·7 in Walthamstow, to 21·3 in Middlesbrough, 21·5 in Walsall and in Birmingham, 22·0 in Rhondda, and 23·6 in Aston Manor. The 4940 deaths from all causes in the 77 towns last week exceeded the number recorded in the previous week by no fewer than 730, and included 1340 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 722 in the five preceding weeks. Of these 1340 deaths, no fewer than 1168 resulted from infantile diarrhœa, 57 from whooping-cough, 53 from measles, 40 from diphtheria, 14 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 4·3 per 1000, against 1·4 and 2·3 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 533 in the five preceding weeks, further rose last week to 1168, and caused the highest annual rates of 7·4 in Bootle, Newport, and Cardiff, 7·5 in Rhondda, 7·9 in Warrington, 8·2 in Wigan, 8·8 in Birmingham, and 9·0 in Aston Manor. The deaths referred to whooping-cough, which had been 43, 52, and 56 in the three preceding weeks, numbered 57 last week; the highest death-rates from this disease were 1·0 in Newcastle-on-Tyne, 1·1 in Wolverhampton, 1·4 in Sunderland, 1·6 in West Hartlepool, and 1·7 in Walsall. The 53 fatal cases of measles were 9 fewer than the number recorded in each of the two preceding weeks, and included 23 in London and its suburban districts, 7 in Manchester, 5 in Liverpool, and 3 in Salford and in Bolton. The deaths attributed to diphtheria last week numbered 40, against 40 and 42 in the two previous weeks, and included 8 in London, and 3 each in Stoke-on-Trent, Liverpool, Blackburn, and Leeds. The 14 fatal cases of scarlet fever showed a further decline upon recent weekly numbers, and included 4 deaths in Stoke-on-Trent, 3 in London, and 2 in Norwich. The 8 deaths from enteric fever were 3 fewer than the number in each of the two previous weeks; 2 deaths were registered in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1412 in the 16 preceding weeks, had further increased to 1433 on Saturday last; 191 new cases of this disease were admitted to these hospitals during the week, against 204, 199, and 209 in the three previous weeks. These hospitals also contained at the end of last week 854 cases of diphtheria, 286 of measles, 269 of whooping-cough, and 43 of enteric fever, but not one of small-pox. The 1344 deaths from all causes in London last week showed an increase of 159 upon the number returned in the previous week, and included 91 which were referred to diseases of the respiratory system, against 113 and 115 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had declined from 194 to 173 in the three previous weeks, rose to 223 last week, and 412 inquest cases were registered. The causes of 33, or 0·7 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death during last week were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Portsmouth, Salford, and in 53 other smaller towns; the 33 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 5 in Liverpool, 3 in Stoke-on-Trent, and 2 each in Manchester, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 866 births and 452 deaths were registered during the week ending August 5th. The annual rate of mortality in these towns, which had been 13·9 and 14·9 per 1000 in the two preceding weeks, declined last week to 13·8. During the first five weeks of the current quarter the annual death-rate in these Scotch towns averaged 14·4, and was 1·3 per 1000 above the mean rate during the same period in the large English towns. The annual death-rates in the eight Scotch towns last week ranged from 7·3 and 8·6 in Perth and in Paisley to 15·4 in Glasgow and 18·7 in Greenock. The 452 deaths from all causes in the eight towns last week showed a decrease of 36 from the number in the previous week, and included 62 which were referred to the principal epidemic diseases, against 63 and 73 in the two previous weeks; of these 62 deaths, 33 resulted from diarrhœa, 11 from measles, 7 from whooping-cough, 6 from diphtheria, 3 from enteric fever, 1 from scarlet fever, and 1 from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·9 per 1000, the mean rate last week from the same diseases in the 77 English towns having been 4·3. The deaths from diarrhœa, which had increased from 14 to 40 in the four preceding weeks, declined to 33 last week, and included 26 of infants under two years of age; 17 deaths occurred in Glasgow, 5 in Leith, 4 in Edinburgh, 3 in Dundee, and 3 in Greenock. The fatal cases of measles, which had been 6, 9, and 4 in the three previous weeks, rose to 11 last week, and included 9 in Glasgow. The deaths attributed to whooping-cough, which had been 17 in each of the two preceding weeks, declined last week to 7; 6 deaths were recorded in Glasgow and 1 in Aberdeen. The three deaths referred to enteric fever were slightly in excess of the numbers returned in recent weeks and were all recorded in Glasgow. The fatal case of scarlet fever was registered in Glasgow and that of small-pox in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had been 51 and 48 in the two preceding weeks, declined to 32 in the week under notice, and were 27 below the number in the

corresponding week of last year. Of the 452 deaths from all causes in the eight towns last week, 153, or 34 per cent., were recorded in public institutions, and 31 were attributed to different forms of violence. The causes of 17, or 3·8 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

The annual rate of mortality in Dublin, which had been 19·8 and 22·5 per 1000 in the two preceding weeks, declined to 18·9 during the week ending August 5th. During the first five weeks of the current quarter the death-rate in Dublin averaged 19·2 per 1000, whereas the mean rate during the same period did not exceed 12·6 in London and 15·3 in Edinburgh. The 146 deaths of Dublin residents from all causes last week showed a decrease of 28 from the number returned in the previous week, and included 41 which were referred to the principal epidemic diseases, against 22 and 48 in the two previous weeks. These 41 deaths were equal to an annual rate of 5·3 per 1000, the death-rate from the same epidemic diseases last week being equal to 4·2 in London and 1·0 in Edinburgh. Of the 41 deaths from these epidemic diseases in Dublin last week, 29 resulted from infantile diarrhœa, 5 from measles, 4 from whooping-cough, 2 from enteric fever, and 1 from scarlet fever, but not one from diphtheria or from small-pox. The deaths attributed to infantile diarrhœa, which had increased from 4 to 34 in the four preceding weeks, declined to 29 in the week under notice, while the deaths from the remaining epidemic diseases showed but slight variation from the numbers recorded in recent weeks. The 146 deaths at all ages included 53 of infants under one year of age, and 23 of persons aged upwards of 65 years; the deaths of infants were 7 in excess of the number in the previous week, while those of aged persons showed a decline of 12. Of the total deaths 37, or 25 per cent., occurred in public institutions. The causes of 3, or 2·1 per cent., of the total deaths last week were not certified; in London all but one of the causes of death were duly certified, while in Edinburgh the proportion of uncertified and unspecified causes of death amounted to 2·5 per cent. In the City of Belfast the death-rate during the week ending August 5th was equal to 16·6 per 1000, against 16·3 and 14·2 in the two preceding weeks. The 123 deaths from all causes included 25 which were referred to the principal epidemic diseases, against 22 and 24 in the two previous weeks. These 25 deaths were equal to an annual rate of 3·4 per 1000, and included 21 from infantile diarrhœa, 2 from whooping-cough, and 2 from diphtheria. All the causes of death in Belfast last week were duly certified, and 39, or 32 per cent., of the total deaths occurred in public institutions.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors to be Lieutenant Colonels:—Thomas McCulloch, vice Sir J. Fayrer, Bart., retired (dated July 29th, 1911); John Ritchie, vice T. H. F. Clarkson, retired (dated July 29th, 1911); Stuart Macdonald, vice D. M. Saunders, retired (dated 29th July, 1911); Maurice P. C. Holt, D.S.O., vice H. W. Austin, retired (dated July 29th, 1911); William L. Gray, vice G. W. Brazier Creagh, retired (dated August 2nd, 1911); and Edward G. Browne, vice D. Hennessy, retired (dated August 2nd, 1911).

The undermentioned Captains to be Majors (dated July 27th, 1911):—William A. Woodside, Littleton F. F. Winslow, Otto W. A. Elsner, Arthur A. Seeds, Henry S. Anderson, Langford N. Lloyd, D.S.O., Thomas C. MacKenzie, D.S.O., Edward P. Connolly, James H. R. Bond, and Harold H. Norman.

Colonel T. J. R. Lucas, C.B., Principal Medical Officer of the Jhansi and Jubbulpore Brigades, has arrived home on leave of absence from India. Lieutenant-Colonel M. L. Hearn, at present serving in the Dublin District, has been placed under orders by the War Office for a tour of service in Ceylon. Major G. St. C. Thom, commanding the Station Hospital at Subathu, Simla District, has been granted one year's extension of his tour of service in India by H.E. the Commander-in-Chief. Major F. M. Parry has been placed under orders to proceed to Mauritius during the ensuing trooping season for a tour of foreign service. Major W. P. Gwynn has been transferred from Karachi to the Station Hospital at Quetta. Major T. MacDermott, specialist in ophthalmology at the Royal Herbert Hospital, Woolwich, has been selected to command No. 2 Cavalry Field Ambulance at the coming manœuvres on Salisbury Plain. Captain J. T. Johnson, from the Station Hospital at Bareilly, has taken up duty at Ranikhet. Captain H. C. Hildreth, from Dublin, has been placed in medical charge of the Artillery Camp at the Glen of Imaal. Captain J. M. B. Rahilly, on return from a tour of service in Egypt, has been appointed to the Woolwich District. An exchange on the roster of foreign service has been approved by the War Office between Captain M. F. Foulds, specialist in advanced operative surgery at Belfast, and Captain A. F. Carlyon, at present doing duty at the Military Hospital at Devonport. Captain R. E. U. Newman has been transferred from Rawal Pindi to the Military Hospital at Murree. Captain E. J. Kavanagh has joined the Station Hospital at Ranikhet from Delhi. Captain E. M. Middleton, from Amritsar, has been appointed to the Station Hospital at Rawal Pindi. Captain R. G. Meredith, on completion of a tour of foreign service at Malta, has been placed in Medical Charge of the Troops at Totley Camp. Captain A. A. Seeds, at present attached to the Military Hospital at Hounslow, has been placed under orders to proceed for a tour of duty with the Northern Army in India during the coming trooping season. Captain W. L. Baker and Captain R. J. C. Thompson have arrived home on leave from abroad. Captain G. W. G. Hughes has been appointed for duty in the Northern Command. Captain G. F. Sheehan, who is serving in India, has been appointed Specialist in Mental Science to the Northern Army. The following officers have been placed under orders by the War Office to proceed to India for a tour of service with the Southern Army during the coming trooping season: Lieutenant R. C. Prinst, Lieutenant R. C. Paris, Lieutenant A. W. Bevis, Lieutenant M. J. Williamson, Lieutenant M. White, and Lieutenant J. R. Yourell. Lieutenant W. J. Dunn, from Kirkee, has taken up duty at the Military Hospital, Colaba. Lieutenant R. O'Kelly has been transferred from the Bangalore Brigade to the Meerut Division and posted for duty with the Bareilly Brigade at Ranikhet. Lieutenant A. G. Jones, from the Military Hospital at Tidworth Park, has been placed in Medical Charge of the Artillery Camp at Lark Hill, Salisbury Plain. Lieutenant D. E. C. Pottinger, from Lucknow, has taken up duty at the Station Hospital, Bareilly. Lieutenant D. H. C. MacArthur has been transferred from Ambala Cantonment to the Military Hospital at Dagshai. Lieutenant J. A. Clark, from London, has joined for duty at Cairo.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions:—Lieutenant-Colonels to be Brevet Colonels (dated Jan. 1st, 1911): William Burney Bannerman and Henry Francis Cleveland. Captain to be Brevet Major (dated Jan. 1st 1911): Samuel Rickard Christophers.

The King has approved of the retirement of the undermentioned officers:—Surgeon-General Percy Hugh Benson (dated July 26th, 1911). Lieutenant-Colonel James Farquarson Maclaren (dated June 24th, 1911).

Lieutenant-Colonel W. R. Edwards, C.M.G., has been appointed by the Foreign Department of the Government of India to be Administrative Medical Officer of the North-West Frontier Province, in succession to Lieutenant-Colonel A. L. Duke, appointed to Baluchistan. H.E. the Governor of Bombay in Council has appointed Lieutenant-Colonel H. C. L. Arnim to officiate as Sanitary Commissioner for the Government of Bombay during the absence on deputation of Lieutenant-Colonel T. E. Dyson. Lieutenant-Colonel A. Coleman has relinquished charge of the duties of superintendent of the Multan District Jail to Captain W. W. Jeudwine. The services of Lieutenant-Colonel H. Hendley, civil surgeon of Lahore and professor of forensic medicine to the Government College at Lahore, have been placed at the disposal of the Government of India by the Punjab Administration. Lieutenant-Colonel C. H. Bedford, who has for several years been in charge of the Excise Laboratory at Kasauli as Chemical Expert, has been

granted leave of absence home from India for six months. Major E. D. W. Greig, assistant director of the Central Research Institute at Kasauli, has been granted eight months' leave of absence home from India. Major E. M. Illington has been transferred to Vizagapatam as Civil Surgeon and Superintendent of the Medical School. Major P. Dee, on return from leave, has been appointed Civil Surgeon at Mandalay, in succession to Major A. Fenton, transferred to Rangoon. Major H. S. Wood, on return from leave, has been appointed Civil Surgeon of the Rajshahai District. Captain C. G. Seymour has been appointed by H. E. the Commander-in-Chief as Specialist in the Prevention of Disease to the Dehra Dun Brigade, and has been placed in charge of the Bacteriological Research Laboratory at Dehra Dun. Captain L. B. Scott, on return from leave, has been appointed to Sylhet as Civil Surgeon. Captain H. Steen has joined for duty at the Presidency General Hospital at Calcutta during the absence on leave of Captain B. Foster. The services of Captain J. Kirkwood has been placed temporarily at the disposal of the Government of Madras. Lieutenant I. H. Bonnar has been appointed Civil Surgeon of the Garo Hills District.

TERRITORIAL FORCE.

Royal Army Medical Corps.

5th London Field Ambulance, Royal Army Medical Corps: Lieutenant William C. Macaulay to be Captain (dated June 13th, 1911).

Attached to Units other than Medical Units.—Lieutenant Frederick J. Green to be Captain (dated April 11th, 1911). Captain Edmund E. Dyer to be Major (dated July 5th, 1911).

For Attachment to Units other than Medical Units.—Arthur Edward Gladstone to be Lieutenant (dated May 16th, 1911). John Brabant Bate to be Lieutenant (dated June 17th, 1911).

The Southern General Hospital, Royal Army Medical Corps.

The 4th Southern General Hospital, Royal Army Medical Corps, has just completed the 15 days' annual training at the Military Hospital, Devonport. The camp consisted of two officers and 32 non-commissioned officers and men, with Major H. W. Webber and Lieutenant W. H. Scrase. Lieutenant-Colonel C. E. Russell Rendle commanded the unit.—The 2nd Southern General Hospital, Royal Army Medical Corps, from Bristol is now at the Military Hospital, Devonport, for the annual course of training.

Correspondence.

"Audi alteram partem."

THE CHOLERA CLOUD ON THE CONTINENT.

To the Editor of THE LANCET.

SIR,—While anxious to avoid creating any unnecessary alarm, may I say that it will be unpardonable neglect if sanitary authorities ignore the early symptoms indicating the possibility of a general outbreak of cholera. The fact that the Seventh International Congress of Dermatology and Syphilology and the Seventh International Congress on Tuberculosis which were to meet at Rome next September have been postponed is in itself a sufficiently serious matter. The Congress on Tuberculosis would have been a particularly important event. The preceding Congress met at Washington in the United States three years ago and some 6000 members attended. Among these no less than 800 came from Europe. Some members living in remote colonies and intending to attend the Congress at Rome have by this time left their homes, and one delegate from New Zealand has already arrived. To disappoint these distant travellers and to put off a congress of such importance is only justifiable in the face of some grave danger. Certainly, to judge from the cases of cholera reported during the last few weeks, they have nearly all come from Italy. Though occurring at Trieste, Gratz, Vienna, Marseilles, the patients had arrived from Italy. Even on the other side of the Atlantic the ships that have been detained at the New York quarantine station had travellers on board who came from Italy and who seemed to be, or in some cases actually were, suffering from cholera.

It is not necessary, however, for cholera to spread in Italy before the other western nations of Europe may consider themselves menaced. In Russia, it is true, the cholera has prevailed for several years without affecting the west of Europe, but it has now reached Constantinople, and from thence has travelled westwards to Bulgaria and Roumania, cases having occurred at Sofia and Bucharest. A Constantinople telegram dated August 2nd states that 43 cases of cholera and 22 deaths had occurred in that town within the previous 48 hours. If correct, such figures mean a great deal more than what we frequently hear about a few sporadic cases that generally occur during the hot weather. Thus there is no disguising the fact that we are once again exposed to the risk of a widespread outbreak such as occurred in 1892 and 1893.

There should be, however, an all-important difference. During the 18 or 19 years that have elapsed very great improvements have been effected. It is true the water fanatics rather discounted the moral teaching of the last epidemic. Important as it is to secure an ample and pure water-supply, this did not, and does not, suffice to prevent cholera epidemics. In 1907 there were published in THE LANCET an account and plans drawn to scale and photographs of certain slums which still remained at Hamburg.[1] These narrow, overcrowded courts had not been altered or improved notwithstanding the appalling havoc wrought in them during the epidemic of 1892. At Hamburg the water-supply was generally condemned as contaminated and this was altered promptly, elaborately, and at great expense. On the other hand, sufficient attention was not given to the fact that the cholera death-rate varied from 4·48 per 1000 inhabitants of the Harvestehude quarter to 27·50 per 1000 inhabitants of the Veddel quarter, though both these quarters of Hamburg received identically the same water-supply. So far as large towns were concerned, the most fatal epidemic after Hamburg was that of Havre, and here the water-supply was never suspected. On the contrary, some convincing statistics were published showing that it was not contaminated. But at Havre to-day, as at Hamburg, there still remain streets and courts, veritable fever dens, inviting all epidemics. At Havre, as at Hamburg, some of these danger centres have been pulled down, but some still remain standing. Therefore, all the danger is not dispelled. Something has been done, but not enough.

The extreme poor of most of our large cities still huddle together in overcrowded, dark, badly ventilated, dirty dwellings. Many more have not the excuse of extreme poverty. Their homes are insanitary because they are slovenly, indifferent, intemperate, incompetent, and idle in all matters of domestic management. Such a population is a culture ground for the cholera germ, and as long as all large cities can show a population of this kind, however small a section of the whole, we are not safe. To-day, in truth, everybody professes to believe in the necessity of sanitary measures and improvements. The difficulty remains, however, that epidemics are only prevented by far-reaching reforms, such as the draining of a district, the rebuilding of insanitary areas; and these public works cannot be carried out at the last moment when some urgent danger presses upon us. These things should be written about and spoken about when all is quiet, but it is just during those happy times of quietude that no one will listen. We must have a cholera epidemic, or a very close approach to one, before the general public will pay any real attention to the question. That science may know better does not help, for the needed reforms will not be efficacious nor will the money to pay for them be forthcoming unless the general public is quite convinced as to their necessity.

Nor is our civic morale yet all that it should be. Builders and speculators in unwholesome property still exist, and overcrowded tenement dwellings bring in large incomes to their owners; all of which means that many persons are actually interested in thwarting sanitary reform. At any rate they are willing that such changes as must be made should be made slowly. Hence it is not surprising that the obvious lessons to be derived from the cholera epidemics of 1892 and 1893 have not produced all the good expected from

[1] THE LANCET, Dec. 7th and 14th, 1907.

them at the time. The suffering, the dead, and the fear of death were forgotten too soon. Now perhaps an epidemic is upon us again, and it is too late to lament over the little use made of the 18 years of respite.

Of course, much has, as a matter of fact, been done, but not nearly so much as should have been done. To use a familiar simile, it is as if war had begun again. The early cases notified may be compared with the enemy's scouts and skirmishers who may be said to have crossed the frontier and invaded our part of Europe. Will they report that they have seen food for plunder and thus entice the main body to invade our lands; or will they return crest-fallen because they found everything so clean and in such good order that it did not seem worth while attempting a general attack? The cholera invasion of 1892 was not so successful as the previous outbreak of the same character, so perhaps this time the enemy may not venture on more than threats such as those recorded above. Should this, fortunately, prove to be the case, it is to be hoped that the alarm raised will suffice to draw attention to the fact that many of the obvious lessons taught by the previous epidemic have not yet been fully applied.

I am, Sir, yours faithfully,

Fulham, August 8th, 1911. ADOLPHE SMITH.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—As an alienist physician and a teacher with a not inconsiderable experience of mental diseases, and being acquainted with the care of epileptics suffering from mental symptoms, I consider it to be my duty to offer advice to your correspondent (of July 29th) who desires to have his epileptic son of 12 sterilised to prevent his having children if he should live to a marriageable age.

Let me be certain about the actual state of this boy. Presumably there are no (or only slight) mental symptoms, for otherwise detention in a special institution under special treatment would meet the circumstances, whilst the epilepsy itself, although it would seem not to prohibit matrimony should the son reach his majority and then care to exercise his privileges, is yet of such a nature as to disqualify for the ordinary avocations of life and is non-traumatic. Altogether this opportunity to discuss a very vexed question in eugenics acknowledges that you are conscious of the "signs of the times," and it will certainly afford the medical profession and others the means of ascertaining views presented on both horns of a very difficult dilemma and upon a matter of great public importance.

In spite of the tendency on the part of Nature towards the normal, and in spite of the apparent disposition of the germinal molecules to sustain and reproduce under favourable conditions of selection what is healthy and normal, epilepsy in my opinion, and in that of others who have studied and written upon the subject, has been proved by irrefragable statistical evidence to be the most heritable of all the neuroses and of all mental diseases; that is to say, "pure" epilepsy, or even epilepsy associated with insanity, is more often the antecedent of epilepsy than is insanity of insanity; and this is probably known to your correspodent, who by his suggestion in regard to this disease *a fortiori* suggests the treatment for many other less prominent neuroses—thus proposing to extinguish or at any rate to endeavour to prevent the extension of epilepsy in his own descendants.

The first question is whether we, as doctors, are to consider ourselves bound mainly to do the best we can for the individual or whether our care is to be for the race, and possibly the view taken depends on the ethical standard accepted by each person who ventures upon advice. Personally I am strongly in favour of the individualist view, for I conceive the ethical end to be the "perfection" of our patient, and this in the most active, most moral, and most intelligent direction consistent with time, circumstances, and environment.

As to the legal and moral aspect, a father is morally bound—i.e., by custom, by family ties, and by blood relationship—to do the best in his power for his son (or daughter), because the solidarity of the family is the essential principle to be kept in view in any community, and parental responsibility must be uppermost for the head of the family. He is bound to sustain, to preserve, and to shield his son from harm, so that his son's mental and physical powers, whether limited or of the ordinary range, may develop to the greatest perfection, and so that he may derive from them the greatest use and happiness.

The question of operation (or according to some "mutilation") for mental deficiencies or bodily ailments, is, in my opinion, not one to be entertained by the father, for he is concerned only with fostering the directly self-preservative instincts of his offspring—speaking generally, those relating to his own livelihood—and not those remotely relating to posterity. Legally, therefore, he has no option, but I am not a lawyer, and to him posterity is an unrealisable responsibility; still, if the community should enforce such an ordinance as sterilisation for its own future welfare, which it is entitled to do, then the parent is bound to accede to such indirectly self-preservative rules as may be agreed. I have no doubt in my own mind that the race would greatly benefit in physique by such enactments, but possibly not equally so in moral and mental qualities, for I look upon the presence of human weakness as a moral appeal to the strong and as serving a useful purpose in the moral development of any people.

I should like to be informed at what limit—i.e., for what defects—are such mutilations to cease? Are such operations to apply only to epileptics or those who are insane, some of whom we know occasionally recover completely? If for these, then why not for inebriates and criminals, or those with cancerous or tubercular tendencies, or those who are predisposed to paralysis, and if for these, again, why not for other persons who may be deficient in other forms of self-control, those, for instance, who inordinately gratify appetite and passion, those who are wanting in thrift and other prudential considerations, or for that matter those who exhibit the unpardonable crime of political defection or for any other apostasy? Furthermore, who is to be the final arbiter? And is the father himself averse from being subjected to the operation to prevent the possibility of more epileptic descendants?

The treatment least trying to parents and most acceptable to the main body of opinion in this country would be the provision by the State (or the local authority), with the sanction of Parliament, of a "home" wherein such cases could be made busy and happy, in which their lives would be fully occupied with employment congenial and graded to their abilities, and where their health and pastime could be adequately supervised. In this direction alone, in my opinion, lies the best and only justifiable solution. We are as yet unprepared for the (?) moral effect of a large number of "sterilised" men (and, of course, women) in the community; and even the State of Indiana, U.S.A., where 700 such persons are already said to exist, is blenching at the prospect!

Let me, in conclusion, relate an experience. I once had the care of a young medical man who had been the favourite pupil and "interne" of one of the physicians to the late Queen Victoria. He developed delusions, under the influence of which he so mutilated himself that he removed the whole of the external genitalia. Later, he sank into a state of unambitious passivity, without the desire or the capacity to originate conversation or to heed his surroundings. His mental state was that of careless and listless indifference to outward stimuli. He could occasionally be roused by questions referring to his past life, but he took no interest in the present or the future, which was beyond the power of any appeal to effort or action. He lounged or sat about, a slovenly inert wreck, dishevelled, self-neglectful, untidy, and personally disordered—a state of living death worse than could happen to the average epileptic who not infrequently enjoys a useful interparoxysmal life. That such a state was partly the result of sex "mutilation" admits of no doubt in my mind, and such reducing mental consequences of "restrictive" eugenics must not be overlooked. I am strongly of opinion, after consultation with the titular heads of the medical profession, that suggestions in regard to sterilisation are at the present moment premature and would not be tolerated. They have no moral support and certainly, at present, they have no legal justification.

I am, Sir, yours faithfully,

Claybury, August 3rd, 1911. ROBERT JONES, M.D. Lond.

To the Editor of THE LANCET.

SIR,—The sterilisation of the unfit is legalised in the State of Indiana and also in Switzerland. In the former several hundreds of cases have been performed with very successful

results, but so far as I know eugenic sterilisation has never been done in Great Britain. Assuming, however, that the law permits it, in my opinion a surgeon would be morally right in acceding to the request of the parent who desired that an epileptic child should be sterilised. Nay, I would go further, and after careful delving into the family history, should it be apparent that there is some morbid flaw in the mosaic of the germ plasm of the parents, I would strongly advise that they also should be sterilised if still capable of producing offspring. The method which should be adopted is most important. Castration is crude and brutal; X rays uncertain and inefficient; the simplest, the best, and the most permanent would be vasectomy, which makes no difference to the bodily functions, has no ill-effects, secondary sexual characters would be developed, and nothing would be prevented but the power of procreation.

The answer to the question depends upon whether you regard the rights of the individual as absolute and the claims of the race as non-existent. If you do, sterilisation will be an accursed thing; if not, it will be gladly welcomed. As marriage is the supreme eugenic institution, why should an epileptic child be permitted to grow up, marry, and produce offspring suffering from physical and mental defects? Is marriage the intimate personal affection, the spiritual tie, the indissoluble union, which purifies the passions of the sexes and raises us above the level of the beasts? Is marriage for the sake of parentage and parentage a trust for the race? Must we be ever satisfied that the ghastly burden of disease of body and mind should be freely transmitted from age to age and no steps be taken to dam the overflow of this reeking cesspool? Should we leave open the flood-gates through which has poured a devastating torrent of degraded humanity? Mr. Roosevelt has said "A nation's chief blessing was that it should leave its seed to inherit the land. No refinement of life, no delicacy of taste, no material progress, no sordid keeping up of riches, no sensuous developments of art and literature, can in any way compensate for the loss of the great fundamental virtues, and of these great fundamental virtues the greatest is the race's power to perpetuate the race." Ruskin stated that the veins of wealth are purple and that the Divine intent of all wealth is the production of a healthy race.

The unfit should have the right to live, and live well—no one will question that—but the right to propagate should be denied them. The average quality of a race is but the average quality of the individuals composing it. If the physically and mentally weak be allowed to propagate, and if, as it seems to be the case at present, they reproduce themselves faster than the better strains, the relative numbers of such persons in the country must increase and the average quality of the race deteriorate. The best stocks are postponing marriage and restricting the number of their offspring. The latter are producing motor-cars, the former children.

> "Better, oh better, cancel from the scroll
> Of universe one luckless human soul,
> Than drop by drop enlarge the flood that rolls
> Hoarser with anguish as the ages roll."—FITZGERALD.

I am, Sir, yours faithfully,

Claybury, August 1st, 1911. C. T. EWART, M.D. Aberd.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—In to-day's LANCET (July 29th) Major H. C. French, R.A.M.C., replies to the criticisms of myself and others on his paper on this subject that appeared in THE LANCET of June 24th. The party system in politics, by insuring searching criticism, gives the country the opportunity of arriving at an unbiassed opinion on the questions at issue; and likewise with any new therapeutic agent it is essential that adverse critics should be found to lay before the medical public all the possible evidence against the new treatment. The medical profession must always be equally indebted to the opponents and advocates of any new "specific."

Major French observes the rules of debate and with courtesy replies to criticism, and it is a matter of regret that Mr. Ernest Lane makes no attempt to reply to my criticism of his published opinion. Mr. Lane has apparently changed his mind in regard to the danger and value of salvarsan treatment, and makes it a grievance that I should have thought that he meant what he said in December last, which I quoted as the only record of his opinion that I can find. Major French quotes me as writing in support of the great value of inunctions and injections of mercury as shown by the Wassermann reaction. I am sorry that he thought my advocacy of salvarsan meant detraction of mercury. That this is not my view is shown by the paper that I wrote with Dr. A. Manuel in the *Practitioner* for June, where we concluded that "salvarsan when it does produce an alteration of the serum reaction does so more rapidly than mercury. On the other hand, in the present state of our knowledge it would appear that the percentage of negative results after one or two injections is lower than that observed after a year's course of efficient mercurial treatment." The Wassermann reaction frequently becomes negative after one or two courses of inunction or injection, but these negative reactions are rarely permanent, whereas after salvarsan apparently about 75 per cent. of cases that become negative as the result of such treatment remain so.

I am entirely in accord with Major French's quotation of Mr. Boas's opinion as to the superiority of Wassermann's original technique and the importance of *quantitative* estimations. My modifications are solely trifling matters of technique, with the exception that I use alcoholic extract of rabbit's heart in place of alcoholic extract of syphilitic organs. I have made parallel experiments, using rabbit's heart extract and syphilitic organ extract supplied from Professor Wassermann's own laboratory, and have obtained practically identical results with both, the very slight difference being in favour of the heart extract. At the British Medical Association discussion on the Diagnostic Use of the Complement Fixation Method that took place in July, 1910, and was opened by a paper from Professor Wassermann, I had the honour of reading the second paper. I then said[1]: "Many observers have tried to simplify the test and obviate the necessity for using rabbits and guinea-pigs by making use of the complement and hæmolysin for sheep's corpuscles present in human blood serum. It seems to me, however, that the most essential of all factors in a comparative test such as this is that all factors except the one to be tested should be constant. With Hecht's, Bauer's, Stern's, or Fleming's technique, however, variants are substituted for constants, for the complement content of human serum varies greatly, and some human serums contain no hæmolytic antibody to sheep's corpuscles, while others contain some but in varying quantities." Later on I said: "I have for the last six months used two strengths of complement and so obtained a roughly quantitative measurement of the complement deviating power of the serum." In a footnote I wrote: "This quantitative measurement can obviously not be determined by the so-called simplified methods."

In the *Quarterly Journal of Medicine* for January, 1911, I wrote: "It is remarkable that though innumerable modifications and simplifications have been introduced during the last two years, the consensus of expert opinion is still strongly in favour of the original technique, or of such slight modifications of the original method as do not necessitate the substitution of variant factors for constant factors." Major W. S. Harrison, R.A.M.C., agrees with me that the original technique is the most reliable, and probably Major Harrison and myself have greater opportunities for extended investigations on this subject than other workers in this country. I have personally examined well over 2000 sera, and as a matter of routine determine the reaction in about 30 cases every week. I am cordially in sympathy with Major French's opinion as to the necessity for standardising the test, and on Dec. 2nd, 1910, said: "I am entirely in accord with Mr. Arthur Shillitoe in desiring the universal adoption of the same technique for the Wassermann reaction."[2]

The points I wished to emphasise were: (1) the extremely small casualty *proportion*, which, being less than 0·2 per cent. even in the early days, is almost negligible; and (2) that salvarsan should be given as a routine in all cases except the very exceptional ones when it is contra-indicated. These points I do not think have been satisfactorily met by Major French and have been ignored by Mr. Lane. I do not suggest, and never have suggested, that the time has yet arrived when mercury can be dispensed with in

[1] Brit. Med. Jour., Nov. 5th, 1910, p. 1430.
[2] West London Medical Journal, January, 1911, p. 48.

every case; on the contrary, I think that there is a large percentage where mercury is indispensable.

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY.

Upper Berkeley-street, July 29th, 1911.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 29th Major H. C. French states that it is impossible to carry out the Wassermann reaction quantitatively by any of the ordinarily suggested modifications. May I point out to you that this is not only possible, but very easy, on the process which I have elaborated and which I described in my second Hunterian lecture?[1] I have now used the method constantly, almost daily, for a year and am absolutely satisfied with it, both as regards its simplicity and quickness and as regards the clinical value of its results. I have, however, found it convenient to alter the strength of my antigen so that a reaction given with a dilution of 1 in 10 is to be regarded as a positive, though weak, reaction. I should like to call especial attention to the method, since I quite agree as to the great importance of performing the test quantitatively, and this is the only process by which it can be done with ease, rapidity, and accuracy.

I am, Sir, yours faithfully,

Harley-street, W., August 9th, 1911. W. D'ESTE EMERY.

THE ADMINISTRATIVE CONTROL OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Will you allow me to correct a misleading impression which I gather has been produced in the minds of some by the trend of the discussion on "The Administrative Control of Tuberculosis" at the recent meeting of the British Medical Association, reported in THE LANCET of August 5th?

When the invitation of the committee of the section reached me that I should open the discussion *re* the Tuberculosis Dispensary, I hesitated lest it might seem that in advocating the dispensary I was placing its claims in opposition to that of the sanatorium, the hospital for advanced cases, and other elements in the campaign against tuberculosis. Because of this, it seemed desirable once more to throw into prominence—as I have always endeavoured to do—that, while the tuberculosis dispensary is of much direct value, its significance is greatly increased by close relationship to the other factors in a coördinated scheme. The tuberculosis dispensary constitutes, on the one hand, an information bureau, a receiving house for tuberculous patients, a "sorting house" of the different types of case, the centre of direction and treatment for the great mass of patients who do not require institutional treatment, a "clearing house" for patients of different kinds who need hospital treatment; and, finally, a storehouse of records regarding tuberculosis, as it occurs within the community. On the other hand, the dispensary should be in closest relationship with—if, indeed, it be not the developmental centre of—the other agencies which are evolved naturally by the local needs—namely, the sanatorium (the hospital for early cases), the hospital for advanced cases, and the farm colony. In proportion as these institutions are linked together and form with the dispensary a coördinated scheme, in such proportion will the complex problem of tuberculosis be effectively solved.

The relationship between municipal and voluntary effort will readily adjust itself on the part of those who are really interested in the solution of the question as to the need for, and the limitations of, the different factors. It has been sometimes ignorantly suggested that the Edinburgh scheme is chimerical—not practical. The facts are quite otherwise. It is just because of its intensely practical character that this coördinated scheme has come into being. It has been the slow and natural evolution from the needs of the case, as these have presented themselves in the day by day antituberculosis activity, which commenced in Edinburgh with the foundation of the Victoria Dispensary in 1887. Following the elaboration of domiciliary visitation there came to be felt the need for a sanatorium, which was established a few years later, then the need for the segregation hospital for advanced cases, then notification, and, finally, the farm colony for the care of a certain number of recovered patients to whom return to ordinary conditions of life meant physical relapse and economic wastage. With the growth of public opinion, and the direction of municipal activity in relation to tuberculosis, certain aspects of the problem were especially taken up from that side. The municipality sought expert opinion as to what departments of the work came properly within their sphere. The result was that they took in hand the hospital for advanced cases, and introduced compulsory notification. There can be little doubt that this is the side from which local authorities, as such, should approach the question. Within the last 18 months a closer relationship has been established between the municipal and voluntary divisions of the work, and the final result is a scheme of closely coördinated activity, in which each element plays its distinct rôle, and the several elements are harmoniously linked together for the common good.

If the complex problem of tuberculosis, with its extraordinarily protean manifestations, be properly understood, there can never be a question as to the competing value of notification, the dispensary, the hospital for advanced cases, the sanatorium or the farm colony, each of which, however effective in itself, is less effective than it might be if the other factors be awanting.

I am, Sir, yours faithfully,

Edinburgh, August 5th, 1911. R. W. PHILIP.

[1] THE LANCET, March 4th, 1911, p. 564.

ARTIFICIAL PNEUMOTHORAX IN TREATMENT OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I regret that Dr. H. Rhodes in his letter published in THE LANCET of August 5th asserts that I describe "rather contemptuously" Brauer's and Spengler's method of inducing an artificial pneumothorax. I am indebted both to Professor Brauer and to Dr. Lucius Spengler for advice freely and courteously given when I have met with difficulties in the course of the treatment in England; and for me to be "contemptuous" towards these pioneers would be almost as incongruous as it was for the juvenile curate to commence his sermon with "St. Paul says, and I partly agree with him."

Dr. Rhodes draws on his creative inner consciousness when he credits me with stigmatising Brauer's and Spengler's method as "either obsolete or at any rate almost useless." I have neither held nor expressed such a view. On the contrary, I stated that Brauer's method was not only still practised, but that its adherents claim for it certain advantages over Forlanini's method.

The arguments for and against the two methods of inducing an artificial pneumothorax are too numerous and lengthy to be fully dealt with in these columns, but there is one point I should like to emphasise at once. The open method, known as Murphy's, Brauer's, or the schnitt method, presents as many septic pitfalls as a laparotomy, and among the first 140–150 reported cases in which Brauer's method was adopted there were four deaths from septic infection of the pleural cavity (v. Muralt, Brauns). The physician is therefore not likely to carry out this operation in person. Forlanini's "puncture" method as practised by Saugman requires no lancets, ligatures, or artery forceps. The physician, therefore, who has mastered its technique may carry it out from start to finish without the aid of a surgeon. Consequently it is to the advantage of the patient that this method be taught which involves no changing of horses in midstream, and which accordingly appeals more to the physician on whom, in 99 cases out of 100, the choice of treatment depends.

The brilliant results which have been achieved by both methods certainly outweigh the occasional disasters which have occurred. Saugman has now given over 2200 injections to 104 patients, and he reports only one death due to the treatment itself. Death was due not to gas embolism but to pleural reflex—an accident that may also befall the

followers of Brauer's method. Deaths from gas embolism certainly have occurred in the course of the treatment by the puncture method, but I am convinced that most, if not all, were due to faulty execution of the proper technique.

I am, Sir, yours faithfully,

Gorleston-on-Sea, August 7th, 1911. CLAUDE LILLINGSTON.

THE TREATMENT OF ECLAMPSIA.

To the Editor of THE LANCET.

SIR,—Referring to some remarks attributed to me on pp. 378–379 of your last issue, I shall be glad if you will correct the report of what I said. I have not wholly abandoned obstetric interference by the milder methods in certain cases of eclampsia. As to Schultze's method, I said it was dangerous in *inexpert hands*, and not suitable to be taught to the ordinary midwife.

I am, Sir, yours faithfully,

Leeds, August 5th, 1911. JOHN B. HELLIER, M.D.

SPONTANEOUS COMBUSTION OF METHYLATED SPIRIT.

To the Editor of THE LANCET.

SIR,—The following incident that happened recently may be worthy of notice if, as I consider, a hitherto unsuspected danger is revealed.

During the extreme heat and sunshine of the second week of July a party of girls went along the cliffs for a picnic and took with them the usual outfit for making tea—viz., provisions, cups and saucers, spirit lamp, spirit container, &c. The lamp was one of those which have no wick, but just a central absorbent surface somewhat like a pen-wiper. The container (of the capacity of one pint) was half full of methylated spirit, and had a screw metal stopper and slight lip at one angle. When tea was thought of one of the older girls proceeded to pour the spirit from the container on to the lamp, and almost immediately her younger sister, who was sitting a few feet to leeward of her, was seen to be enveloped in flame. As the dress material worn by the girl was naturally of a light texture on such a day, a most serious accident was probably averted by the promptitude with which the elder sister made her lie flat on the grass and stifled the flames with her own skirt. As it was, the younger girl's left arm was deeply burned from above the elbow to the wrist. The promptitude and value of the elder sister's action were clearly manifest when I examined the skirt worn by the younger sister and found it badly singed from the waist to the lower hem.

The lamp and container were conveyed to the place where the picnic was held in a basket along with the cups and saucers. The other contents of the basket were not, therefore, very hot. No naked light of any kind was in the vicinity at the time.

I am, Sir, yours faithfully,

JOHN J. ROBERTSON, M.B. Glasg.

Portpatrick, Wigtownshire, August 1st, 1911.

PS. What should be the flash-point of methylated spirit?

*** The boiling-point of methyl alcohol, or wood spirit, is 66° C.; that of ethyl alcohol is 78° C.; so that the boiling-point of methylated spirit would lie somewhere between these figures. Light petroleum may have been present in the methylated spirit, but even then there can be no "flashing" or ignition without an initiating spark. Thousands of gallons of rapidly volatile petrol are carried through the London streets without being ignited by the excessive heat of the present summer. We think there must be an essential piece of evidence missing in the above incident, and that further inquiry would probably elicit the presence of a starting spark somewhere, which was overlooked. The incident shows, at all events, that care needs to be exercised when any inflammable substance is being handled in case a fire-brand is near and unsuspected.—ED. L.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Degree Day at the University.

AT the recent medical degree day at the University of Manchester, the Vice-Chancellor, Sir Alfred Hopkinson, in his address to the graduates made several pronouncements of great interest on matters of medical education. Amongst the questions dealt with was the character of the instruction and of the course of study which should be required in scientific subjects as the preliminary training for medical students. The Victoria University had always insisted that in the first of the five years required for a degree in medicine a sound training in general science should be taken within the University itself or in some similar institution. By recent changes in the curriculum of the University the study of anatomy might be begun in the latter part of the first year. How far could these preliminary scientific studies be so arranged as to afford a sound general scientific training and at the same time be suited to those who wished to study medicine in such a way as definitely to affect their future work? The Vice-Chancellor quoted the important remarks made by Sir Thomas Barlow, the President of the Royal College of Physicians of London, before the London University Commission. "Many objections," Sir Thomas said, "have been urged in times past by those who have led the crusade for a more accessible medical degree in London against the preliminary scientific subjects of the London University curriculum. I submit that under the recent modifications these objections are now invalid, and that it would be very short-sighted, in view of the modern progress of medicine, which has been largely based on biological, chemical, and physical development, to suggest any curtailment of the scientific equipment of our medical graduates. The principle to which I have already referred, of endeavouring to direct studies in these subjects along lines which will bear directly on the subsequent clinical part of the curriculum is, I submit, absolutely vital." The whole of the passage applied, *mutatis mutandis*, to the position in Manchester. Already the chemistry course had been modified to bear more directly on future medical study. A course on bio-chemistry was now established, and it had been arranged that some work in organic chemistry should be taken in the first two terms in the academic year. In fact, in the first year, while the standard of scientific attainment was being maintained, the study was being more and more definitely adapted to the special needs of the medical student for his future work. The matter was summed up in the Vice-Chancellor's words, "The subjects of the first professional examination should be taught to medical students in such a manner that they form a real introduction to the subjects of the curriculum in anatomy, physiology, and pathology." Any changes which would curtail the general education and literary culture of the medical man were to be deprecated. It was better that the school stage should be devoted entirely to general education without regard to the prospective profession. True, if boys remained at school till 19, or later, it would be difficult in the later years not to specialise definitely for their particular business or profession; but although in the past school-life had been too short, there was a tendency to-day to go too far in the opposite direction. It was not desirable, in the interests of the pupil or of either the school or the university, that boys should remain at school till the age of 19. Sir Alfred Hopkinson also drew attention to the "splendid opportunities that can now be offered in Manchester for clinical study." They did not for one moment allow, he said, that clinical study could be better carried on in London than elsewhere. By the hearty coöperation of the Infirmary and the other hospitals with the University facilities were offered which had the great advantage of being concentrated as well as extensive. Finally, an appeal was made for a fund to enable original research in medical subjects to be prosecuted.

Is Scarlet Fever an Accident within the Meaning of the Workmen's Compensation Act?

A very important decision was given by Judge Mellor at the Manchester county court on July 28th on the question whether scarlet fever is an accident within the meaning of

the Workmen's Compensation Act, and whether consequently a mortuary porter, who alleged that he had contracted scarlet fever while at work in the Monsall Fever Hospital, was entitled to compensation from the Manchester corporation who employed him. The judge said that the case was the first which had arisen as to the liability of hospital authorities to pay compensation to the members of the staff who contract infectious disease through their work. The evidence showed that the claimant's work included the cleaning out of the mortuary, and that all he had to use was a broom and a bucket of water. He was given no antiseptic whatever. The medical man called for the claimant had said that if the body of a person who had died from scarlet fever was taken into the mortuary—and several bodies had been so taken—it could be said to be a perfect hotbed of germs of disease. The judge on the evidence found that the disease was contracted in the mortuary, and he held that it amounted to an accident within the meaning of the Workmen's Compensation Act. He therefore awarded the claimant 15*s.* a week during incapacity, with costs on the higher scale. A stay of execution was granted, pending appeal.

National Association of Teachers of the Deaf.

The National Association of Teachers of the Deaf held its seventh biennial conference in Manchester on July 24th and 25th. The association has about 350 members. For nearly a century Manchester has taken a prominent part in the education of the deaf, not only in the city itself but beyond. The Royal Schools for the Deaf at Old Trafford, founded in 1823, had a great influence on other communities. When the late Lord Egerton was president of the institution he, along with the committee of the Manchester schools for the Deaf, did much to promote and secure the passing of the Act of 1893, which made the education of the deaf compulsory and a public charge. The Manchester Schools are now the second largest in the kingdom. Practically the whole of the education of the deaf in this country up to about 40 years ago was conducted on the silent method by finger-signs. Since then the lip-reading method has made great progress in the schools. Each individual child is now carefully studied with a view to providing the instruction most likely to be suitable to the case, to obtain the best development of the mental life of the child. The humanising effect of the oral method of instruction is not the least valuable of its merits. A resolution was carried that an increased proportion of the cost of the education of the deaf should be borne by the State, and suggesting that the grants paid should at least be in the same proportion to the total cost as in the case of ordinary elementary education. The cost of education for the deaf in residential schools has risen from £26 in 1893 to about £40. The grant is only 5 guineas, which is out of all proportion to the cost. A further resolution was adopted endorsing the views of the chief medical officer of the Board of Education, that it is wise that deaf children should be admitted to school at the age of 5 years, and that the compulsory school age of deat children at admission should be brought into line with that of normal children and of blind children. Lord Sheffield, president of the association, in a paper on the State of Deaf-mute Education in Britain, stated that the proportion of certificated to non-certificated teachers had gone up considerably, and that the great majority of the boarding institutions were still under private management, though relying almost entirely upon the contributions of local authorities. The day schools were under local authorities. Lord Sheffield urged the importance of a national organisation of the work of teaching the deaf. He said a proper training college for teachers of the deaf was needed, which might be grafted on to some existing institution more or less under national direction, and which need not be entirely managed by the Board of Education. There were at least 6000 children in various schools for the deaf, and for those he would postulate 700 teachers. It was resolved to make representations to the Chief Secretary for Ireland urging the necessity for the passing of an Act for the compulsory education of the deaf in Ireland. As regards the distribution of deafness, statistics showed that in the British Isles it was decreasing. It would appear that where the mobility of the population was greatest, there deafness was least common. It might be that consanguinity had much to do with certain forms of deafness. In certain parts of Switzerland where people did not move about very freely, and where there was much intermarriage of relatives, deafness occurred to the extent of 1 in 408; whereas in Belgium, where nations met and intercourse was lively, the ratio was 1 in 2247. Dr. J. Kerr Love discussed the medical inspection of school children, with special reference to deaf children. At present, he said, though some children were examined, medical treatment formed no part of the work of the school doctor. This was not enough. To educate the child in a palatial modern school and to send him back for 18 out of the 24 hours to a slum tenement was poor education. Treatment was essential, and if it was to be thorough it must be undertaken in or near the school, in school clinics, with a competent staff of nurses and doctors. An examination of 20,000 cases of ear disease in Glasgow—nearly all the children of the very poor—led Dr. Love to the conclusion that the combination of overcrowding and poverty was responsible for most of the ear disease sent to hospitals. These results, often spoken of as physical degeneration, were not handed down from one generation to another. When disease was really hereditary it affected rich and poor alike. The death-rate amongst very young deaf children he thought was less than amongst very young hearing children. They, however, had worse eyesight, and there was a larger number of mentally deficient children amongst them—about 15 per cent. Deafness, when congenital, was often hereditary, and even persistently hereditary, though congenitally deaf children were not usually mentally defective. In his opinion one thing should be insisted on—viz., that on no account should the deaf, as distinct from the mentally defective deaf, be segregated like the insane.

August 8th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Lord Mayor of Bristol's Hospital Sunday Fund.

THE total amount received this year for the Bristol Hospital Sunday Fund is £1887 13*s.* 3*d.* Last year the amount realised by ordinary collections was £1887 17*s.* 5*d.*, which with sums received at the services in memory of the late King made up a total of £2007 11*s.* Allocations made this year are as follows: £739 10*s.* to the Royal Infirmary, £620 10*s.* to the General Hospital, £232 13*s.* to the Children's Hospital, £110 10*s.* to the Eye Hospital, and £105 1*s.* to other institutions.

Bristol Royal Infirmary.

The report presented by the committee of the infirmary to the governors at their recent half-yearly meeting included several items of interest. The work of the institution seems to be growing, for the excess of this half-year's work over that of the corresponding half of last year is remarkable. There were 2178 in-patients and 23,917 out-patients in the first half of this year, an increase of 350 and 3011 respectively on the work of the first six months of last year. The total income shows a decrease of £21 only, the subscriptions having actually increased by £207 11*s.* The ordinary expenditure shows an increase of £62, but this is partly redeemed by a decrease of £29 in extraordinary expenditure. The balance due to the treasurer on the half year is £783, bringing the total deficit to £4769. In addition to this, the institution stands committed to an expenditure of £70,000 on the new wing, which is to be named the King Edward Memorial Infirmary. Of this sum only £35,000 are in hand. The new building is proceeding, and it is expected that it will be completed within 12 months. The committee, therefore, expects to issue an appeal shortly for £40,000 or £50,000 as soon as the civic fund for a memorial to King Edward VII. is completed.

The British Dental Association.

The annual meeting of the Western Branch of the British Dental Association was recently held at Barnstaple. Mr. J. J. H. Sanders presided, and there was a good attendance of members. The report showed that the branch numbered 117 members, and the financial statement was satisfactory. Mr. Sanders, in the course of an interesting address, stated that an amended and strengthened Dental Act formed the question of the hour for dentists, and added that the tendency of recent legislation had added enormously to the importance of the problem. A paper was read on Tantalum

and its Uses in Dentistry by Mr. H. R. Shapland, and specimens were exhibited by Mr. Sanders, Mr. G. R. Brittan, and others. The annual dinner was held at the Imperial Hotel, Barnstaple. The next annual meeting will be held at Bath, with Mr. Stuart Carter as president-elect.

Henry Soltau, L.R.C.P. & S.Edin., L.F.P.S.Glasg., F.R.G.S.

Mr. Henry Soltau died at Malvern on July 25th. The deceased was the second son of the late Mr. H. Soltau, barrister, of Barnstaple. Mr. Soltau went to China as a medical missionary and performed much useful work there. He was the first Englishman who made the journey across China from west to east. Mr. Soltau acted as an interpreter to the British Forces during the Burmese war of 1885. He returned to England about 12 years ago, was made a Fellow of the Royal Geographical Society, and lectured before the society on his travels in China. At one time he was superintendent and general secretary of the Medical Missionary Association. He had lately been residing at Hornsey-lane-gardens, Highgate, London.

Vaccination in Somerset.

Dr. W. G. Savage, the county medical officer of health of Somerset, states that in 1905 the unvaccinated children in the county were 12 per cent.; in 1909 the percentage had increased to 43 8. The Bridgwater district has 83·3 per cent. unvaccinated children, and Weston-super-Mare 70·1 per cent.

The Inspection of Midwives in Cornwall.

At the last meeting of the midwives committee of the Cornwall county council it was decided, upon the suggestion of Dr. R. Burnet, the medical officer of health, to recommend the county council to pay £100 to the Cornwall Nursing Association for the services of two nurses who should be sub-inspectresses under the Midwives Act.

The Mortuary Question at Falmouth.

At an inquest held recently at Falmouth attention was again called to the state of the mortuary. The coroner, Mr. E. L. Carlyon, is reported to have said that it was a crying shame that the council had done nothing to make the place fit for a post-mortem examination to be made in it. After some discussion the jury requested the coroner to make a further recommendation on the subject to the Falmouth town council.

August 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University: Medical Graduation.

THE summer medical graduation ceremony of Edinburgh University took place in the McEwan Hall on July 29th. Sir William Turner presided, and among those present were the Right Hon. George Wyndham, LL.D., M.P., Lord Rector of the University, and Mrs. Wyndham, the Countess of Grosvenor, and also the Thakore Sahib of Gondal, who is an M.D. of Edinburgh University. The degree of Doctor of Medicine was conferred on 68 candidates, of whom seven were women. Four candidates were awarded a gold medal for their thesis—namely, William Boyd (Scotland), M.B., Ch.B., 1908 for a thesis on the Cerebro-spinal Fluid in Certain Forms of Nervous and Mental Disease; Alexander Ninian Bruce (Scotland), D.Sc., M.B, Ch.B. (with second-class honours), 1909, for his thesis on the Suprarenal Glands and the Thyroid Gland; Kenneth Mackenzie (New Zealand), M.B., Ch.B. (with first-class honours), 1908, for a thesis on the Physiology of the Mammary Gland; and Samuel Alexander Kinnier Wilson (London), M.A., B.Sc., M.B., Ch.B., 1902, for a thesis on Progressive Lenticular Degeneration. Two candidates obtained the degree of Master of Surgery, one of whom. Alexander Pirie Watson (Scotland), M.A., M.B, Ch B, 1908 (with second-class honours), was awarded a gold medal for his thesis on the Treatment of Fractures by Massage and Passive Movements. The degree of M.B., Ch.B., was conferred on 92 candidates, of whom 5 were women. A number of degrees in Arts and Science were also conferred, and seven candidates obtained the diploma in Tropical Medicine and Hygiene. The Cameron prize in practical therapeutics was awarded to Dr. Simon Flexner of the Rockefeller Institute, New York, for his researches in connexion with cerebro-spinal meningitis and with dysentery and summer diarrhœa. This is the first occasion on which the recipient of the prize has been an American. Professor H. Harvey Littlejohn, in announcing the award, said they expected that in the course of next session Dr. Flexner would give an address in Edinburgh University descriptive of his researches. Professor J. Walker delivered the address to the graduates. He referred to the difference between the University training and that of the Colleges, which, he said, lay in the greater prominence given by the University to the scientific branches of the course. The University, with its well-equipped laboratories, should be in a position to teach those branches well, but there was a lack of correlation between the scientific courses and the general medical curriculum. It was disastrous to the student if he looked on his course as a series of disconnected subjects. He considered there should be a medical school in the University apart from the science school. In his own subject of chemistry, with the best intentions to adapt the course of chemistry to the wants of medical students, he and his assistants were hampered by their lack of knowledge of physiology, pathology, and clinical methods. He should like to see in the University a department of medical chemistry in the charge of teachers who had had a complete medical training. In it should be taught not only the elementary chemistry of the first year, but the chemistry of physiology, pharmacology, and toxicology, immuno-chemistry, and clinical chemistry. After the graduation ceremony a house luncheon was given in the University Union. Among the guests was the Right Hon. George Wyndham, who replied to the toast of "The Guests."

New Medical Chairs at Glasgow University.

Intimation has been received by the Glasgow University Court that the ordinance relating to the new medical chairs at the Royal Infirmary has received the approval of His Majesty in Council. The various elective bodies will now appoint curators to the patronage of the respective chairs, which, it is hoped, will be duly filled in time for the commencement of the winter session.

Aberdeen Provincial Committee: New Medical Officer.

At a meeting of the Aberdeen Provincial Committee, held on August 1st, Dr. George A. Williamson was appointed to the post of medical officer and lecturer on school and personal hygiene at a salary of £400. Dr. Williamson is a native of Inverness, is 40 years of age, and possesses the following degrees: M.A. and M.D., Aberdeen University; D.T.M., University of Liverpool; and D.P.H. (with honours), Aberdeen University. After graduating Dr. Williamson acted as house surgeon, first at Gray's Hospital, Elgin, and then at the Northern Infirmary, Inverness. He then entered the Colonial Service, and in 1895 was appointed medical officer of health of Larnaca town and district in Cyprus, a post which he still holds.

Appointment of School Medical Officers.

At a meeting of the Aberdeen County Committee on Secondary Education, held on August 4th, the report of the medical inspection subcommittee was moved. The report recommends that arrangements should be made with the county council whereby the county medical officer of health should act as chief school medical officer for the general supervision of the scheme of medical inspection, at an annual salary of £50, with two whole-time assistants for the work of actual inspection, the assistants being appointed assistant medical officers of health for the county. An amendment that a whole-time chief medical officer be appointed with one assistant as before was moved, and carried by 20 votes to 10 for the motion. The salaries were fixed at £300, rising by increments of £25 to £400, and £200, rising by increments of £25 to £300 per annum.

August 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Institute of Public Health.

THE annual meeting will open at Dublin on Tuesday, August 15th, with a reception by the Countess of Aberdeen and the executive committee in the Examination Hall of St. Stephen's College. At 11 o'clock His Excellency the

Lord Lieutenant of Ireland will deliver his presidential address. The sectional meetings will be: Comparative Pathology and Veterinary Hygiene; Vital Statistics and Preventive Medicine; Chemistry and Bacteriology; Municipal and Parliamentary; Housing of the Working Classes; Town Planning; Chi'd Study and Eugenics; and a Conference of Medical Officers of Health and Port Sanitary Authorities. The list of entertainments includes numerous garden parties, the annual dinner, and a conversazione at the Royal College of Physicians. There will be special services on the Sunday at the Pro-Cathedral and at St. Patrick's Cathedral.

Membership of the Royal College of Physicians.

New by-laws governing the admission of Members of the College, to come into force in January, 1912, have been drawn up by the Royal College of Physicians of Ireland. Candidates must, in addition to passing an examination in medicine and pathology, select from the following groups a special subject, in which they will be expected to reach a high standard of proficiency. The groups are: medicine, gynæcology and obstetrics, pathology and bacteriology, and any further group of subjects deemed by the College to be equal in value to one of the preceding groups. It will be seen that midwifery and gynæcology are now recognised as subjects qualifying for membership.

The Distribution of Lord Iveagh's Gift to the King for Dublin Hospitals.

His Majesty has approved the following grants, recommended by the Advisory Committee:—Mater Misericordiæ Hospital, £4000; Fever Hospital and House of Recovery, Cork-street, £3500; National Hospital for Consumption for Ireland, £3000; Adelaide Hospital, £2750; Sir Patrick Dun's Hospital, £2500; Meath Hospital and Co. Dublin Infirmary, £2250; Richmond, Whitworth, and Hardwicke Hospitals, £2250; Rotunda Hospital, £2250; Royal City of Dublin Hospital, £2000; Dr. Steevens' Hospital, £2000; St. Vincent's Hospital, £2000; Royal Victoria Eye and Ear Hospital, £2000; Royal Hospital for Incurables, £2000; Our Lady's Hospice for the Dying, £1750; Children's Hospital, Temple-street, £1700; Coombe Lying-in Hospital, £1700; Convalescent Home, Stillorgan, £1500; Linden Convalescent Home, £1500; the Orthopædic Hospital of Ireland, £1500; National Maternity Hospital, £1500; Charitable Infirmary, Jervis-street, £1350; Mercer's Hospital, £1350; National Children's Hospital, Harcourt-street, £1000; St. Michael's Hospital, Kingstown, £750; Monkstown Hospital, £500; Incorporated Dental Hospital of Ireland, £500; Rest for the Dying, Camden-row, £500; Drumcondra Medical and Surgical Hospital, £200; and Allan A. Ryan's Home Hospital, £200. The distribution has given rise to comment, as in some cases it seems difficult to recognise its relationship either to the work done by the different institutions or their individual needs.

The Rotunda Hospital.

The board of governors of the Rotunda Hospital has unanimously adopted a resolution thanking Dr. James Roy Freeland and expressing appreciation of his conspicuous ability and courtesy during his three years of office as assistant to the Master.

Health of Belfast.

The report of the medical officer of health to the Belfast city council on August 1st showed that the death-rate during the month ending July 15th was 14·0, as compared with 13·3 in the preceding month and 19·1 in the corresponding month of 1910. The residents of Fort William Park, one of the best suburbs of Belfast, complained to the health committee of the foul smells from the bad drainage of that district, when it was found that the corporation had no plans of the sewers in that quarter. The surveyor's department is at present lowering the sewer in one part of the district and exploring the other part. The drains are to be made right as soon as possible. It was in this district that recently there was an extensive outbreak of diphtheria.

Methylated Spirit Drinking.

At the Donegal petty sessions, held on August 2nd, a man was fined for being drunk on methylated spirit. The district inspector of police pointed out that the drinking of methylated spirit was greatly on the increase in the district. The Belfast and Ulster Vintners' Association has decided to take steps to have the law relating to the sale of methylated spirit altered. Since the increase of the spirit duties under the Budget the sale of methylated spirit has greatly increased, especially in the country towns of Ulster, and has led to a peculiarly objectionable form of drunkenness. The drinking of methylated spirit should be made a punishable offence. In the county of Londonderry, especially round Draperstown, some years ago ether drinking was very prevalent, and on market days in Cookstown and other places—for instance, on the Derry Central Railway, by which farmers journeyed—the smell of the ether could be easily detected. Legal enactments have put an end to this dangerous custom of drinking ether.

Down Lunatic Asylum.

In the report for 1910 of this asylum regret is expressed, and with great truth—indeed, the Inspectors of Lunatics in their fifty-ninth report lament it—that the county councils have failed to avail themselves of the provisions of Section 5 of the Act 1 Edward VII. cap. 17, authorising the provision of a common laboratory as well as of a pathologist who should give instruction in the pursuit of scientific investigation to the medical staff. This clause, unfortunately, is not obligatory. The committee of management of the Down Asylum pledged itself on March 15th, 1902, to contribute in accordance with the spirit of this measure, but, unfortunately, only a few other like bodies followed suit. Unless some such action is taken to keep pace with the advances of modern scientific medicine no real progress can be made in mental diseases, and the medical superintendent of an asylum will be reduced to the rank of a mere clerk recording a mass of useless details in books never seen except by the inspectors and by his board of management, and he will have to continue at word-spinning in his annual reports instead of supplying some really accurately observed scientific facts.

August 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Tropical Heat in Paris and the Lack of Water.

THE end of July and the beginning of August at Paris have been characterised by an altogether exceptional heat, as seems also to have been the case in the other European capitals. As a natural consequence there has been an increase in the cases of heat-stroke, of congestive complaints, and of suicides and crimes occasioned by cerebral excitation. Drinking-water has also been deficient—as, indeed, happens nearly every year in Paris during the hot spells—and the deficiency would have been even more serious had there not been a considerable exodus of inhabitants to the country. Both the public and the press complain that, in spite of the huge sums expended by the municipal council for an abundant supply of drinking-water to Paris, such a supply as would do away with apprehension as to its being forthcoming at the time when it would be of greatest service is not yet assured. The normal supply of Paris is undoubtedly insufficient, as is evident so soon as the temperature rises and the sources of supply become less abundant, which is usually the case in summer. On the other hand, the desire to make use of only the present sources of supply for the capital makes it necessary to reject confluents that could be most easily utilised, but which are inadmissible because the water is contaminated by drains and the industrial effluents of the very populous localities surrounding Paris. The water of the Seine used for industrial purposes and for general watering is brought by lifting apparatus which cannot give it sufficient head for employment in those parts of Paris situated at some elevation, such as Montmartre, the Trocadero, the Maison Blanche, and the Buttes Chaumont. Consequently, to obtain a sufficient pressure the water has to be drawn by means of aqueducts from mountain sources having a great pressure. This takes away a part of the potable water that ought to be reserved for drinking for the factories, the watering and fire hose, and the water power for lifts. Another important

cause of loss of water also is reckless waste. Finding that the tap-water in the apartment houses is not sufficiently fresh (inasmuch as the pipes, which are all situated on the outside of the houses under the police regulations, are exposed to the sun), it is a common practice, in order to obtain a glass of cold water, first to let quite a copious stream flow to waste. Many even leave the tap on all the day so as to be sure of cold water at any time. The waste from this practice is so considerable that it has been even suggested that it might be to the city's advantage to supply ice gratuitously to all the inhabitants during the hot spells. Through the nomination of M. de Selves to the Ministry of Foreign Affairs, the office of Prefect of the Seine has a new incumbent, and, as might be expected, a greater activity is just now manifest in the municipal services. The new Prefect has taken steps to lessen the deficiency of drinking-water by half. After consultation with the committee of hygiene, and particularly with Dr. Roux, director of the Pasteur Institute, he has decided to divert into the reservoirs of Paris 30,000 cubic metres daily of water from the Marne, after filtering it through three successive layers of porous stone. Moreover, at the outlet of these filters there is to be added to the water a slight quantity of sodium hypochlorite to destroy the microbes that may have escaped through the filter. Inasmuch as the water of the Marne is calcareous, the sodium hypochlorite, being promptly neutralised by the calcium salts, leaves no unpleasant taste. It is really a remarkable thing that 15 days have sufficed for making this installation and for providing against a dearth in the normal supply of drinking-water. It is true that the works for supplying water from the Marne for industrial and watering purposes and the needs of the bathing places of Paris existed, as well as the pipes that allowed the conducting of this water into the mains of the drinking-water reservoirs. Although this communication could not have been effected in so few days, the Parisians, in their delight at at last having water, forget to ask themselves if this mysterious communication has not been made use of very often, in times of drought, without its being so flamboyantly heralded as it is to-day. The interesting fact is the rapidity with which it has been possible to organise so perfect a system of purification, for which Dr. Roux and the Consultative Commission deserve great credit. It should be added that the water was not supplied to the public until after numerous bacteriological and chemical tests, and many tastings by the members of the Commission, had established the innocuousness and the potable quality of the water. It was quite time, because, to meet the drought, recourse had again been had to the deplorable measure of stopping the flow during the night to allow the reservoirs to refill. Consequently the inhabitants of Paris were entirely without water between midnight and 6 A.M., which caused considerable discomfort; for though it was possible and customary to put aside a supply of drinking-water, it was not equally so to provide for baths, the toilet, the lifts—which consequently did not work during the night—and, what was still more serious, for the fire mains. On many occasions fires broke out during the night, with disastrous results, owing to the lack of water in the mains. It is true that a watch service was organised, and that the firemen, on being summoned by telephone, immediately themselves undertook the task of reopening the water mains. But even so, a quarter of an hour or 20 minutes elapsed before the water in the mains attained an adequate pressure. During this time the fire gained a good footing, for the firemen's hose was intended to work under heavy pressure, and without it gave only a very feeble stream. One shudders now at the thought of what would have happened had a fire occurred, for instance, in a place of entertainment some minutes after midnight. The losses thus caused have already cost a sum not far short of what it would have cost to bring an additional supply of drinking-water to Paris—an expense before which the administration for several years has recoiled. The new Prefect has promised that before next summer the works now under construction for the purification of the water of the Seine by ozone and the ultra-violet rays shall be finished, and that Paris shall not again run the risk of its water-supply giving out, even in case of a drought of the sources and of reckless waste in the use. The purification of river water is, in short, the means to be adopted for supplying the city of Paris with a fresh supply of drinking-water, for the various processes are now sufficiently perfected to deserve confidence. This solution is less costly than the bringing of water at great expense from fresh sources far afield, Paris having already exhausted all the available water-supplies within a radius of 200 miles. These water sources, moreover, require incessant surveillance by chemical stations and laboratories along their course, and the imprudence of the dwellers alongside might contaminate them with typhoid germs and so risk infecting the entire capital, as has all but happened many times with regard, for instance, to the sources of the Avre. The plan of bringing water to Paris from Lake Geneva, which has been put forward, has been abandoned on account of the enormous expense and the risk that in war-time an enemy might destroy these works and threaten Paris.

August 7th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Proposed Restrictions on the Journalistic Puffing of Medicines.

AT a recent meeting of the Union of Austrian Medical Councils a suggestion was made which is of considerable interest to medical journalists. The substance of it was to the effect that something of the nature of a permanent committee should be created whose duty it would be to examine and control the articles in which some medical periodicals extol the value of certain medicines and other substances used therapeutically. In the result a resolution in this sense was adopted by the meeting, in spite of the fact that it is impossible to test the efficacy of such remedies or to verify the statements of the author of such an article otherwise than by repeating his experiments. At any rate, the incident reveals the existence of some dissatisfaction with the frequency of these puffing announcements in our medical journals. It is, no doubt, true that a medical man will be able to judge for himself how much reliance can be placed on paragraphs of that kind, but the chief objection to them is the custom of the manufacturers of proprietary medicines to distribute broadcast condensed abstracts of such articles wherein the medicine is praised, and practitioners cannot find out from a few lines whether the statements that are made are the result of honest observations or merely the production of a vivid and artificially stimulated imagination.

The Karolinen Kinderspital in Vienna.

During the year 1910 at the above-mentioned hospital, one of our special institutions devoted to the treatment of children, 18,292 children came under observation, of whom 965 were received as in-patients. Of this number 352 were under 2 years of age. The mortality of the in-patients was 15 per cent.; 13·3 per cent. were discharged as improved and 57 per cent. as recovered. A large proportion of the inmates were received because of infectious diseases. Only severe cases were admitted. The mortality of some prevalent diseases was as follows: measles, 2 per cent.; scarlet fever, 4 per cent.; and diphtheria, 8·7 per cent. This institution is one of the few hospitals in Austria supported by voluntary contributions and not under direct official control, but managed by a privately appointed council. Plans have been prepared for the erection of a new hospital, as the present premises are antiquated and insufficient both for the increasing number of patients and also for the fulfilment of modern requirements. The scientific report of the hospital contains six elaborate papers by the director, Dr. Knöpplmacher, as well as instructive contributions by Dr. Lehndorff, Dr. Zak Spieler, Dr. Leines, and several others.

A Case of Acute Bedsore after a Large Dose of Veronal and Pyramidon.

A rare case of gangrene of the skin and subcutaneous tissues, described under the name of acute bedsore, was shown recently by Dr. Liechtenstern at a meeting of the Gesellschaft für Innere Medicin in Vienna. The patient, a woman aged 28 years, had taken, with a suicidal intention, 8 grammes (a quarter of an ounce) of veronal and 6 grammes of pyramidon. She was found in an insensible condition, and when she was taken to a hospital a bluish-black spot of the size of a shilling was then noted in the region of the coccyx. After 48 hours, the unconsciousness still being present, there

was evidence of suppuration and the affected area had increased to the size of a five-shilling piece. In spite of careful treatment the gangrene spread until it reached the sacrum. The patient was treated with peroxide of hydrogen and iodine and was placed on a water-bed. This finally brought the destruction of tissue to a stop, and she was discharged from the hospital after 40 days with a defect of tissue measuring three inches in depth and about an inch in breadth. It could not be ascertained with certainty whether or not there had been a lesion of the medullary conus, for there were no bladder troubles and no loss of control of the rectum, but only changes in the sensibility of the gluteus muscles. No similar case due to poisoning by veronal has yet been seen or reported upon. Acute bedsore was sometimes met with in cases of disease of the spinal cord; it appeared and developed within a few hours, and in the case above mentioned it seemed that the mixture of veronal and pyramidon (amido-antipyrin) had exercised a toxic influence upon the lower segment of the spinal column.

Reappearance of Cholera in Austria.

In addition to the few cases of cholera mentioned in my letter in THE LANCET of June 24th there has been a definite outbreak of this disease in Trieste, where at present there are 20 cases under observation. The very strict quarantine and the careful search that has been made have resulted in the discovery that among the persons who have been in contact with undoubted cases of cholera there are several who, although to all appearance in good health, nevertheless harbour the bacillus of that disease. The intensely hot weather which at present prevails in the southern districts of Austria has also had a share in promoting the spread of infection by indiscriminate eating of fruit and assuaging of thirst, especially amongst the lower class of the population. The coast district of Austria has now been declared to be infected with cholera, and due notice of the fact has been given by the sanitary authorities to all states and governments as required by the Cholera Convention. In all cases the direct or indirect tracing of the source of infection pointed to Italy as the place of origin, except where direct contact with infected persons occurred in our country.

The Medical Sanatorium in Marienbad.

In Marienbad a few days ago the convalescent home for medical men was opened, and will no doubt prove a boon to many practitioners when suffering from the effects of illness. Residence in the institution will be free for subscribers, while non-subscribers will have to pay a small sum for their accommodation; the waters and the use of the baths of Marienbad will be free to all medical men.

August 7th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Care of Milk in Montreal.

Dr. McCarney, chief food inspector in Montreal, has recently made a special investigation of milk delivery in Montreal. He has submitted to the Board of Control a strong recommendation in favour of refrigerator railway cars for the conveyance of milk in hot weather. He has further recommended that cooling houses should be provided at the points of arrival to prevent the milk from souring prematurely.

Annual Report upon the Feeble-minded in Ontario.

Dr. Helen MacMurchy, in her fifth annual report upon the feeble-minded in Ontario, thus sums up the situation as regards the school population. The school population of Ontario is about 600,000, and of this number it is estimated that 1000 or so feeble-minded are in the schools or of school age. In the opinion of Dr. MacMurchy these should be registered under the direction of the Education Department, in order that they may be known and located. As for the remainder, the adults or those over school age should be reported to the Provincial Secretary's Department. Those coming under the notice of the officers of the law should be similarly tabulated. Finally, there should be a gradual development of the policy of the care of the feeble-minded, in accordance with enlightened public opinion in the province.

Accident to Dr. Andrew Macphail.

Some few weeks ago an unpleasant accident happened to Dr. Andrew Macphail, editor of the *Journal* of the Canadian Medical Association. A bottle of aerated water exploded and particles of glass lacerated his face and injured both eyes. I am assured, however, that neither eye is permanently injured.

Dr. George E. Armstrong and the Royal Victoria Hospital, Montreal.

Dr. George E. Armstrong, of the Montreal General Hospital, has been appointed surgeon to the Royal Victoria Hospital, Montreal, in the place of the late Dr. James Bell. Dr. Armstrong is President of the Canadian Medical Association.

Milk Stations and Infant Mortality in Montreal.

Dr. Lachapelle and Dr. Blackader have reported recently to the Board of Control of Montreal that during the late extremely hot weather, as a result of the work done by the milk stations in connexion with La Crèche de l'Enfant Jésus, Ste. Justin Hospital, and the dispensaries of St. Edward and Hochelaga, infant mortality in Montreal has been very considerably reduced. Several more milk stations are to be established.

July 22nd.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Cholera in New York.

EIGHT deaths from cholera have been reported to the Department of Health of New York City from the outbreak of the disease in Naples up to July 18th, six of these deaths having followed the arrival of the steamship *Moltke*. Two passengers of the steamship *Abruzzi*, which reached this port some two weeks ago, were the first victims, one dying in Auburn, N.Y., some 100 miles from New York, and the other in Brooklyn. Of the remaining six, five were passengers of the *Moltke*, and the sixth a night watchman at the detention hospital. Dr. Herman M. Biggs, chief bacteriologist of the Health Department, with Dr. Alvah H. Doty, health officer of the port, visited both Hoffman and Swinburne Islands, and reported that the colonies of detained passengers and cholera suspects on Hoffman Island, and the patients on Swinburne Island, were doing well. On July 20th Mayor Gaynor visited Hoffman Island in company with Dr. Doty, Dr. Biggs, and Assistant Surgeon-General L. E. Cofer, who represented Surgeon-General Wyman of the Public Health and Marine Hospital Service. Passed Assistant Surgeon R. H. von Esdorf, who has been in charge of the United States Marine Hospital at Mobile, Ala., and is an expert bacteriologist, has been sent to New York by the United States Government to inquire into conditions at Quarantine, and a rigid investigation is being made. It is believed, however, that there is no further danger of the infection spreading, and the public has been reassured by the official publication of facts concerning cholera, to the effect that it is introduced into the system only through infected food and drink, and is not contagious in the popular sense. It is understood that the steamship companies are taking great precautions to avoid shipping patients, and especially 'cholera carriers,' thus coöperating with both the United States and the Italian Governments to put an effectual stop to the incipient epidemic. This cholera excitement has put a complete check to the political efforts to discharge Dr. Doty in order that the political party recently victorious at the polls in New York State might put in one of its henchmen, and so secure the high emoluments of this responsible office. It is not unlikely that the result of the whole cholera scare will be to put the Quarantine Department of the State under the control of the Federal Government, where it properly belongs, all the water highways of the country being under central control.

Study of Infantile Anterior Poliomyelitis.

The Rockefeller Institute for Medical Research announces that it will devote its resources during the present season to the study of infantile paralysis and to the treatment of acute cases in its hospital. The ravages of the disease have been enormous during the past hot spell throughout the country.

Dr. Flexner has no doubt that the disease is communicated by means of the common house-fly. Physicians everywhere are requested to communicate to the institute reports of prevalence of the disease, and when possible to send by post sections of the spinal cord and naso-pharyngeal mucosa, preserved in glycerine, addressed to Dr. Simon Flexner, Sixty-sixth Street and Avenue A, New York.

A Clinic for Mental Diseases.

A clinic for mental diseases, to be open on Wednesday and Saturday mornings, and conducted under the auspices of the State Charities' Aid Association, has been inaugurated at the Long Island College Hospital, Brooklyn, New York City. It is the second of its kind in the State and the first in the city, and if successful will be followed by the establishment of similar clinics.

Infant Mortality in New York.

In the first six months of 1911 there were 7337 deaths from all causes of infants under one year of age in New York City, ten less than for the same period in 1910. The nurses of the Health Department have now under constant supervision over 11,000 infants. The seaside hospital at Coney Island, with a capacity of 184 beds, has been reopened for the summer in its new fireproof building, and will continue its very successful work in caring for invalid babies, with two internes, eight nurses, and a large visiting staff.

Travelling Luxury for the Insane.

The Long Island Railroad has put into commission a car built especially for insane patients who are to be conveyed to any of the numerous asylums on the island; the expense is borne partially by the State. It is larger than an ordinary car, being on the lines of a Pullman, is completely furnished with surgical instruments, strait-jackets and other apparatus for restraining violent patients, and the windows are protected with heavy brass grille work.

A New Treatment for Rheumatism.

Great interest has been manifested by the medical profession in the publication of a paper by Dr. Algernon Brashear Jackson of Philadelphia on the treatment of rheumatism. This treatment consists simply in the hypodermic injection of Epsom salts or magnesium sulphate in three-grain doses. The results are not only the free purgation that might be expected, but a rapid drop in the temperature and speedy relief from pain. In all the cases reported by Dr. Jackson he had previously exhibited sodium salicylate, either without result or with but slightly palliative effects. Previous literature on this treatment is practically *nil*, there being but one reference in a minor work on therapeutics, although there was at one time some slight vogue for the hypodermic use of Epsom salts for the relief of otherwise intractable constipation.

Charges against Dr. H. W. Wiley.

For a long period attempts, instigated by food and drug adulterators and manufacturers of misbranded products in America, have been made to discredit Dr. H. W. Wiley, chief of the Bureau of Chemistry of the United States Department of Agriculture, whose zeal in administering the Pure Food Act has made him extremely unpopular among these classes. These attempts have not been successful, nor have they had the effect of diminishing Dr. Wiley's zeal. By a curious coincidence, however, a committee of the Department of Agriculture has brought a series of charges against Dr. Wiley, and the Attorney-General, after examining these charges, has recommended that Dr. Wiley be allowed to resign, and has expressed the opinion that his action merits "condign punishment." The basis of the charge is that Dr. Wiley arranged to pay Dr. H. H. Rusby, a pharmacognosist of high standing, employed in connexion with the administration of the Pure Food Act, a higher salary than that allowed by law. The charge appears to be purely technical in character, and it is difficult to understand for what reason it is being pressed so relentlessly. It is known that President Taft fully approves of Dr. Wiley's strenuous administrative policy, and is, in fact, anxious that the law as to food and drug adulteration should be strengthened.[1] It will be interesting to learn the President's opinion of the technical grounds on which Dr. Wiley has been asked to resign from a position in which he has done such valuable public service.

July 24th.

[1] THE LANCET, July 8th, 1911, p. 106.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Medical Profession and the Union Government.

MEDICAL men throughout South Africa of all shades of political thought are profoundly dissatisfied with the methods of the first Union Ministry. Grave discontent was caused within a few days of Union by the breaking up of the old Colonial Health Departments. Although a year has since elapsed no effective substitute has been provided; nor is such apparently contemplated in the near future. A succession of unsatisfactory measures intimately affecting the medical profession were introduced into the House of Assembly, which, on being strenuously opposed by the profession, were subsequently whittled down or abandoned by the Ministry. The treatment of the Medical Council of the Orange Free State by two Members of the Cabinet still rankles. The manner of filling by General Smuts since the taking effect of Union of practically every medical vacancy of importance has given grave cause for criticism. Finally, there is the announcement of the retrenchment of Dr. A. J. Gregory and Dr. G. Pratt Yule, the medical officers of health for the Cape and Orange Free State respectively, to take effect as from August 31st next. The news of the proposed retrenchment of these officers, and particularly of the former, has been received with dismay by the profession and by local authorities. Dr. Gregory is universally considered the most suitable officer in South Africa to-day to be appointed to the post of chief medical officer of health for the Union on account of his qualifications, his long official experience and ripe knowledge of South African conditions, and of his well-known administrative powers. In view of the character of some recent appointments, it would seem as if Dr. Gregory's very fitness for the post and the fact that such is recognised by the profession are sufficient to cause him to be retired from the service under present conditions. The only reason that can be advanced in the case of Dr. Pratt Yule would appear to be because as a Government nominee on the Medical Council of the Orange Free State he had the courage to resign with his colleagues from that Council during the recent controversy with General Hertzog and General Smuts. In both cases the feeling of the profession is that no effort must be spared to deter General Smuts from carrying out his proposals. They cannot be explained on the ground of a reduced staff being necessary under the Union, for if an adequate health administration for South Africa is to be maintained, more whole time medical officers of health than are at present in the service of the Government will be required. The retrenchment of these officers is not likely to be carried out without causing much indignation from all who desire to see a healthy South Africa, and already a number of strongly-worded protests have been made to the Government on the subject by local authorities and medical societies. In the meantime it is understood that Dr. Pratt Yule has been offered and has accepted an important public health appointment in Canada.

Medical School of South Africa.

Amongst the recent arrivals in South Africa was Dr. R. B. Thomson, the newly appointed professor of anatomy at the South African College, Cape Town, and the first holder of the chair of anatomy established in South Africa. Dr. Thomson was the Crichton research scholar in anatomy in 1906–07 and again in 1907–08, and has held several teaching appointments at the Edinburgh University since he graduated in 1905, including the appointment of lecturer in anatomy with charge of the Bristo-street department of the University. He will be engaged for the next few months in superintending the organisation and equipment of the new anatomy department. The professor of physiology has not yet been appointed, but applications are now being invited for the post. The salary attaching to each of these appointments is £500 per annum, rising to £800, with a retiring pension of £300 per annum.

The Prevalence of Small-pox.

A few weeks ago over 200 cases of small-pox were discovered in the district of Herschel in the Cape Province. The cases appear to have been of a fairly mild type, and consequently the outbreak was not reported to the

authorities by the natives amongst whom it broke out. Unfortunately, it has now spread over a wide area, and judging from press reports promises to give the authorities considerable trouble in stamping it out. The disease has not only spread to other districts in the Cape Province but also to the Orange Free State and the Transvaal. The reason appears to have been the usual one—namely, a restricted expenditure on vaccination. The laws relating to vaccination in the Union—at any rate, in certain provinces of the Union—are far from satisfactory, and recently they have not been enforced. The vaccine stations in South Africa have been working under great pressure to supply sufficient lymph to meet the great demand that has arisen owing to the prevalence of the disease, and a large expenditure is being incurred all over South Africa on public vaccination. Amongst natives the disease used to be called "amaas," and was regarded by many practitioners until the beginning of the present century as a different disease from small-pox. Dr. G. Turner, when medical officer of health for Cape Colony, clearly proved that the disease is nothing but small-pox, modified possibly by racial or climatic factors. There are still a few practitioners who hold a contrary view, but the profession now recognise generally that "amaas" and small-pox are one and the same disease. It must be admitted that the disease is generally so modified in natives that its recognition by the new-comer from Europe is often a matter of difficulty. Yet those with any considerable experience of the disease as met with in South Africa have often seen slight attacks of amaas responsible for severe outbreaks of typical confluent small-pox, and cases of typical small-pox causing outbreaks of so-called "amaas." Moreover, vaccination protects against "amaas," the same as it does against small-pox, and patients recovering from "amaas" will not take when vaccinated. The real reason why doubt has ever arisen is apparently because even amongst unvaccinated natives the disease, as a rule, runs a very mild course, the usual mortality not being more than about 4 per cent., though striking examples of really severe cases are at times seen. Owing to the modification of the disease as it usually appears amongst natives in South Africa, it has been occasionally mistaken for other diseases, and one epidemic is recorded where the disease was actually reported by the district surgeon as syphilis, the true nature of the outbreak not being discovered until neighbouring districts had become infected. All health officers in South Africa to-day, as well as the profession generally, have accepted the disease as small-pox, but still occasionally even now doubts are cast by individual members of the profession on the diagnosis of particular outbreaks. To ensure the proper notification of the disease, however, by those medical men who still maintain that it is a disease other than small-pox, the Health Acts of most of the provinces require, *inter alia*, that small-pox, "amaas," and other diseases resembling small-pox shall be notified to the local authority by the medical practitioner in attendance.

Leprosy in Basutoland.

The time will soon arrive when there will be a uniform policy throughout South Africa in the dealing with leprosy. Mr. E. C. Long, the principal medical officer of that Protectorate, recently, at the invitation of the Resident Commissioner, addressed the native council on the prevalence of leprosy in Basutoland, which in recent years appears to have been making considerable headway. He proposed to the council that all lepers should be concentrated at a place chosen for the purpose, that suitable buildings should be erected, and all necessary arrangements made for providing medical and nursing attendance, more or less on the lines of the leper settlement in the Transkei. He expressed the hope that the council would advise Chief Letsie to grant a suitable tract of country which should be near the seat of a magistracy and not far from the railway. Mr. Long's address was listened to earnestly by the native chiefs in council assembled, and Chief Motsocui, in voicing their views, stated that Mr. Long was advocating a movement with which the council agreed, and that in due course they would advise the paramount chief accordingly.

The Proposed Johannesburg Research Laboratory.

It appears that it is the Witwatersrand Native Labour Association that intends to build the research laboratories at Johannesburg at a cost of £40,000, and to maintain the same at an annual cost of £10,000, and not the mining companies, as was at first believed. There is a rumour that the Government desires to transfer all its laboratory work to the new laboratory when established and to assume control of it. This would mean the closing down of all the laboratories in the provinces and would be disastrous to public health work generally, and very inconvenient to those who are engaged in private practice and who rely on bacteriological assistance furnished by the provincial laboratories. If the Witwatersrand Native Labour Association is willing to undertake the maintenance of the new laboratory it is sincerely to be hoped that the Government will not be able to obtain any measure of control over it, and that it will remain purely a research laboratory without undertaking any routine public health work whatsoever. It is desirable to prevent at all costs the research work in the new laboratory being swamped with routine work, as has been the case in the existing Government laboratories, and above all to ensure that the Government should have no say in the making of the new appointments to the laboratory staff in order that such appointments may be made on the merits of candidates and not possibly owing to political bias. Primarily it is understood that the institution is to be for the investigation of those diseases which affect particularly the health of mine workers, but also that it will be open for any research work into human diseases occurring in South Africa. If the laboratory can be established and maintained on sound lines a great future should be open for it, as remarkably little research work into human diseases peculiar to the country has hitherto been undertaken, and a vast field lies open. For instance, during the last three years there have been numerous outbreaks of an unknown infectious disease occurring amongst natives throughout South Africa, more particularly in densely populated native areas, that has hitherto defied investigation. It has been variously diagnosed as epidemic cerebro-spinal meningitis, scarlet fever, measles, influenza, enteric fever, paratyphoid, and typhus. Outbreaks of the disease have been recognised for at least the last 12 years. It appears to attack natives only, and it has occurred practically all over South Africa. It is understood that it has recently been specially studied by Dr. A. J. Gregory, the medical officer of health for the Cape, but no official report of his investigation has as yet been made public. The disease has given the authorities a great deal of trouble, and during the recent session of Parliament questions were asked in the House of Assembly regarding it. It will be unfortunate if the present investigation cannot be carried to completion, and if the retirement of Dr. Gregory should unfortunately be effected, it is to be sincerely hoped that he may be enabled to carry out his research in some other sphere of activity, as, for instance, in connexion with the proposed new Research Laboratories.

July 1st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Control of Charities.

THE Acting Premier of Victoria is dissatisfied with the present system of hospital management and proposes to introduce a Bill dealing with the matter. Replying to a deputation recently he said there was at present no control worth calling control. "As all roads from charitable institutions led to the Treasury it was possible to form an idea whether the management was satisfactory or not. He wanted to preserve what was good in the present system and sweep away what was bad. What he was hopeful of doing was of creating a board of three members. They would have to be well selected or the system would fail, but with good men they ought after a year's examination of existing institutes to know which were useful and what changes were advisable."

Alfred Hospital.

This institution has been especially indicated by the Acting Premier as needing reform. Matters came to an acute crisis when the committee proposed to appoint a clinical pathologist and take a certain portion of his salary from the general hospital revenue. The Acting Premier replied that the pathologist should be paid for out of students' fees, and that if the general revenue were drawn upon for such a purpose he would cancel the Government grant in aid. The managers replied that a clinical pathologist was

as necessary to the equipment of a modern hospital as a dispensing chemist, and that in any case the students' fees were insufficient for the needs. The Premier has since agreed to modify his position, but at the same time criticised the managers sharply on some other matters.

Friendly Societies Hospital.

The Victorian friendly societies recently held a conference with the local branch of the British Medical Association as to the terms on which the latter would coöperate in the establishment of a friendly societies hospital. Dr. A. E. White, the secretary of the British Medical Association, recently conveyed the following resolutions adopted at a special meeting of the branch:—

It appeared to be the feeling of the meeting that, whilst the object of the hospital was a laudable one, it was imperative that the hospital should be open to all medical officers of the different lodges, as you will see by the following resolutions which were passed: That the hospital should be classed as an intermediate hospital, and the Association had already resolved that intermediate hospitals shall be for patients who are ineligible for public hospitals but who are unable to pay the customary fees as well as the charges usually made at private hospitals. That there shall be no medical staff, but that any medical man may send in patients and attend them. That the medical profession shall be adequately represented on the management. That no patient shall be admitted without first producing a certificate of suitability from a medical practitioner who should whenever possible be the patient's regular medical attendant. If the signatory be not the patient's usual medical attendant an explanation to that effect should be appended. There shall be no out-patients. The same maintenance charge shall be made to all patients in any one hospital. Professional fees to be arranged between the doctor and patient. Touting for patients by advertisement or otherwise shall not be permitted.

These resolutions had been approved by the Eighth Australasian Medical Congress, but in addition the following resolution (also approved by the Congress) was made a *sine qua non* as regards the present hospital proposal:—

That no medical man should pass for admission into any friendly society lodge, club, or association for professional attendance at contract rates of remuneration any person whose income from all sources, together with that of his wife (if any), exceeds £4 per week—i.e., £208 per annum. Further, no contract rates (should be available) for anyone whose income (with that of wife) exceeds £6 per week, or £312 per annum.

The friendly societies have never agreed to this stipulation and declined to consider it in connexion with their proposal for the establishment of a hospital. The negotiations have therefore fallen through for the present.

Medical Unionism.

A deputation, consisting of the Australian Medical Association and various friendly societies, waited on the Acting Chief Secretary of New South Wales in regard to an alleged boycott of the friendly societies and other medical men by the New South Wales branch of the British Medical Association. The Chief Secretary said the British Medical Association members had the same right to say they would not work with non-unionists as any other calling. However, it might be as well to inquire into the matter, and he agreed to grant a Royal Commission. The deputation asked that all members of the medical profession registered in New South Wales should be compelled to consult with one another in the interests of public health at the risk of having their names erased, and that "cliquism" in hospital appointments be abolished.

Morning "Nips."

An agitation is at present being made in Victoria for legislation compelling the early closing of hotels. Mr. Ernest Jones, Inspector-General of Insane, has given his opinion that if the hours of business are to be curtailed hotels should be closed in the morning rather than at night. He states that the ill-effects of alcohol are almost all traceable to the "early morning nip," and that if facilities in this direction were abolished there would be public benefit. The opinion is said to be strengthened by experience gained in the Government inebriate retreat at Lara, which is under the direction of the Lunacy Department.

July 7th.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—Hospital Saturday was recently observed in Plymouth, when collections were made for the South Devon and East Cornwall Hospital. For some years the expenditure of this institution has exceeded the income, and at the commencement of this year there was a deficit of £6709 against the hospital. In 1910 the sum of £611 was collected on Hospital Saturday, and it is hoped that this year a larger amount will be obtained.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Tarabagan Disease.

NEWS has arrived in Peking of a recrudescence of marmot disease in Transbaikalia, Eastern Siberia. The details are indefinite as yet, but the latest information is that the epidemic is spreading southward towards the Chinese frontier. Dead marmots are now found as far south as Sharasun, which is only 35 miles north of the Russo-Chinese frontier. Some Chinese doctors are said to be at the frontier on the look-out and are instituting precautions, but where such a wide, sparsely populated area has to be dealt with it will be almost impossible to prevent the epidemic showing itself in Manchuria if it is at all active, as tarabagans inhabit the country all round Manchouli and the largest part of the trapping industry is conducted inside the Chinese frontier. Professor Zabolotny is on the spot investigating. It will be recalled that at the recent International Plague Conference no evidence was forthcoming which gave complete bacteriological proof that tarabagan disease was true plague. In the *Manchurian Daily News* (a Japanese paper) of July 10th there was a paragraph to the effect that Professor Zabolotny had dissected a dead tarabagan and had "found in the same animal both bubonic and pneumonic plague bacilli." In a letter to Dr. Kitasato he informs him of this, and is quoted in the Japanese papers as having said: "The presence in one living system of the germs of the two types of plague is indeed a disconcerting discovery, and has created a fresh subject of professional study." Probably there is some blunder here, as all the work hitherto done has shown that the B. pestis of pneumonic and that of bubonic plague are identical, the only differential cause being the channels of infection. It is perhaps well that this tarabagan epidemic has broken out so soon again while Professor Zabolotny and his experienced staff of assistants are still in the Far East, as the much-needed material for the elucidation of this important problem will now be forthcoming.

Chinese Medical Training: a New Scheme.

An interesting scheme is now on foot among American medical men and leaders of the American community in Shanghai. The idea is to establish a school to be known as the Harvard Medical School, and the enthusiasm already manifested should guarantee the success of the movement. A part of the arrangements has been concluded, and the first step is likely to be taken in September. The work is to be undertaken principally by Harvard University men under the superintendence of Dr. Edwards, a well-known medical educationist in the United States. Dr. Edwards, with three other members of the University, are shortly due in Shanghai to study the conditions of the task before them. They will coöperate with Dr. F. L. Hawks Pott, principal of St. John's University Medical School and his staff. The scope of this school will then be extended and a much greater number of students will be invited to join the classes. Original research work will be the principal feature of the curriculum. Some idea of the magnitude of the scheme may be gathered from the fact that contributions to the extent of $80,000 spread over a period of five years are already pledged. St. John's University has had a medical department since 1896. It is incorporated under American law. Students are required to have six years of English before they are allowed to enter on the medical course. The degree of M.D. is conferred upon graduates who have completed the five years' course and have maintained throughout the entire course a general average of 75 per cent. The South Manchurian Railway Company, which is a Japanese Government official line, superintending and running various industrial concerns and encouraging the economic development of South Manchuria, has arranged to establish a medical school at Mukden, comprising two departments—namely, pharmacology and medical science—and it is to be opened in September. The object of the school, it is said, is to lead the Chinese to the path of modern civilisation by instructing them in modern medical science and practice. The students of the school are to be recruited from Chinese young men. The company has a large well-equipped hospital at Mukden, which will be used for a time until the school has its own buildings constructed.

Peking, July 13th.

Obituary.

JOHN DUNNELL RAWLINGS, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

THE death occurred on July 17th of Dr. John Dunnell Rawlings of Dorking at the untimely age of 43. Dr. Rawlings took the conjoint diploma of the Royal Colleges of Physicians of London and Surgeons of England in 1893, and in the following year the M.B. of London University. He became in succession resident medical officer to the Royal Free Hospital, house physician to St. Bartholomew's Hospital, and house physician to the Lying-in Hospital, York-road. He then entered into practice with the late Mr. Chaldecott, and on the retirement of the latter he succeeded to the entire practice, which he worked single-handed until a few months ago, when increasing work compelled him to take a partner. He was surgeon to the Dorking Hospital, and was this year President of the Reigate Division of the British Medical Association.

We add the following appreciation by a personal friend:—"Dr. Rawlings was so exactly suited to the profession he chose that it is difficult to imagine him in any other career. He had just the necessary qualities to make an admirable practitioner. He was an excellent clinical observer, and took a keen interest in all the developments of medicine. His contributions to medical literature, though few, were characterised by shrewd insight, terse, vigorous expression, and possessed the salt of humour. His personal character made of the sound medical adviser also the close friend, for he had in a high degree the genius for friendship, so that he at once commanded the confidence and respect of his patients, while the esteem in which his colleagues held him is shown by his elevation this year to the chairmanship of the Reigate Division of the South-Eastern Branch of the British Medical Association. In the midst of a busy and useful career he suddenly learned that he had but a short time to live. He faced death with unflinching courage, still considerate and anxious to help others when he knew himself to be beyond human aid. Swiftly and surely the end came, and he was laid to rest amid every token of respect and affection."

Sir Dyce Duckworth, whose house physician Dr. Rawlings was, also writes: "I am much grieved to hear of the death of my former pupil and house physician. His short and grave illness was quite tragical. I had a great regard for him. He was a very able man and availed himself of every opportunity to add to his knowledge. He formed his opinions deliberately and had a robust element of singlemindedness and straightness in his character. All his work was done carefully and he gave of his best. Nothing daunted him in doing what was right and urging what he believed to be true. I remember that some years ago he was much provoked by the anti-vaccination party in his district, and withstood with much vigour the ignorance and prejudice which they sought to propagate. He had secured a good position in Dorking and its neighbourhood, and was on the road to success which his attainments and high character richly deserved. As a good friend, and an honourable member of the profession, he will be much missed by all who knew him. R.I.P."

WESTERN HOSPITAL FOR INCIPIENT CONSUMPTION, TORQUAY.—Dr. W. Odell, who has recently resigned the post of honorary physician to the Western Hospital, Torquay, after 16 years' service, has been appointed honorary consulting physician. Dr. J. E. Paul has been elected to fill the vacancy caused by the retirement of Dr. Odell. This institution, which was founded in 1850, contains 40 beds, and performs much useful work.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Mr. D. T. H. Croly, medical officer, Gold Coast, has retired; Mr. P. J. Garland, C.M.G., deputy principal medical officer, Gold Coast, has retired on pension; and Dr. W. F. Roach has retired with a gratuity. The following gentlemen have been selected for appointment to the staff: Dr. A. J. M. Crichton (Northern Nigeria) and Dr. A. J. R. O'Brien (Gold Coast).—*Other Colonies and Protectorates:* Mr. R. Bury has been selected for employment as a medical officer in Nyasaland.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—**At a meeting of the Comitia of the Royal College of Physicians of London and of the Council of the Royal College of Surgeons of England, on July 27th, Diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon 97 candidates (including two ladies—Miss Collie and Miss Ricketts) who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board, and have complied with the by-laws. The following are the names of the successful candidates:—**

Mohammed Afifi, Cairo and London Hospital; Edward William Atkinson, B.A. Cantab., Cambridge University and London Hospital; John Horatio Baldwin, M.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Rawson Barlow, Middlesex Hospital; Frank Basford, St. Mary's Hospital; Maurice Beddow Bayly, Charing Cross Hospital; Edward Billing, B.A. Cantab., Cambridge University and Guy's Hospital; Henry George Barham Blackman, Guy's Hospital; Herbert Stuart Blackmore, L.D.S. Eng., University College Hospital; Leon Francis Brandenbourg, M.B., C.M. Madras, Madras University and King's College Hospital; Thomas Creswell Brentnall, Manchester University; Ernest Frederick Westmore Buckell, University College Hospital; Monamy Aston Cornwall Buckell, University College Hospital; Joseph Henry Campain, Liverpool University and Guy's Hospital; Ronald George Canti, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Frederick George Chandler, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Arthur Ryland Chavasse, M.A., B.M., B.Ch. Oxon., Oxford University and St. Thomas's Hospital; Gilbert Charles Chubb, University College Hospital; Maysie Alice Marianne Collie, Otago University and Royal Free Hospital; *James Garfield Crawford, New Zealand University; John Hamilton Cumming, Cambridge University and St. Bartholomew's Hospital; Henry Harvard Davis, Guy's Hospital; Jyotish Chandra De, M.B. Calcutta, Calcutta University and Middlesex Hospital; Alexander Arnitt Dear, Liverpool University; Georg Dorner, M.D. Königsberg, Königsberg and Freiburg Universities; William Henry Dupré, St. Bartholomew's Hospital; Garas Girgis El-Daba, Cairo and University College Hospital; Daniel Charles Evans, University College, Cardiff, and London Hospital; Robert Noel Farrer, Leeds University; Alfred George Timbrell Fisher, Bristol University and St. Bartholomew's Hospital; Geoffrey Troughton Foster-Smith, Guy's Hospital; Percy Lempriere Gibson, B.A. Oxon., Oxford University and King's College Hospital; Vincent Glendining, Guy's Hospital; Harold Kinder Griffith, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harry Leroy Satterlee Griffiths, University College, Cardiff, and Guy's Hospital; John Griffiths, University College, Cardiff, and London Hospital; Henry James Hacker, St. Bartholomew's Hospital; Edwin Cecil Hardwicke, B.A. Cantab., Cambridge University and St. Mary's Hospital; Alfred Ridley Hargreaves, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Leonard Austin Harwood, L.D.S. Eng., Westminster Hospital; John Rollo Hayman, Middlesex Hospital; John Eric Hepper, St. Bartholomew's Hospital; Harold Howard Hiley, Bristol University and King's College Hospital; Sydney Francis Huth and Charles Eric Sweeting Jackson, St. Mary's Hospital; Tiruvallur Katakam Jayaramulu, Madras and Edinburgh Universities and Middlesex Hospital; John Cecil Jefferson, Manchester University; Stanley Gower Johnson, Middlesex Hospital; Rupert Llewellyn Jones, London Hospital; Hugh Percival Joseph, L.M. & S. Ceylon, Ceylon Medical College and Middlesex Hospital; Anthony Kennedy, B.A. Cantab., Cambridge University and Middlesex Hospital; Alfred Bertie Kramer, Edinburgh University, University College and London Hospitals; Edward Claude Linton, London Hospital; Frederic George Lloyd, Guy's Hospital; Richard Hugh McGillycuddy, University College Hospital; Reginald Kinlock MacGregor, St. Bartholomew's Hospital; Quintus Madge, B.A. Cantab., Cambridge and Liverpool Universities; Geoffrey Marshall, Guy's Hospital; Valentyne Cleeve Martyn, St. Mary's Hospital; Mendel Mayers, London Hospital; James Menzies, St. Mary's Hospital; Clement Treves Neve, St. Bartholomew's Hospital; John Herbert Owens, London Hospital; Chandrashekhar Damodar Pande, Bombay University and Middlesex Hospital; Cecil Joseph Herbert Pearson, London Hospital; George Reynolds Peterson, M.D., C.M. McGill, McGill University and St. Bartholomew's Hospital; Vivian St. Leger Pinnock, Bristol University and University College Hospital; Arthur Thomas Pitts, Middlesex Hospital; James Potter, London Hospital; *Walter Woodall Pratt, Bristol University; Cecil Walpole Preston-Hillary, Guy's and Middlesex Hospitals; Robert Anstruther Ramsay, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Rachel Ricketts, Calcutta University and Royal Free Hospital; Christopher Hugh Leete Rixon, St. Thomas's Hospital; Hermann Melchior Robertson, M.D., C.M. McGill, McGill University and London Hospital; Frederic Gardiner Rose, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Stewart Henry Rouquette, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Lionel Walter Kennedy Scargill, Cambridge University and St. George's Hospital; Edward Gustave Schlesinger, B.Sc. Lond., Guy's Hospital; Emanuel Prinski Scott, London Hospital; Arthur Ashton Smalley, M.B., Ch.B. Manch., Manchester University; Reginald Gershom Sparkes, St. Mary's Hospital; John Richard Cook Stephens, London Hospital; William Steuart, St. Bartholomew's Hospital; Alan Murray Stuart, St. Mary's Hospital; Cecil Hearle Symons, Charing Cross Hospital; Frederick John Thorne, B.A. Cantab., Cambridge University and Middlesex Hospital; John St. Andrew Titmas, L.D.S. Eng., Middlesex Hospital; Francis Richard Todd,

St. Bartholomew's Hospital; John Reginald Arthur Digby Todhunter, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Bernard Thomas Verver, Guy's Hospital; Maximilian Christian Wall, Guy's Hospital; Rowland Ward, Leeds University; John Robert Douglas Webb, Liverpool University; Arthur White, St. Thomas's Hospital; Owen Elias Williams, Guy's Hospital; and Matthew May Woods, Cambridge University and St. George's Hospital.

* Diploma of M.R.C.S. granted on July 13th, last.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Diplomas in Public Health were conferred (in conjunction with the Royal College of Physicians of London) upon the undermentioned 20 gentlemen:—

David Main Baillie, M.B., Ch.B. Aberd., Aberdeen University and University College; Samuel Lindsay Brohier, L.R.C.P., M.R.C.S., Ceylon and Middlesex Hospital; John Philip Henry Davies, B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Reginald Inglis Douglas, M.B., B.S. Durh., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; William Henry Wilson Elliot (Lieutenant-Colonel I.M.S., D.S.O.), M.B. Lond., M.R.C.S., L.S.A., Guy's Hospital; William Charles Dillon Hills, L.R.C.P., M.R.C.S., University College; James Bonnell Howell, L.R.C.P., M.R.C.S., University College; John Johnstone Jervis, M.B., Ch.B. Edin., Edinburgh University and University College; Robert Henry Hatten Jolly, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Charing Cross Hospital and University College; Thomas McCririck, M.B., Ch.B. Glasg., Glasgow University and King's College; John McKenzie (Captain R.A.M.C.), M.B., B.Ch. Aberd., Aberdeen University; Bernard Moiser, M.B. Lond., L.R.C.P., M.R.C.S., University College; Henry Pratt Newsholme, M.B., B.Ch. Oxon., M.R.C.P., Oxford University and St. Thomas's Hospital and University College; Jitendra Nath Rai, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Edinburgh and University College; Bikrama Jit Sahni, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Edinburgh and University College; Percy Herbert Stirk, L.R.C.P., M.R.C.S., University College; William Reginald Margetts Turtle, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College; Ernest Alfred Freear Wilkes, L.R.C.P., M.R.C.S., University College; Frederic C. Wood, L.M.S.S.A., London Hospital and University College; and William Allan Young, M.B., Ch.B. Edin., Edinburgh and Cambridge Universities and University College.

The Licence in Dental Surgery was conferred upon Oliver Beale Townshend of Guy's Hospital Dental School, who has now complied with all the necessary by-laws of the College.

VICTORIA UNIVERSITY OF MANCHESTER.—On July 28th the following degrees in Medicine, Surgery, and Dental Surgery were conferred:—

M.D.—Roland Hereward Titcombe (awarded gold medal); Herbert Evelyn Allanson, James Randal Hutchinson, Peter Moran, Herbert Tomlin, Henry Whitehead, and John Stirling Young (thesis commended); William Edward Bamber, George Herbert Brown, Harry Howard Bywater, James Frederick Corson, George Hamer Leigh, James Wood, Martin Stanley Wood, and Ambrose Edgar Woodall.

M.S.—John Morley.

B.M., B.S.—Arthur Hillyard Holmes, William Henry Kauntze, Jane Craig Miller, Sidney Bertram Radley, and John Sebastian Bach Stopford (second class honours); Charles Edward Butterworth, Norman Duggan, Alan Willis Gaye, Harold Heathcote, Mabel Eliza May, Manfred Moritz, Lovel Moss, George Ernest Sawdon, James Bethune Scott, William Stirling, and George Kenworthy Thompson.

B.D.S.—Arthur Cyril William Hutchinson.

ASSOCIATION INTERNATIONALE D'UROLOGIE.—The Second Triennial Congress of this association was held in London from July 24th to 28th. On the evening of the 24th a reception was held by Mr. E. Hurry Fenwick, President of the Congress, and Mrs. Fenwick at Princes' Gallery, Piccadilly, which was largely attended by members and their friends. At the first meeting on the 25th opening addresses were given by Professor Israël of Berlin, vice-president of the association, Professor Pousson of Bordeaux, also vice-president of the association, and Mr. Hurry Fenwick. The first scientific meeting followed immediately after the opening meeting, the question on the order of the day being Phosphaturia and Oxaluria. The discussion was opened by Dr. Hogge of Liège, Professor Richter of Berlin, and Professor Teissier of Lyons. On the 26th the question on the order of the day was Remote Results of Prostatectomy. The speakers opening this discussion were Dr. Hugh Young of Baltimore, U.S.A., Professor Robert Proust, Paris, Dr. Regino Gonzales, Mexico, and Professor O Zuckerkandl of Vienna. So much interest was taken in this subject that a second meeting was called later in the day to continue and finish the discussion. In the evening a banquet was given at the Savoy Hotel by the members of the British section to the foreign members and their friends, at which more than 200 were present. On the 27th the general assembly of the association was held in the morning, at which it was decided that the next Congress should be held in Berlin, under the presidency of Professor Israël, who appointed Professor Posner of Berlin as general secretary of that Congress. The question on the order of the day was then discussed—viz., Extensive Resections of the Bladder. The discussion was opened by Mr. Hurry Fenwick, Dr. D. Giordano of Venice, and Professor Thorkild Rovsing of Copenhagen. On the 28th the members of the Congress were received at the following hospitals: St. Bartholomew's, the London, Guy's, St. Thomas's, and St. Peter's. Throughout the duration of the Congress visits were paid to various hospitals and places of interest. From the scientific point of view the Congress proved extremely successful, as the discussions were well attended and the papers of a high standard.

THE GRAND PRIORY OF THE ORDER OF THE HOSPITAL OF ST. JOHN OF JERUSALEM IN ENGLAND.—The King has sanctioned the following appointments—To be Knights of Grace: The Hon. Surgeon-General Charles Pardey Lukis, C.S.I., Surgeon Lieutenant-Colonel Sir Warren Roland Crooke-Lawless, C.I.E., and Mr. David Charles Lloyd Owen, F.R.C.S.I. (from Esquire). To be Esquires: Mr. John Horatio Yolland, M.R.C.S., L.S.A. (from Honorary Associate), Major Gilbert Stewart Crawford, R.A.M.C. (from Honorary Associate), and Dr. Thomas Gibson.

NORTH DEVON INFIRMARY, BARNSTAPLE.—At the annual meeting of the supporters of the North Devon Infirmary, which was held on July 25th, the honorary medical staff advised that one of their members should be appointed honorary pathologist to the institution. Dr. Frank Leslie Thomas was elected to the post. "The Ladies' Association" has collected £10 for a microscope, and the necessary apparatus for bacteriological work has been purchased by the committee of the infirmary.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Bill.

As was stated last week, the House of Commons on Wednesday, August 2nd, proceeded with the discussion on Clause 14 of the National Insurance Bill. This clause deals with the administration of medical benefit, and on it arose several of the points which have agitated the medical profession since the Bill was introduced. The text of the actual amendments made in the clause was published last week. The effect of those changes is that the proposed income limit of £2 a week has been rejected in favour of local arrangements with the Local Health Committees, combined with an accumulation of the medical benefits of persons having incomes above the local limit. These accumulations are in the first place the source from which payment for medical attendance is secured. Then another amendment gave free choice of doctors drawn from a local panel. A third amendment safeguarded the position of existing medical institutes of Friendly Societies, but a proposal to impose a minimum per capita payment of 8*s.* 6*d.* was negatived. Another change in the clause gave free choice of chemists and druggists on the same principle as the free choice of medical men.

The whole sitting was occupied by a discussion on these changes, and it is only possible to note the leading speeches and features of the debate. Sir PHILIP MAGNUS began the discussion by moving an amendment to exclude from medical benefits persons whose incomes from all sources exceeded £104 a year. The arguments with which he supported his contention were familiar, as they touched upon the various points which had been discussed in medical circles for the last two or three months.

Mr. LLOYD GEORGE made a speech rejecting the idea of finding a solution for the various problems on the lines suggested by Sir PHILIP MAGNUS. The Chancellor of the Exchequer regarded the income limit of £2 a week as rigid and artificial and inapplicable to both town and country. The amendment would deprive people who were earning over £2 a week of the services of the medical man on contract terms. He pointed out that in a district where it was the position that the medical practice was a contract practice, and where the men earned, especially in good times, over £2 a week, they would be deprived of these benefits. He quoted from a report of the British Medical Association in which a medical man from the Durham district said: "I am almost convinced that private practice would be a failure among miners. There would be no getting one's bills paid, and as there is a considerable floating population among them—say, 10 to 15 per cent.—the loss on bad debts from this cause alone would be considerable." That doctor protested against an amendment of this kind. The right honourable gentleman went on to point out that the £2 limit would not be of the slightest use to medical men in country districts, where the man who earned £2 a week was a very exceptional person. In these districts men earning 25*s.* or

30s. a week were paying their medical men on the fee system. The amendment gave no protection at all to the medical men in these districts. A pound a week in one district might be as much as 30s. a week in another district. The £2 a week was a perfectly artificial limit and did not represent anything like the merits of the case. Was it not very much better to leave the adjustment of the income limit to the Local Health Committees, and to say that in these districts where men had been in the habit of paying fees to doctors they could do so in the future where the income was, say, 25s. a week? There was a sort of rough-and-ready line which might be created by the medical profession and the County Health Committee and the representative of the Friendly Societies. What would happen under that arrangement would be that with regard to a class of the population there would be the guarantee of the Health Committees that the medical men would be paid. He contended that medical men would be better off for the simple reason that now they were losing heavily upon the lower-wage people of the country. A medical man in the country hardly ever refused to attend a man. He did not know of a case of refusal, though there might be cases where a man had run up bills until at last the patience of the doctor had been exhausted. A doctor had sometimes 40 per cent. of bad debts, but under the new proposals the country practitioner would get 6s. or 4s. or 5s. in respect of that class of the population. If the amendment of the Member for Hoxton (Dr. ADDISON) were carried there would not be a limit imposed. But a rough-and-ready line which would be agreed upon between the practitioners and the Public Health Committee would be enforced. In this case the medical man would say, "We decline to attend people of that kind except upon the old system"—the 5s. or 6s. would be accumulated to the credit of the person. Thus, if a man who was ill paid his doctor's fees he could draw upon the reserve which was placed to his credit in the Friendly Society. The man might roll up his benefit for years, and then he could draw on the reserve to pay the medical man. There was a personal advantage in this. Many medical men would not take contract work on any terms, and if a man who was insured wanted to be attended by such a medical man an arrangement could be come to. The man would say: "I do not want you to work on contract terms; I only want you to be on the panel so as to enable me to draw on the medical reserves on the books of the Commissioners for the purpose of paying your bill." That arrangement could be adopted with advantage. He suggested to those who had the interests of the doctors and of the national health at heart that it was better to have an elastic system of that kind than to have a sort of attempt to fix a rigid income limit. It would certainly be better in the rural districts where this £2 limit would not be worth the paper on which it was printed. On the other hand, a free, open, and elastic system would work admirably. There were thousands of medical practitioners who drew the bulk of their patients from men who earned 25s., 30s., or 35s. a week. An elastic system would enable the doctor to carry on his present practice; it would enable him to get his bills paid because there would be something to assist the workman to pay; and it would also enable the workman to secure the services of his present medical adviser, even although the medical adviser refused to act on contract terms. He therefore thought it would be better if the Committee would proceed to the amendment of the honourable Member for Hoxton, because that met the realities of the case, and did not attempt to fix an artificial limit which suited neither the doctor nor the patient, and which certainly was not in the interests of national health.

Several speakers strongly supported the contentions put forward by Sir PHILIP MAGNUS. Sir ROBERT FINLAY, who sits for Edinburgh University, stated that on the point of an income limit the medical profession was absolutely united. He emphasised the strong feeling in the medical profession against the contract system. There was a very strong feeling that it was bad in its effect alike on the doctor and on the patient, and a great many medical men would not take contract prices. It was perfectly plain that the Bill was introduced without sufficient inquiries from those qualified to give information as to the conditions which actually attended medical practice. He therefore hoped that the Chancellor of the Exchequer would reconsider his position and accept the amendment, to be supplemented by discretionary power in the districts to which the right honourable gentleman had said the amendment was inapplicable. Sir HENRY CRAIK also made a protest against the attitude of the Chancellor of the Exchequer, and considered that the Bill without the amendment would have a very injurious effect upon medical practice. Mr. BOYTON, who spoke as the Parliamentary representative of something like 1000 medical men, said that the profession was entirely in favour of the amendment. However, when the amendment was put a division was not pressed and it was allowed to be negatived.

Mr. LLOYD GEORGE then moved his amendment to provide for a free choice of doctor. As was stated last week, it sets forth a scheme for the formation of a panel of medical practitioners who are willing to give treatment to insured persons, and a right is given to the insured person to choose any practitioner on the list. This proposal of the Chancellor of the Exchequer received some criticism on points of detail, but it was unanimously accepted and embodied in the clause.

Dr. ADDISON's amendment was then discussed. It was to the effect that the medical benefits of insured persons enjoying an income above a certain limit to be fixed locally by the Health Committees should be accumulated for them, and when they required medical attendance their accumulations should go towards the payment of the medical man's fees. The amendment further permitted similar arrangements to be made by insured persons who came within the income limit, but desired to make their own arrangement for medical attendance and treatment. Dr. ADDISON said that in putting forward this amendment he had no intention of putting forward some special plea for the medical profession. Some Members seemed to suggest that the medical Members in the House were exalting the medical profession—"dictating" to the House. Against that he would enter a very respectful and modest protest. However, he would sincerely hope that the House would credit them with the sincere intention to have the medical service placed on a sound footing. He had no desire that the medical profession should be placed in an unduly privileged position. Doctors up and down the country quite unnecessarily said that they would be ruined by the Bill. These representations had often arisen owing to their not quite understanding it. They had overlooked the fact that they would be paid for people who were well and that they would have no bad debts. They had overlooked the fact that many families would not really be dependents of insured persons, and that they would be entitled to charge for these as hitherto. A great deal of the alarm, he believed, was unwarranted, but still a certain amount of the alarm was quite real. It might be unfounded, but it was genuine. The principle laid down by his amendment was local option, and it was very much preferable to the definite statutory limit. A number of medical men practising under quite different conditions in different districts might have a number of private patients who became insured persons. He thought that the people should be consulted and an opportunity given to those who had been private patients, so that under a satisfactory arrangement they might have their wish to continue on the same lines. The principle was that those who had hitherto been private patients under a satisfactory arrangement should still be accepted if they wished to continue on the same lines. There was another important consideration which had not yet been pointed out. If a number of persons in any place continued to pay fees under arrangement, the demand for higher capitation payment for those of lower means would of course be correspondingly diminished. If this payment could be reasonably called upon by fees which were not on a universal scale, there was not the same necessity for asking for a high capitation rate for the lower classes. An arrangement of that kind would be a great advantage. His amendment allowed for conditions of diverse arrangements. Did the Committee think that the present arrangement would introduce elasticity into the whole system? The thing was experimental, and he thought it would be quite a mistake if the Committee straight away laid down hard-and-fast lines. The amendment would leave it open to evolve a satisfactory system both of work and pay. It was applicable to the whole country, and he believed that it would conduce to the smooth working of the whole if the Committee were to accept it now. He would ask those honourable Members who, he believed, were somewhat inclined to oppose some of the principles laid down, to refrain from doing so as far as they conscientiously could, because after all he felt that in the course of a few years there would be evolved an equitable system of contract throughout the country generally. The experience of contract practice had been used with some misunderstanding. He did not think that the whole medical profession was against a contract. It depended upon the terms of the contract. The amendment would apply equally to the rural districts of Yorkshire and elsewhere and the crowded parts of London. It would provide a basis for gradually working out an equitable system.

The general discussion on the principle involved in the amendment had taken place on the proposal of Sir PHILIP MAGNUS, when the Chancellor of the Exchequer had indicated his preference for Dr. ADDISON's method of dealing with the situation. A few speakers made very brief comments on the amendment. A division took place on it, but it was carried by 279 votes to 41. Amongst those who voted for the amendment were Mr. LLOYD GEORGE, Dr. ADDISON, Sir HENRY CRAIK, Dr. ESMONDE, Sir ROBERT FINLAY, Dr. HILLIER, and Sir PHILIP MAGNUS. The Government Whips acted as tellers for the amendment.

About an hour's debate took place on Mr. CECIL HARMSWORTH'S amendment to safeguard the interests of the medical institutes which have been established by Friendly Societies in great towns. The terms of the amendment were indicated last week. This amendment was accepted without a division. There was no opposition to Mr. GLYN-JONES'S proposal to give a free choice of pharmacists to insured persons. He proposed that there should be a panel of pharmacists in a district composed in the same method as the panel of medical men, and a patient having obtained a prescription from a medical man might take it to any pharmacist on the panel to have it dispensed. This proposal was accepted. There was a good deal of discussion in regard to the sharing of excess expenditure on account of medical benefit by the Treasury and local authorities, but the point at issue was financial rather than medical.

Before the clause as amended was submitted to the Committee for

approval, Dr. ESMONDE brought forward a proposal to insert a new subsection to the effect "that no Health Committee shall contract with any medical practitioner for a less fee than eight shillings and sixpence per insured person per year." The honourable Member contended that insured persons should be secured against any attempt to employ medical men at a remuneration which did not afford them an opportunity of giving their very best attention to the patient. A capitation grant of 6*s.* was quite inadequate. Dr. ESMONDE proposed 8*s.* 6*d.* because the sum was already paid by a Government department. He did not see how honourable Members could logically expect medical men to give their best attention for less. Mr. LLOYD GEORGE'S attitude to this amendment was hostile. He said that Dr. ESMONDE was making a demand which the medical profession had not made before. There were at present many rural districts where the amount of the capitation payment was 2*s.* 6*d.* He thought that was unreasonable, but the honourable Member asked that it should be instantly raised to 8*s.* 6*d.* A committee of the British Medical Association had made an investigation and out of all the suggestions received only about thirty ventured as high as the honourable Member. The vast majority asked for a sum of 6*s.* or under. The case of the Post Office precedent was cited by the honourable Member, but it was very different from the one presented by the Bill. These provisions had to be made for one or two men in a rural district, and naturally the minimum was higher than if it had applied to a few hundred patients in the district. The Chancellor of the Exchequer expressed a hope that there would be no attempt to fix an amount of remuneration which might very well in some districts be higher and in some districts lower. In his attempt to fix a minimum of 8*s.* 6*d.* the honourable gentleman never seemed to give a thought to the benefit of the workmen themselves. If 8*s.* 6*d.* was given as a minimum to the medical man he must get it at the expense of the benefits of the workmen themselves. After some discussion Dr. ESMONDE'S amendment was negatived without a division, and Clause 14 as amended was agreed to.

Clause 15, which relates to the administration of sanatorium benefit, was also passed, but some amendments consequential on other changes in the Bill were made in it.

On Friday, August 4th, Clause 16 (administration of maternity benefit) was considered, and two questions of particular medical interest were raised. As the result of a discussion, it was decided to insert in the clause a provision to the effect that the mother should decide whether she should be attended by a registered medical practitioner or by a duly certified midwife, and should have free choice in the selection of such practitioner or midwife. Sir ALFRED MOND, when the amended clause was under review, asked whether when the midwife required the aid of a medical practitioner there was any fund out of which to pay the latter. The point was one of substance, especially in view of the duties imposed on the midwife by the Midwives Act in these cases. Mr. J. W. HILLS also enforced this point. Mr. MCKENNA, on behalf of the Government, acknowledged that the question was material and promised to give it consideration before the report stage. Clause 16 was then passed. Clause 17 gives power to approved societies to subscribe to hospitals, and some drafting and consequential amendments were embodied in it before it was passed.

When it finished the consideration of Clause 17 the House of Commons concluded that part of the National Insurance Bill which deals with the administration of benefits. It does not seem probable that further progress will be made with the Bill until the autumn session, which will begin in October. Thirteen sittings in Committee have now been devoted to the measure, and if the rate of progress has been slower than the Government desired, it is also the case that some of the difficulties have been surmounted with greater ease than was anticipated. Clause 14, which raised in its acutest shape the controversy with the medical profession, was passed in a single sitting, many of the amendments of which notice had been given not being moved. This, however, would have been impossible had there been a rigid adherence to the original terms of the clause. The vesting of the administration of medical benefit in the Health Committees to the exclusion of the approved societies, the granting of free choice of medical men to insured persons, and the acceptance of Dr. ADDISON'S amendment smoothed the way for the passing of the clause. Ample time for review of its provisions will be given before the report stage is reached. Owing to the two months' holiday which the House of Commons is going to take, it will be November or December before the House will be able to review its present decisions with regard to the medical profession in the light of the matured criticisms on the clauses in their new form.

Asylum Officers (Employment, Superannuation, and Pensions) Bill.

The Asylum Officers (Employment, Superannuation, and Pensions) Bill has been re-shaped by a Select Committee of the House of Commons. The original Bill proposed a 60-hours week exclusive of meal times for officers and servants in asylums. The amended Bill would impose on the visiting committees of asylums the duties of framing a scheme prescribing the hours of duty for nurses and attendants, and other conditions of service. The 60-hours week was discarded in favour of 140 hours per fortnight for day staffs and 120 hours per fortnight for night staffs. In the amended Bill the committee decided that 25 years' service, irrespective of age, was to entitle female officers and servants to a superannuation allowance. A clause permitting gratuities to them when they retired after ten years' service was embodied in the Bill. The clause forbidding the visiting committee to delegate its powers of dismissal in certain cases was redrafted. The Committee has issued a special report dealing with the changes which have been introduced into the Bill.

HOUSE OF COMMONS.

THURSDAY, AUGUST 3RD.

Calf Lymph.

Mr. C. DUNCAN asked the President of the Local Government Board whether the calves that were used for providing lymph for vaccination purposes were afterwards sold as veal; if so whether he could see his way to put an end to such a practice; and, if not, what became of these animals after they were no longer used for lymph.—Mr. BURNS said in reply: After slaughter each calf is carefully examined by a veterinary surgeon and the veal from those animals which are found to be free from disease is sold. There is no reason to doubt that such veal is perfectly wholesome.

Mr. C. DUNCAN: What proportion of the calves is not sold for human food?—Mr. BURNS: I could not say.

Mr. C. DUNCAN also asked the right honourable gentleman whether, since the Royal Commission on Tuberculosis had reported that bovine tuberculosis was communicable to human beings as well as animals, he would say whether any, and, if any, what, precautions were taken to prevent the danger that cancer and consumption might spread by vaccination with calf lymph, seeing that the calves used were inoculated from other calves, and any one in the series might therefore transmit the germs of tuberculosis.—Mr. BURNS replied: Each calf after vaccination and abstraction of the lymph from the vesicles is sent to be slaughtered and is then carefully examined by a veterinary surgeon. The lymph is not issued for use unless the veterinary surgeon certifies that the calf was free from disease. In addition to this primary precaution, there is the further fact that the lymph is glycerinated, and it has been proved by the experimental addition of tubercle bacilli to vaccine lymph that the glycerine destroys such tubercle bacilli. Before issue all lymph is bacteriologically examined and tested. There is no evidence whatever pointing to the possibility that cancer—a disease chiefly of late adult life—can be spread by vaccination.

Deaf-mutes.

Dr. CHAPPLE asked the Secretary of State for the Home Department what were the numbers of deaf-mutes in the United Kingdom at present supported by State or charitable funds; whether these numbers had been increasing; what percentage exhibited hereditary transmission of their defect; and whether, in view of the frequent celebrations of the marriage of deaf-mutes, he would cause these statistics to be sent to all authorities and guardians connected with deaf and dumb institutions.—Mr. CHURCHILL answered: Figures relating to deaf children of school age will be found in Part I. of the volume of statistics of public education. I have no information as to the number supported from charitable funds. It should be borne in mind that if there be any increase in the figures it is likely to be due to greater care in dealing with all proper cases and not necessarily to an increase in the number of deaf and dumb children. The Census returns from 1851 to 1901 show a continuous decrease in the number of deaf and dumb proportionately to the population, and I think it would be well to wait for the new Census figures before considering whether any action is required.

Local Government Board Administration.

On the vote for salaries and expenses of the Local Government Board in Committee of Supply,

Mr. PETO called attention to the grievances of vaccination officers whose remuneration had been diminished owing to the increased number of exemptions from vaccination that had taken place under the legislation of recent years.

Mr. BUTCHER, in supporting the appeal for the remedy of the grievances of these officers, mentioned that in 1907 there were 651,000 successful vaccinations in England and Wales. In 1909 they had gone down to 547,000, so that it was obvious that these men were suffering a serious reduction of income.

Mr. CHAPLIN regarded the administration of the Vaccination Act under the present system as a discouragement of vaccination. It was a very serious thing when year after year the claims for exemption were increasing to such an extent that if they continued in the present ratio for another 10 or 15 years the exemptions would be the rule, and the vaccinated children would be only the exceptions.

Mr. BURNS replied that last year there were 1420 vaccination officers, but only 400 of them gave their whole time to the work. Between 1907 and 1911, mainly at the instigation of the Local Government Board, gratuities had been sanctioned to 321 vaccination officers, increased fees had been given to 279, and in 13 other cases compensation of some form or another had been given. The Local Government Board, instead of looking at the vaccination officer's grievances with a cold eye and a lack of generosity, had helped, either through gratuities, increased fees, or in some other form of compensation, in 623 cases out of the 1020 cases which were paid by fees. Vaccination officers were not the servants of the Local Government Board. However, if further persuasion of the guardians was not productive of fair treatment in a certain small number of cases the Local Government Board would consider what steps would be necessary to secure reasonable treatment for the vaccination officers. As to the suggestion to remunerate them all by salary, he could not ask the guardians to give a fixed salary for a very small amount of work in certain instances. The Local Government Board would look into the matter in a fair and broad spirit with a view to remedying the gross grievance from which a few suffered and with a view to adopt a standard of remuneration which was fair and reasonable and to which these public officers were entitled. Speaking later on the administration of the Housing and Town Planning Act, the right honourable gentleman mentioned that in 1910-11 1046 local authorities issued closing orders with regard to 2678 houses, as against 587 orders two years previously. That, he thought, was satisfactory. The right honourable gentleman also expressed satisfaction with the progress which town planning had made in the last two years.

MONDAY, AUGUST 7TH.

Sleeping Sickness in Nyasaland.

Mr. LLOYD asked the Secretary of State for the Colonies whether cases of sleeping sickness had recently been reported in Angoniland, on the south-western arm of Lake Nyasa, in proximity to the Government game reserve; whether 22 cases had occurred in the last six months in the Protectorate; and, if so, what special measures had been and were being taken to safeguard Nyasaland.—Mr. L. HARCOURT replied: Three cases of sleeping sickness have recently been reported on the south-western arms of Lake Nyasa, in proximity to the Government game reserve. Fresh cases are being continually discovered, and I am unable to give the exact number for the last six months, but 54 cases in all have been reported to me. An account of the measures which are being taken will be found in the Sleeping Sickness Diary of the Protectorate, Part XIV. The honourable Member is probably aware that I have sent to Nyasaland a well-equipped scientific expedition, under the leadership of the distinguished expert Sir David Bruce and the general direction of the Royal Society, to investigate the relation between the African fauna and the trypanosome diseases of men and animals. Some of the members of the Commission have already sailed, and the rest will follow in about three months when the laboratory and dwelling houses will be approaching completion.

The Prevention of Anthrax.

Mr. C. BATHURST asked the Parliamentary Secretary to the Board of Agriculture whether, in view of the recent increase of anthrax throughout Great Britain, and the universally accepted theory that the main source of infection was the association of animal foodstuffs with hides, skins, wool, horsehair, mohair, rags, and other like materials prior to importation, the Board had considered the efficacy and desirability of insisting upon such articles being effectively sterilised at the port of their shipment by some process which would cause no injury to the material or fabric; whether the Board's scientific advisers had in this connexion considered the efficacy of the process advocated by Mr. Alfred Seymour-Jones, of Wrexham, of treating such materials with formic acid and mercuric chloride, and the recent report on the subject submitted by Dr. Constant W. Ponder to the Leather-sellers Company of London; and, if so, with what result.—Sir E. STRACHEY answered: The reply to the first and second parts of the question is in the affirmative. The Board do not consider that the investigations made with regard to the process are sufficiently complete to justify the Board in advocating its adoption, but the matter will be kept in view.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Operative Midwifery. A Guide to the Difficulties and Complications of Midwifery Practice. By J. M. Munro Kerr, M.D., C.M. Glasg., Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow. Second edition. Price 21*s.* net.

Manual of Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Toxicology, and Medical Jurisprudence in Cornell University. Reprinted from Witthaus' and Becker's Medical Jurisprudence, Forensic Medicine, and Toxicology. Second edition. Price 30*s.* net.

The Errors of Accommodation and Refraction of the Eye and their Treatment. A Handbook for Students. By Ernest Clarke, F.R.C.S. Eng., M.D., B.S. Lond. Third edition. Price 5*s.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

Diseases of the Nose and Throat, comprising Affections of the Trachea and Œsophagus. A Text-book for Students and Practitioners. By StClair Thomson, M.D., F.R.C.P. Lond., F.R.C.S. Eng. Price 25*s.* net.

CLARENDON PRESS, Oxford.

The King's Evil. By Raymond Crawfurd, M.A., M.D. Oxon., F.R.C.P., Fellow of King's College, London. Price 8*s.* 6*d.* net.

FIFIELD, A. C., 13, Clifford's Inn, London, E.C. ANGUS AND ROBERTSON, LIMITED, Sydney, Australia.

Racial Decay: A Compilation of Evidence from World Sources. By Octavius Charles Beale, a Royal Commissioner of the Commonwealth of Australia, 1907, and of the State of New South Wales, 1903. Price 5*s.* net.

GREEN, WILLIAM, AND SONS, Edinburgh.

Quinquennium of Medicine and Surgery, 1906 to 1910. Edited by J. W. Ballantyne, M.D., F.R.C.P.E. Price 10*s.* 6*d.* net.

KELLY AND WALSH, LIMITED, Singapore, and at Shanghai, Hong-Kong, and Yokohama.

Studies from the Institute for Medical Research, Federated Malay States. No. 12. The Etiology of Beri-beri. By Henry Fraser, M.D. Aberd., Director, Institute for Medical Research, and A. T. Stanton, M.D. Tor., Bacteriologist, Institute for Medical Research. 1911. Price 7*s.*

KING, P. S., AND SON, Orchard House, Westminster, London. THE WORLD'S PEACE FOUNDATION, 29A, Beacon-street, Boston, U.S.A.

Papers on Inter-Racial Problems communicated to the First Universal Races Congress, held at the University of London, July 26th-29th, 1911. Edited, for the Congress Executive, by G. Spiller, Hon. Organiser of the Congress. Price 7*s.* 6*d.* net.

LAURIE, T. WERNER, Clifford's Inn, London.

Off the Main Track. By Stanley Portal Hyatt, Author of "The Diary of a Soldier of Fortune." Price 12*s.* 6*d.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Sociology applied to Practical Politics. By John Beattie Crozier, Hon. LL.D. Price 9*s.* net.

Thoughts of a Catholic Anatomist. By Thomas Dwight, M.D., LL.D., Parkman Professor of Anatomy at Harvard. Price 3*s.* 6*d.* net.

LOVELL, JOHN, AND SON, LIMITED, Montreal.

Commission of Conservation, Canada. Second Annual Report, including a Report of the Proceedings of the Second Annual Meeting held at Quebec, Jan. 17th-20th, 1911, and of the Dominion Public Health Conference held at Ottawa, Oct. 12th-13th, 1910. Price not stated.

MACMILLAN AND CO., LIMITED, London.

A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Volume IX. Diseases of the Skin. General Index. Price 25*s.* net.

OUSELEY, JOHN, LIMITED, 6, Fleet-lane, Farringdon-street, London, E.C.

A Traveller's Study of Health and Empire. By Francis Fremantle, County Medical Officer of Health; Author of "A Doctor in Khaki." Price 7*s.* 6*d.* net.

REBMAN, LIMITED, London.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by Leighton F. Appleman, M.D. Volume II., June, 1911. Price £2 per annum (four volumes), or single copies, 12*s.* net each.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, Sixty-Sixth Street and Avenue A, New York, U.S.A.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume XII. Price not stated.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

The Technology of Bread-making, including the Chemistry and Analytical and Practical Testing of Wheat, Flour, and other Materials employed in Bread-making and Confectionery. By William Jago, F.I.C., F.C.S., of Lincoln's Inn, Barrister-at-Law, and William C. Jago, Food Manufacturing Chemist. Price 21*s.* net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Die Experimentelle Bakteriologie und die Infektionskrankheiten mit besonderer Berücksichtigung der Immunitätslehre. Ein Lehrbuch für Studierende, Aerzte und Medizinalbeamte. Von Dr. W. Kolle, o. ö. Professor der Hygiene und Bakteriologie an der Universität und Direktor des Institutes zur Erforschung der Infektionskrankheiten in Bern, und Dr. H. Hetsch, Stabsarzt in der Medizinalabteilung des Kriegsministeriums in Berlin. Dritte, erweiterte Auflage. Erster Band. Price of the complete work in 2 volumes, paper, M.30 or K.36; bound, M.34 or K.40.80.

WILLIAMS AND NORGATE, London.

Crime and Insanity. By Charles Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases to Charing Cross Hospital; Visitor to the State Inebriate Reformatory. Price, cloth, 1*s.* net.; leather gilt, 2*s.* 6*d.* net.

Health and Disease. By W. Leslie Mackenzie, M.A., M.D., D.P.H., F.R.C.P. Ed., Medical Member of the Local Government Board for Scotland. Price, cloth, 1*s.* net; leather gilt, 2*s.* 6*d.* net.

WOOD, WILLIAM, AND COMPANY, New York.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., LL.D., Albert H. Buck, M.D., of New York City. Complete in Eight Volumes. Volume VIII. Price per volume $7.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol.

First Aid Charts. By Edward C. B. Ibotson, M.B., B.S. No. 1. Emergencies, Accidents, and Poisoning. No. 2. Fractures, Dislocations, and Sprains. No. 3. Wounds and Hæmorrhage. No. 4. Insensibility or Unconsciousness. Eyeletted and strung for Wall Use. Price 6*d.* each net, or 1*s.* 6*d.* net the set of four.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Some New and Interesting Points in Ships' Hygiene. By W. Melville-Davison, M.B., B.S., Medical Superintendent of the Booth Steamship Company, Limited. Price 4*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BUNBURY, EDWIN GARRETT, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Helston (Cornwall) Board of Guardians.

EATON, OLIVER, L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed Honorary Consulting Surgeon to the Exmouth Cottage Hospital.

HODGSON, JOSEPH WILLOUGHBY, M.D., C.M. Aberd., M.R.C.S., has been appointed Honorary Radiographer to the Exmouth Cottage Hospital.

MACDONALD, R. N., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tobermory District of the county of Argyll.

MACNALTY, A. S., M.D., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Registrar to the London Hospital.

MARTYN, REGINALD, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Exmouth Cottage Hospital.

MOORE, REGINALD MARK, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health of Malmesbury (Wilts) and District Medical Officer by the Malmesbury Board of Guardians.

NEWSHOLME, H. P., M.B. Oxon., D.P.H., M.R.C.P. Lond., has been appointed Resident Medical Officer at the Brighton Borough Fever Hospital.

TATTERSALL, N., M.B., B.S. Manch., M.B., Ch.B. Lond., has been appointed House Physician at the Brompton Hospital for Consumption.

THORNTON, GEORGE LESTOCK, M.R.C.P. Lond., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Exmouth Cottage Hospital.

VIBERT, B. P., M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bradford, West, District of the county of Yorks, West Riding.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 and fees, with board, residence, and laundry.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BETHLEM HOSPITAL.—Locum Tenens as House Physician. Salary at rate of 4 guineas a week, with apartments, board, and washing.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board and residence.

ISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £60, with board, residence, &c.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, both unmarried. Salary in each case £90 per annum, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHELTENHAM EYE, EAR, AND THROAT FREE HOSPITAL.—Assistant Surgeon. Salary £200 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for six or four months. Salary at rate of £50 per annum, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon and House Physician. Salary in each case £80 per annum, with board, residence, and washing.

CROSSLEY SANATORIUM, Delamere Forest, Cheshire.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

CROYDON GENERAL HOSPITAL.—Senior and Junior House Surgeons. Salaries £105 and £60 respectively, with board, laundry, and residence.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

GLASGOW WESTERN INFIRMARY NEW CLINICAL LABORATORY.—Lecturer on Clinical Methods. Salary £400 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HALIFAX, ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

LONDON COUNTY COUNCIL.—Medical Officer of Health of the County of London. Salary £1250 a year and travelling expenses.

LONDON HOSPITAL DENTAL SCHOOL.—Two Demonstrators, House Surgeon, and Instructor in Dental Mechanics.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Surgeon. Also Assistant Surgeon.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with apartments, board, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

ORKNEY, PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £71 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PORTSMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

QUEEN CHARLOTTE'S LYING IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROBBEN ISLAND, LEPER WARDS, Cape of Good Hope.—Junior Medical Officer. Salary £250 per annum, with free quarters and two rations.

ROCHESTER, SAINT BARTHOLOMEW'S HOSPITAL.—House Physician. Salary £110, with board and residence.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £125 per annum.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £60 each per annum, with board, lodging, and washing.

SHEFFIELD, UNIVERSITY OF.—Junior Demonstrator in Pathology. Salary £150 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, laundry, &c.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and washing.

WEST LONDON SCHOOL DISTRICT, Park School, Hanwell.—Medical Officer (non-resident). Salary at rate of £150 per annum.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY.—Senior House Surgeon. Salary £120 per annum, with board, washing, and apartments.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Matlock, in the county of Derby; at Killaloe, in the county of Clare; and at Charlbury, in the county of Oxford.

Births, Marriages, and Deaths.

BIRTHS.

RIX.—On August 3rd, at Dennington Park-road, West Hampstead, the wife of F. W. Rix, M.B., of a son.

ROOKE.—On August 2nd, at Fairfield, North Finchley, N., the wife of W. Stanley Rooke, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

HORNER—FEARON.—On August 4th, at St. Luke's, Redcliffe-square, S.W., Norman Gerald Horner, B.A., M.B., B.C. Cantab., only son of the late Arthur Claypon Horner, M.R.C.S., of Tonbridge, to Grace Malleson, younger daughter of Walter Malleson Fearon, of Newquay, Cornwall.

DEATHS.

GEE.—On August 3rd, suddenly, at Keswick, Samuel Jones Gee, M.D. Lond., F.R.C.P., in his 72nd year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE FRENCH LAW ON THE MANUFACTURE OF SERUMS, TOXINS, ETC.

A DECISION has been given by the Paris Supreme Court which may have an important bearing on the modern developments of medical practice. A law that bears the date of April 25th, 1895, deals with attenuated virus, therapeutic serums, modified toxins that may be used for the prevention or cure of disease, and all organic substances that can be injected and cannot be chemically defined but are used in the treatment of disease. Such products must not be sold unless both from the point of view of their origin and manufacture they have been authorised by the Government, and this authorisation is only to be given after approval received from the Consultative Committee of Public Hygiene and the Academy of Medicine. The penalty for infringing this law is a minimum fine of £2 and from 3 to 12 months' imprisonment.

The question now arises whether this law can be applied against a medical practitioner who invents a serum and gives doses of this serum to his patients. The difficulty is due to the employment of the word *débitées* in the text of the law. We derive our English word debit from this term, and it is generally taken to mean selling; thus a *débit de tabac* is the shop where tobacco is sold, but the term may also apply to the giving of things out without payment. A spring may "*debit*" or give out so many gallons of water per hour. Last year Dr. Lorot was summoned before the Second Correctional Chamber and accused of giving his patients subcutaneous injections of an anti-tuberculous serum he had himself manufactured. The Tribunal concluded that there was no *débit* and acquitted Dr. Lorot. The Public Prosecutor, however, appealed against this decision but the first verdict was confirmed. The case was now carried *en cassation*—that is, before the Supreme Court—and here the two previous verdicts were revoked and Dr. Lorot condemned. In vain it was pleaded that the serum was not sold, that it was not placed at the disposal of the general public. The view was taken that whatever the meaning of the word *débit* might be, the obvious intention of the law was to prevent the injection of serums, toxins, and such substances into the bodies of patients unless their manufacture had been properly controlled by other competent authorities than the manufacturer, even if the latter should prove to be a qualified practitioner.

HOSPITAL OUT-PATIENTS AND THE INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—One point seems to have been overlooked in regard to the expected decrease of out-patients and the consequent lessened cost to the hospitals. It is that the falling off in numbers will be amongst hose costing least, the patients who receive advice and medicine only. Those coming up frequently for the most expensive treatment by electricity and massage, X rays, Finsen light, &c., cannot possibly be taken over at contract price by the general practitioner, who has neither the time nor, as a rule, the installations and apparatus for such work. Minor operations, dental and surgical cases, of which there are a vast number needing the services of an anæsthetist and the expense of an anæsthetic, and the innumerable cases of ulcerated legs and septic fingers—all these will come to the out-patient department as they always have done. We shall lose the chronic and the trivial medical cases, that is all, and the expensive ones will remain. I enclose my card.

I am, Sir, yours faithfully,

August 9th, 1911. MATRON.

Ethelinda.—The book alluded to seems to be complete rubbish. By real inhalation the effects are fully obtained, and concerning these our previous reply holds good.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for August and September, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
August 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th–7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–13th (Berlin).—Third International Conference on Infantile Mortality (*Goultes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–23rd (Paris).—International Conferences of Genetics.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th–30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
September (Genoa).—International Exhibition Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
,, (London).—Bakers' and Confectioners' Exhibition
,, (Manchester).—Second Conference of the British Hospitals Association.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Stricture of the Urethra.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Addison: Clinical.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Throat, Nose, and Ear.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.

TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.

WEDNESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Hutchison: Abdominal Disease.

THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.

FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 12 noon by Steward's Instruments.)

THE LANCET Office, August 9th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 3	30·07	S.	...	119	74	63	62	69	Cloudy
,, 4	30·02	W.	...	129	78	60	61	66	Cloudy
,, 5	29·88	S.	...	117	74	63	64	69	Fine
,, 6	29·95	S.W.	...	120	73	57	61	65	Cloudy
,, 7	30·18	S.W.	...	131	81	55	60	64	Fine
,, 8	30·23	S.	...	130	88	60	63	70	Fine
,, 9	30·06	S.E.	...	123	92	68	69	75	Fine

The following journals, magazines, &c., have been received:—Archives of the Roentgen Ray, La Clinique Ophtalmologique, Journal of Mental Science, Annales de Gynécologie et d'Obstétrique, Edinburgh Medical Journal, Medical Review, Canadian Journal of Surgery, Public Health, Chirurgia, Albany Medical Annals, Pharmaceutical Journal, Clinical Medicine, Monthly Cyclopædia, American Journal of Medical Sciences, Military Surgeon, Royal Army Medical Corps Journal, Revue de Psychiatrie, Journal of the Royal Institute of Public Health, Indian Public Health.

Communications, Letters, &c., have been received from—

A.—Anglo-American Pharmaceutical Co., Croydon; Messrs. C. Ash, Sons, and Co., Lond.; Ardath Tobacco Co., Lond.; Mr. E. Arnold, Lond.; Alliance of Honour, Lond., Joint Secretaries of.

B.—Messrs. Blundell and Rigby, Lond.; Board of Agriculture and Fisheries, Lond., Secretary of; Mr. J. J. Butler, Carnforth; British Fire Prevention Committee, Lond., Assistant Secretary of; Bristol General Hospital, Secretary of; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. C. Birchall, Liverpool; Dr. A. Bernstein, Lond.; Mr. F. S. Bennett, Newcastle-on-Tyne; Brighton, Hove, and Preston Dispensary, Assistant Secretary of; Brighton and Sussex Medico-Chirurgical Society, Brighton; British Dental Association, Lond., Secretary of.

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B.—British Oxygen Co., Lond.; Bury Infirmary, Secretary of; Dr. K. Bremer, Cradock, South Africa; Barbados General Hospital, Bridgetown, Secretary of; B. J. P. J.

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ABSTRACT OF

A Lecture

ON

HOUSING AND TOWN PLANNING.[1]

Delivered at the Medical School of St. George's Hospital

BY F. E. FREMANTLE, M.B. OXON., F.R.C.P. LOND., F.R.C.S. ENG., D.P.H.,
COUNTY MEDICAL OFFICER FOR HERTFORDSHIRE.

GENTLEMEN,—Housing and town planning are taken in this lecture as an embodiment of the outward conditions affecting man's health. They include the whole sanitary circumstances of the home life, as apart from the physiological circumstances—food and drink, exercise and rest—and as apart from the circumstances of the non-domestic working life in workshop and school. They afford, therefore, a good illustration of sanitation in the narrower sense, especially as affecting the women and younger children.

Of the facts of overcrowding there is exact information through the censuses taken in 1891 and 1901. Over two and a half million persons, or 8·2 per cent. of the population of England and Wales, were in 1901 living more than two to a room, 9 per cent. in urban and 6 per cent. in rural districts. This figure varies in different districts from almost zero to nearly 35 per cent., some purely industrial towns, like Leicester and Northampton, having barely 1 per cent. overcrowded, London 16 per cent., and six towns, all old seaports, over 20 per cent., Gateshead heading the list with 34·5 per cent. In the counties the coal-mining districts of Northumberland and Durham are the worst, Tynemouth district having 38 per cent. overcrowded. But the diminution in these figures since 1891 is substantial, London having improved from 20 to 16 per cent., and the whole country from 11·2 to 8·2 per cent., owing to travelling facilities, to building enterprise, to administrative action against overcrowding, and, not least, to the declining birth-rate.

EFFECTS OF BAD HOUSING.

Housing may be defective either in amount or in quality; but in either respect the co-existence of defective housing and ill-health is obvious. Let us, then, compare the death-rates, first with the density of population on area (Tables I., II., and III.), then with figures showing crowding in rooms (Table IV.), and thirdly, with prevalence of one particular defect—namely, back-to-back houses.

TABLE I.—*Density of Population and Mortality in Countries.*

Countries.	Inhabitants per square kilometre.	Crude death-rates, 1886.
Norway	6	16·1
France	72	22·5
Germany	86	26·2
Italy	105	28·3
England and Wales ...	182	19·5

With the exception of England density varies with death-rate.

Table II., again, shows, with only two unimportant exceptions, how density varies with the death-rate. The contrast is still more clearly marked and more pertinent as between different districts of the same town.

The comparison becomes more precise when we consider the death-rates in respect of overcrowding in rooms. This is defined as the occupation of a tenement by a number exceeding two to a room. Let us compare three London districts, representing respectively wealth, slums, and suburbs, with two big industrial cities, and with my own healthy county of Herts.

[1] We published a fortnight ago one of Mr. Fremantle's Edward Jenner Lectures at St. George's Hospital. This lecture is an abstract of one of the same course.

TABLE II.—*Density of Population and Mortality in Districts, England and Wales, 1891–1900.*

(From the Supplement to the Sixty-fifth Report of the Registrar-General, 1891–1900, p. lxix.)

Districts having corrected death-rates per 1000 of—	Density (persons to a square mile).	Districts having corrected death-rates per 1000 of—	Density (persons to a square mile).
11–12	136	19–20	1,705
12–13	161	20–21	2,339
13–14	181	21–22	4,424
14–15	261	22–23	4,884
15–16	407	23–24	4,194
16–17	457	24–25	2,925
17–18	737	25–30	7,480
18–19	1303	30–35	55,563

Mean density of above districts, 525 persons to a square mile.

TABLE III.—*Crowding and Mortality 1891–1900.*

—	Corrected death-rate.	Infant mortality.	Percentage of tenements with less than five rooms.	Percentage of these with over two persons to a room.
England and Wales	18·2	153	47	12
London	20·1	160	66	19
Lewisham	14·8	134	30	6
Westminster ...	17·0	144	70	20
Whitechapel ...	33·1	172	85	48
Manchester	28·3	211	70	10
Liverpool	35·4	223	68	2
Herts	14·1	110	36	5

To show the unhealthiness of defective housing a striking contrast in death-rates has been made out with regard to houses built back to back, in which, therefore, light and air are only admitted on one side of every house and there can be no through-ventilation, as compared with through-ventilated houses.

TABLE IV.—*Defective Housing and Mortality,*

Comparable observations by—I., Dr. Tatham; II., Mr. Herbert Jones.		Population.	Mortality per 1000 population. All causes.	Lung diseases, excluding phthisis.	Phthisis.	Principal zymotic diseases.	Diarrhœa only.
I., Salford	No back-to-back houses	8,713	27·5	6·6	2·8	4·5	1·4
	56 per cent. back-to-back houses	11,406	30·5	7·9	3·6	6·2	2·1
II., Saltaire, Through houses ...		4,218	15·6	3·6	2·7	1·1	0·2
Shipley	Back-to-back in 75 ft. streets ...	2,200	18·1	4·9	2·8	1·3	0·2
	Back-to-back in 40 ft. streets ...	710	28·1	7·4	4·6	2·9	0·8

Back-to-back houses, then, show a higher death-rate than through-houses, but this difference is materially reduced in broad streets.

As a last example of these statistics we may note those cited to show the healthiness of the Letchworth Garden City, which in 1909 showed a death-rate of 5·2 per 1000, as compared with 14·0 for London and higher figures for well-known sea resorts; an infant mortality of 32 as compared with 96 for Brighton and 108 for London.

I trust, however, that my first two lectures to you, gentlemen, on vital statistics may have kindled your fiery criticism on these figures. They are commonly quoted, even by medical officers of health and widely by housing reformers, as showing the dire effect of evil housing on health. When

the King visits Hampstead Garden Suburb he is supplied with facts of this sort and is duly reported to have been deeply impressed.

But it is obvious that those live cheapest who live most crowded; they will surely include the least careful and least healthy, the dirtiest, most ignorant, and most criminal of their class, amongst whom the death-rate is bound to rule high. New dwellings, on the other hand, and garden cities would naturally house a more select population. The figures quoted above show a broad connexion between density of population and cheap housing on the one side and mortality on the other. Overcrowding, whether on area or in rooms, back-to-back houses, age, decay, and insanitary conditions, are all factors in cheapness of which poverty is quick to avail itself.

One of the best articles hitherto written on the subject of housing, that by Dr. Shadwell in the new "Encyclopædia Britannica," emphasises the fact that—

> The poorest people live under the worst housing conditions because they are the cheapest; the economic factor governs the situation. Poverty again is associated with bad habits, with dirt, waste, idleness, and vice, both as cause and as effect. These factors cannot be separated in real life; they act and react upon each other in such a way that it is impossible to disentangle their respective shares in producing physical and moral evils. To lay all responsibility upon the structural environment is an error constantly exposed by experience.

REQUIREMENTS FOR ADEQUATE HOUSING.

A good house should be light and airy, warm, dry, and sound; for general purposes it should contain three bedrooms; and the arrangements for artificial lighting, heating, washing, and cooking, for the disposal of sewage, slops, and refuse, and for the water-supply should be both sufficient and convenient. Let us consider these factors in turn, recognising as the British standard for all new houses the model by-laws respectively for urban and rural districts.

1. *Surroundings—Site, aspect, soil, yard.*—The site should be above the general level of the district for the sake of dryness; it may with comfort be protected from the easterly winds, but it should be open to two, and preferably three, sides of the compass; it should be clear of rising ground or of trees around it; it should be as sunny as possible. The aspect for preference should be to the south-west, but streets are best built north and south so as to get sun on both sides during the day. The soil is best porous and should in any case not be of organic rubbish. The yard at the back of a small town house must be at least 150 square feet in area, and as it is liable to be a source of trouble it should be paved and drained.

As to the space required around a house, the ideal no doubt is total solitude; the minimum should be free space fore and aft, each equal to the height of the house. This gives a "building angle" of 45° from the building line on the opposite side of the street to the top of the house. In London, however, the by-laws allow buildings to be half as high again as the length of space in rear.

2. *Structure.*—Walls and roof must be sound and impervious to rain, either in themselves or—since both tile and brick will hold their own weight of water—by stucco or rough-cast outside, by plaster and ceiling in. A damp-course—e.g., of slate—must be inserted in the walls all round the house above ground level to prevent damp rising from the ground; and for the same reason the basement must be concreted, or, if there be no basement, as, for instances, in villages, there must be through ventilation under the floor. In this way the modern house is perfectly dry even when built on damp ground. A century ago snipe were shot in the marshy ground now occupied by Belgrave-square.

3. *Rooms.*—In height the object is to allow the expired air to rise, instead of persons being compelled to inhale each other's breath; rooms therefore should be 8 or 9 feet high. Over 13 feet of height is of little value. The smaller rooms should be large enough to take a full-sized bed with as much space beside; window area should be at least one-tenth of floor area and every room should have a window to open, a door to shut, and a fireplace.

4. *Sanitation.*—Every house should have a separate closet, with a window to open to the outside and a door to close, so constructed as to remain clean and dry. In towns it should be a water-closet in every case; in villages it should be a pail-closet with dry earth or ashes handy. Both in town and country water should be laid on in the house and a sink and a bath provided, properly drained either to a sewer or cess pool, which must not be within 30 ft. of the house. For removal of refuse the only proper arrangement is a metal ash-bin.

NEW METHODS OF CONSTRUCTION.

One of the greatest changes in the history of housing is due to the still recent discovery of cheaper methods of construction.

Steel-concrete.—This combined material is now commonly known as steel-concrete, ferro-concrete, or reinforced concrete, and is extensively used for buildings of every kind where its appearance is not a bar to its use. In the Hennebique system, on which the new Post Office in Newgate-street is built, the steel rods are round; in other systems they are flat; but the commonest system involves the use of "expanded" steel, in which a steel plate is cut along intermittent parallel lines into a series of strips connected at regular intervals; when this plate is forcibly stretched it becomes a network which, when embedded in concrete, strengthens it materially. Edison has recently urged the standardisation of workmen's houses made in this material, so that they might be turned out in slabs from common moulds, each wall being moulded as a single piece and the pieces fixed together on the site.

Hollow walls, again, are used on the principle that the air-space contained is a source of warmth and dryness and that the supporting strength can always be obtained by steel or by solid building at the angles. The walls may be of hollow brick, or, as in the Frazzi method, hollow slabs of terra-cotta four inches thick, in which the terra-cotta is a mere half-inch shell with half-inch partitions between the parallel hollow spaces.

These various methods of construction demand reconsideration of the function of house-walls. Walls are no longer required to support the floors and roof above. Support is given by a separate steel skeleton, which in buildings of this style is the first part to be erected and then is gradually clothed, often from above downwards, by means of a crane reaching above the roof line.

These curtain-walls then, as they are technically called, are only required to keep the contents warm and dry and to afford privacy. This might well be done by walls of mere glass, doubled for sake of warmth, draped for sake of privacy and internal appearance. Opaque walls cut out sunshine; and the sun is good both for health and spirits. On this principle larger windows are now provided and should be further encouraged.

Steel concrete has again affected the science of construction with regard to the public health by enabling buildings to be erected of immense height—40 storeys, for instance, in New York, where the streets are still comparatively narrow; where light and air, therefore, in the lower floors are seriously defective. The London "building angle" prevents the erection of such buildings here, for if 300 ft. high they would necessitate a street 300 ft. wide, and this would be neither economical nor convenient. Nevertheless, the general tendency of these new methods of construction is to promote higher buildings and broader roads; while in districts where brick and labour are dear and steel concrete is cheap such methods may cheapen the cost of the workman's cottage.

RURAL HOUSING.

It is in the village and small towns rather than in the great cities that the threads of this, as of most social and sanitary problems, may be unravelled and traced to their source. In the villages overcrowding, if not so acute, is almost as common, and defective housing of all sorts is far commoner, more variable, and more extreme than in the cities. Less is heard of it because the country is less under the eyes of the press, and the simple villager has not yet made his voice heard in the turmoil raised by the city slums. It is indeed of less importance, as the villager commonly spends his day in fresh air and healthy living. But its effects and its causes are the same everywhere.

Here a careful study shows that the oldest, dirtiest, and most dilapidated houses in poor districts and in villages will always be inhabited. It is only as these are closed that successive strata of society are compelled by the law of supply and demand in each stratum in turn to move higher in the housing scale. It is only in order to accelerate, not to supplant, this movement that the landowner or the local authority should be asked to provide new houses; and if tenants can be found for them, it matters little whether the actual working classes are directly or only indirectly

benefited, so long as the worst houses are closed. Best of all is the provision of new houses by the workmen themselves on co-partnership lines, as is now being extensively affected by the "Coöperative Tenants, Limited."

REMEDIAL POWERS.

It is often forgotten that the chief housing powers are those of the great Public Health Act of 1875 and the corresponding Act for London of 1891, by which the local sanitary authority is empowered, not only by by-laws to supervise new buildings erected, but to inspect and order the abatement of unhealthy conditions, including overcrowding, and if necessary to declare houses unfit for habitation and close them by order.

The Housing Act of 1890 gives powers of demolition and rebuilding. By Part I. it allows whole areas, which are reported insanitary, to be demolished under an improvement scheme. By Part II. single houses or small groups can be closed on the report of the medical officer of health either as insanitary or as obstructive, including back-to-back houses, and, failing repair by the owners, can be demolished. By Part III. local authorities may build houses to supply needs shown, acquiring land by compulsory purchase and raising loans for the purpose. The exercise of these powers is subject to the sanction of the Local Government Board, which sends down inspectors to hold local inquiries into each case. Compensation has to be made to private owners for property thus affected, demolished, or acquired.

Under this and subsequent amending Acts a great amount of work has been carried out in the cities. As regards Part I., in the 15 years 1891–1905, 28 provincial towns raised loans for improvement schemes amounting to £2,300,000; Leeds spent half a million in clearing 75 acres; and London up to 1908 had cleared 104 acres and displaced 48,500 persons at a gross cost of nearly three and a half millions, at a net cost of nearly two and a half millions. So much for improvement schemes. There will not be much need for them in future, the worst slums being now abolished.

But it is under Part II. of this 1890 Act, apart from action under the 1875 and under local Acts, that the most useful work will continue to be done. In the six years 1899–1904 400 local authorities outside London received representations against over 33,000 houses, caused over 17,000 to be made fit for habitation, closed 4220, and demolished 748.

Municipal building, however, under Part III. of the Act, especially in the great cities, has attracted more attention. It is well to note that whereas London and 130 boroughs and districts had to the end of 1906 built some 20,000 dwellings, the private enterprise of the Peabody, Rowton, Guinness, and other large trusts had in London alone housed 150,000 persons.

TOWN PLANNING.

Lastly, by the Housing, Town-Planning, &c., Act, 1909, the law has taken note of the principle, new to housing reformers but as old as time, that not only the individual structure, but the relationship of the houses to each other, is of importance, alike to amenity, convenience, and health. Rome and Athens, Paris and Washington, aye, and even in their utilitarian way the gridiron-patterned American cities of mushroom growth, are conspicuous instances of town-planning. Their plan, however, has been mainly designed with a view to amenity, or rather grandeur; barely, if at all, to convenience, except in the mind; certainly not to public health. The boulevards of continental cities hide the most squalid, dark, and unhealthy conditions behind their palatial frontages; health, convenience, and real amenity are sacrificed to architectural effect.

While the first part of the new Act makes inspection and consideration of housing conditions the definite and constant duty of every local authority and its medical officer of health, and strengthens their hands, the second part of the Act gives power to the local authority to supervise the laying-out of land under development. One or more authorities may either themselves prepare a town-planning scheme or may adopt a scheme prepared by one or more landowners. Both a *primâ facie* case and the completed scheme have to be sanctioned by the Local Government Board; every facility is given for objections, and provision is made both for worsement and betterment of the property.

What is the practical effect of town-planning? 1. Roads are laid out from the first with a view to their probable use—wide enough and not too wide—gravel paths being in some cases sufficient for the immediate approach to cottages, 8 ft. roads in others. 2. Grass borders, paths, or gardens are left alongside the road with a view to possible widenings. 3. Convenient cross connexions are ensured. 4. The number of houses to the acre is limited. 5. The space and light round each house are controlled. 6. The municipal and State services—water, sewage, scavenging, gas, electricity, tramways, posts, telephones, and telegraphs—can be provided for in advance. 7. Open spaces and parks can be provided where required, and not otherwise.

Town-planning is as essential to local government as by-laws for new buildings; and schemes, great or small, should be adopted for the outskirts of every town or village not actually at a standstill in development.

GARDEN CITIES.

The enthusiasm in this country for town-planning is due to a shilling book entitled "Garden Cities of To-morrow," written by Mr. Ebenezer Howard in 1898. Town-planning was an essential part, but part only of his scheme. He proposed to check the constant growth of towns and of slums by a counter-stroke. At present it is the residents alone that try to leave the towns, to establish their houses as far out into the country as possible, returning by rail every day to the town for their work.

This centralisation of industry, Howard contended, is no longer necessary. It is cheaper for the industry itself, directly and indirectly, to be in the country, where rates are low, land for expansion cheap, conditions of life healthy; where steam and electricity establish sufficient communication with the offices and exchanges in town; where industrial life becomes healthier and more simple, while agriculture gains a market for its produce. The future remedy for the urbanisation of our race rests, as Mr. Justice Neville has said, not in garden suburbs, but in garden cities and villages. Bournville, Port Sunlight, Letchworth—go and see them when you can, and you will see visions of the future Utopia, in which the most urgent social problems, housing foremost, have been solved, the public health set on a firm basis, and the foundations of a healthy nation assured.

SUMMARY.

1. The housing problem consists of defects both in quantity and quality of accommodation in relation to a changing standard of requirement.
2. English conditions are considerably better than those in Scotland and Ireland or in foreign countries.
3. There is marked improvement during the past 20 years.
4. The poor will always live in the cheapest houses, and the oldest and poorest are essentially the cheapest.
5. Wholesale removal of slums has been done much in the past and leaves little to be done in the future.
6. Closure and demolition of single houses are means much used and of prime importance.
7. New buildings for inhabitation by the labouring classes involve unnecessary waste of money, but may occasionally be necessary; they will then involve a charge on the rates.
8. Town-planning and the decentralisation of industry in garden cities and villages offer a hopeful solution of the problem of congestion.
9. Better administration, not legislation, is required.
10. The main faults in the people's houses depend on their habits, characters, and intelligence. Practical education is the most important factor in improvement.

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THE HEREDITARY TENDENCY TOWARD TWIN-BEARING, AND THE INFLUENCES AIDING IN THE DETERMINATION OF SEX.

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ROUGHLY speaking, 24 patients out of every 2500 that I see have once or oftener given birth to twins—a proportion, that is, of about 1 in 104; and regarding the existence of an hereditary tendency towards twin-bearing there can be no doubt. The following is a fairly representative 24 group. It speaks for itself, as in three only of these cases was there no history of twins either on the female or the male side, and in one or more of those it is quite possible that the default may have been due to ignorance.

1. Aged 44 years. Married twice. Has had five children; twins once (boy and girl). All the children are by the first husband. Conception has never taken place through the second husband. History: Mother of patient had twins; wife of mother's brother had twins twice; daughter of mother's sister had twins twice; two cousins of patient (father's side) had each had twins.
2. Aged 29 years. Married twice. Has had four children; twins once (two girls). All these children are by the first husband. She has not as yet been impregnated by the second husband, but she has only lived one year in wedlock with him. History: Two sisters of patient had twins; mother of patient had 13 children, all single births.
3. Aged 44 years. Has had six children; twins once (two girls); the other four children are boys. History: None of twins.
4. Aged 23 years. Twins once (two girls). History: Sister of patient's mother had twins.
5. Aged 28 years. Has had four children; twins once (two girls). History: Mother of patient had twin girls once, but patient is not one of these.
6. Aged 32 years. Has had four children; twins twice (two girls, and boy and girl). History: Wife of brother of father of patient had twins.
7. Aged 40 years. Has had 12 children; twins once (two girls). History: Sister of patient had twins twice; wife of brother of father of patient had triplets.
8. Aged 37 years. Has had five children; twins once (boy and girl). History: Sister of mother of patient had twins.
9. Aged 50 years. Has had eight children; twins once (two girls). History: Sister of patient had twins; mother of father of patient had twins (boy and girl), and the father of patient was one of these.
10. Aged 32 years. Has had three children; twins once (two boys). History: Mother of husband of patient had twins twice, but the husband is not one of these.
11. Aged 41 years. Has had eight children; twins once (boy and girl). History: Sister of patient had twins; wife of brother of husband had twins.
12. Aged 37 years. Has had eight children; twins once (boy and girl). History: Sister of mother of husband had twins.
13. Aged 24 years. Has had four children; twins twice (two girls and boy and girl). History: Mother of patient had twins; mother of mother of patient had twins; mother of father of patient had twins.
14. Aged 33 years. Has had three children; twins once (boy and girl). History: Mother of patient had twins twice; sister of mother of patient had twins twice; sister of mother of mother of patient had twins once.
15. Aged 26 years. Has had two children; twins (boy and girl). History: Sister of patient had twins.
16. Aged 46 years. Has had two children; twins (boy and girl). History: Husband of patient is a twin with a girl; sister of patient had twins.
17. Aged 55 years. Had had two children; twins (two girls). History: Mother of husband had twins, but husband is not one of these.
18. Aged 34 years. Has had six children; twins once (two girls). History: Mother of husband had twins, but husband is not one of these.
19. Aged 27 years. Has had three children; twins once (two boys). History: Sister of husband had twins.
20. Aged 44 years. Has had 17 children; twins three times (boy and girl twice and two girls). History: None of twins.
21. Aged 36 years. Has had five children; twins once (two boys). History: None of twins.
22. Aged 35 years. Has had three children; twins once (boy and girl). History: Mother of husband had twins, but husband is not one of these.
23. Aged 42 years. Has had four children; twins once (two girls). History: Mother of husband had twins, but husband is not one of these.
24. Aged 26 years. Had had two children, twins (boy and girl). History: Mother of patient had twins, but patient is not one of these; mother of mother of patient had twins, but mother of patient is not one of these.

In this group it will be observed there are 28 sets of twins, as one patient had borne twins three times and two others had each had twins twice. The twins in 13 instances are boy and girl, in 12 they are two girls, and only in 3 are they two boys. The aforesaid 28 confinements produced altogether 37 females and 19 males, a proportion, that is, of practically 2 females to 1 male; and this, I would remark, is fairly constantly the relationship of female to mal as a result of twin conceptions. This is a not phenomenon, since in all European countries, whe legitimate and illegitimate births be computed sepa together, the total annual number of male birth exceeds that of females, and this has been a constar tion year after year in northern and southern countr In our own case, in England and Wales the total female births during the year 1907 were respectively and 450,314, or proportionally 103 or 104 males to e females. The percentage of males in excess of fe now rather lower than it was years ago. If we t total illegitimate births in England and Wales dur year 1908 we note a similar condition of affairs, for th and female births under such circumstances were respe 19,025 and 18,506, or roughly 3 per cent. more male females. In countries, however, where polygamy pr this relationship of male to female births is reversed, f are assured that polygamy produces about two female b to every one male. This relationship, it will be obser corresponds closely with that noted as a result of t conceptions.

In the case of the human race and the higher anir kingdom we are nevertheless driven to the conclusion th there must be some force or forces at work which tend balance the relationship of male to female births. For mo than 2000 years philosophers and physicians alike hav diligently endeavoured to seek out and elucidate these forces but so far their efforts have been attended with practically no success, and I am confident that this has been a blessing and not a misfortune, for it is more than probable that if we should ever succeed in disclosing the secret of this stable equilibrium of the sexes the utilisation of the knowledge would be fraught with evil rather than good to humanity, and might even lead eventually to the extermination of the human race. In a few cases where, for example, a crown was at stake a fabulous price and great sacrifice might be paid and made to ensure that the result of a given conception should be a male progeny, but the indiscriminate use of any such power would undoubtedly be a curse rather than a blessing, and would not, as some are disposed to believe, conduce to domestic happiness.

We, as the philosophers and physicians of old were, are familiar with the fact that in the case of the majority of animals, eggs do not develop unless spermatozoa enter them, and our knowledge on this matter is more precise than theirs was, inasmuch as we know that one spermatozoon only suffices, and is, in fact, necessary for the fertilisation of an egg. At one time it was believed that the sex of the offspring depended upon the number of spermatozoa which penetrated the egg, being male if many entered and female if a less number were included in the egg. It is now, however, conceded that polyspermy leads invariably to the production of monsters, and that natural fertilisation is always effected by one spermatozoon only.

Quite recently Herbst, Driesch, Loeb, and others have shown that it is possible to fertilise the eggs of some of the lower animals by physico-chemical agencies alone, and these scientists have even produced living larvæ by the action of chemical substances alone—without the intervention of spermatozoa at all—on the unfertilised eggs of sea-urchins, star-fishes, and a number of annelids and molluscs. In consequence of the startling results obtained by chemical fertilisations, by artificial parthenogenesis, fresh interest has been aroused in the question of the determinants of sex and in the transmission of the hereditary tendency to beget twins.

In the case of man we recognise two different types of twins—twins which are so unlike each other that it is difficult indeed to believe that they could possibly have been begotten at the same time, and these twins may or may not be of the same sex; but there is the other type in which the twins resemble each other closely, and these invariably are of the same sex. We are induced to believe that the latter result from the splitting into two of one egg through the influence of one spermatozoon, but it is difficult to understand why twins thus produced are not identical both physically and mentally.

Twins are begotten by the same seminal emission but they may be produced in consequence of the splitting of one ovum after fertilisation into practically two ova, or they may result merely because two ova are extruded from one Graafian

cle, or again because of the simultaneous rupture of two Graafian vesicles and the consequent extrusion of two ova for fertilisation. Now the hereditary tendency to the production of twins is in my opinion transmitted about equally by males and females, and as the phenomena of fertility must be connected with a substance possessing a definite chemical and molecular constitution it is highly probable that the majority of twins are produced from one ovum and one spermatozoon. A woman who has a tendency to bear twins may give birth to twins of the same sex at one time and to twins of a different sex at another time, but never joined twins are never of the opposite sex. When twins are produced from one egg the first two cells into which the segments after fertilisation become separated from each other, and independently of each other they thereafter proceed to segment and develop.

In the case of the sea-urchin's egg this separation of the first two segments has been brought about by a change in the chemical constitution of the sea-water in which the eggs are hatched. Herbst, for instance, observed that if the fertilised eggs of the sea-urchin were put into sea-water which had been deprived of its calcium the cells into which the egg segmented had a tendency to segregate and fall apart. Driesch further remarked that sea-urchin eggs after fertilisation if specially treated with sea-water freed from lime had a tendency to produce twins, and Loeb noticed that the tendency to produce twins could be caused not only by an absence of lime but by an absence of either potassium or sodium from the sea-water. Generalising from certain experiments Loeb goes so far as to say, "If the liquids which surround the human egg a short time before and after the first cell division are slightly acid and at the same time lacking in one or more of the three important metals, calcium, sodium, and potassium, then the conditions for the separation of the first two cells and the formation of identical twins are provided."

If we accept this tenet then we are forced to conclude that there is in the human race practically no hereditary tendency to the production of twins. Judging, however, from my own clinical facts and experience I am convinced that the production of twins in the human female is not a chance affair, and has nothing to do with the deficiency of lime or potash or soda salts in the blood or generative tissues of the mother, for it is well known that deficiency of these salts so alters the sensitivity and irritability of the Fallopian tubes and uterus that well-marked symptoms make their appearance therefrom and abortion is apt to ensue. If, therefore, twin productions were in any way associated with deficiency in the amount of calcium, or potassium, or sodium in the maternal blood, twin productions would more commonly result in abortions than they do.

In dealing with the question of the causation of sex we must at the outset recognise the fact that not only in the case of individual women but in the case also of individual female animals we find a proneness to the production of one sex of progeny rather than the other; in one case the proneness may be especially female, whilst in another it is especially male. Of all the forces, however, which it is believed play an important rôle in the determination of sex the influence of food is that which has been and still apparently is most accredited, but in this case, as in that of the question of the production of twins, the evidence adduced has been derived chiefly, if not entirely, from experiments upon lower animals and especially upon insects. The bee is a favourite instance, as it is alleged that the fertile female or queen bee is a product dependent entirely upon the pabulum supplied. Again, in the case of tadpoles it has been remarked that by offering a highly nutritious food to these aquatic animals more females than males are produced.

Experimental evidence of this character has led some authorities to affirm that the primordial germinal cells are sexually indifferent that they are neither fixedly male nor female, but that evolution of sex depends upon extrinsic conditions, and that food-supply is the most important of these conditions. Nutrition, of course, involving as it does chemical changes, exercises a powerful influence upon all organic phenomena, but so, too, does temperature, and in the case of many insects it is impossible to say whether the evolutional changes taking place may not be dominated as much by the influence of temperature as the influence of pabulum. Under equal temperature conditions, experiment nevertheless appears to favour the view that well-fed females tend to produce a preponderance of female offspring and badly fed females a preponderance of male progeny.

On this nutritive dogma some authorities have even gone so far as to affirm that in the case of the human female if fertilisation occurs immediately after menstruation the product is likely to be a male, whereas if fertilisation occurs immediately before an expected menstrual period the product is likely to be a female, for, say they, menstruation is a katabolic or destructive process, and the ovum fertilised immediately after menstruation is in the early days less liberally fed than an oosperm which becomes harboured in the uterus before an expected menstrual period. No one, however, who has devoted any attention to the diagnosis of early pregnancy can for one moment believe that the relationship of the time of fertilisation to that of menstruation has anything to do with the determination of the sex of the progeny.

Under ordinary circumstances menstruation is always suspended in consequence of the occurrence of pregnancy, and we are accustomed to reckon the stage of any pregnancy as well as the duration of gestation from the date of the cessation of the last menstruation. To all intents and purposes it is possible to diagnosticate the existence of uterine pregnancy in every case 14 days after the date of the first suspended menstrual period, but the uterus containing an ovum impregnated only 18 or 19 days before a physical examination is made is not likely to be as big as a uterus containing an ovum impregnated 39 or more days prior to our examination, consequently as early as 14 days after the date of the first suspended menstruation the clinician from the size of the uterus should be able to say whether the product of conception is destined to be male or female. No one has yet been able thus to predict the sex *in utero*, nor is anyone ever likely to be able to do so, for it is very evident that the relationship of the time of fertilisation to that of menstruation has nothing to do with the causation of sex. Moreover, as we reckon the duration of gestation from the date of cessation of the last menstruation if the time of fertilisation had anything to do with the determination of sex, an ovum impregnated 14 or more days later than another ovum would be harboured 14 or more days longer, and the duration of gestation in the case of a female child would invariably be greater than in the case of a male, and of this we have no evidence.

If we investigate some of the other theories these too are found to be as erroneous as that which we have just discussed. Take, for example, the question of the part played by the right or the left ovary. At one time it was believed that the spermatozoa of the left testicle had an affinity only for ova from the left ovary and spermatozoa of the right testicle for ova from the corresponding ovary and that the sex of the progeny depended upon the ovary from which came the ovum which was fertilised. Everyone with extensive gynæcological experience, however, has remarked that women with one ovary are just as likely to give birth to male and female children as women who are in possession of both ovaries. To the part played by polyspermy we have already referred.

The question of the causation of sex is, in fact, to us as great a mystery as it has ever been.

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THE DISCRIMINATION OF COLOUR.[1]

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.,
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IN a paper on the relation of light perception to colour perception,[2] and in previous writings,[3] I have stated that if a portion of the spectrum be isolated it will appear monochromatic, the length of the monochromatic region varying with the intensity and wave-length of the light and the colour perception of the observer. Most normal-sighted persons make about 18 such divisions in a bright spectrum.

In a paper in the Proceedings of the Royal Society,[4] Lord

[1] A paper read before the Royal Society on May 18th, 1911.
[2] Proceedings of the Royal Society, B, 1910, vol. lxxxii., p. 458.
[3] Colour Blindness and Colour Perception, International Scientific Series.
[4] December, 1910.

Rayleigh, whilst agreeing that the facts were as I stated in the conditions described by me, expressed the opinion that he could distinguish between the wave-lengths included in a monochromatic division to the extent of discriminating between the colours of the two D lines. Lord Rayleigh kindly lent me the colour box with which he had made the experiments, and, on repeating them in the manner described by him, I arrived at similar results. I hope, however, to be able to show that the results obtained by Lord Rayleigh were due to the admixture of small quantities of white and coloured light and to certain physiological influences which had not been taken into consideration, and which prevented him from arriving at a correct interpretation of the colours.

If a prism, even of the finest polish, be examined with a strong light against a dark background, numerous small particles and irregularities of the surface, which irregularly disperse the light, will be seen. The reflections from the sides of the prisms, lenses, and sides of the box have also to be taken into consideration. The amount of this irregularly dispersed light is small, but is a very important factor taken in conjunction with other facts. It is necessary, therefore, in order to get rid of the greater part of this irregularly dispersed light to allow the light included in a monochromatic region to pass through a second aperture, such as that in my spectrometer. When this is done, I have found it impossible by any method which I have adopted to distinguish between the various waves included in the monochromatic region. I have magnified the image of this region with eye-pieces of different power, making a corresponding increase in the light to make up for the loss of luminosity caused by the magnification. I have also obstructed the central portion of the monochromatic region with a screen, and the remaining portions have still appeared monochromatic. The most conclusive experiment, however, is the examination of the monochromatic region with an achromatic double image prism, the intensity of the source of light being increased as before. By this method two rectangular monochromatic fields are seen, and can be arranged so that they are side by side and just touch. The portion belonging to the red side of the spectrum of one can be made to touch the portion belonging to the violet side of the spectrum of the other. This position is therefore most favourable for the detection of any difference, and yet I cannot detect any, neither can any other observer to whom I have shown the experiment. The experiment can be observed objectively in the following manner: an arc light being used for the illuminating source, a pure spectrum is obtained; a portion of this spectrum, forming a monochromatic region, is allowed to pass through an adjustable slit. Two images of this monochromatic region can be thrown with the aid of a double image prism upon a screen and made of any required size. The varying size of the monochromatic regions with different persons can by this means be demonstrated to a large number.

Another point which I found with Lord Rayleigh's apparatus is the difficulty of obtaining both fields of similar intensity. The slightest movement of the eye also causes an alteration in the number and kind of rays which enter the eye. When two fields are of unequal intensity the physiological effect of contrast is evoked, which causes an erroneous judgment of the colours under observation. In fact, weak orange light may, by contrast with bright red light, appear green. In making experiments on the discrimination of colour, the rays of light from the two regions to be compared should strike the eye at as nearly as possible the same angle; the fixation point of the eye should be in the centre between the two regions, so that one region may not be more influenced by the pigment of the yellow spot, or the blood in the retina, than the other, and that equal amounts of light from each region enter the eye.

The importance of the irregularly dispersed light in association with contrast in dealing with questions of colour has been overlooked by many physicists, as several instruments have been constructed for the investigation of colour and colour-vision which are defective on this ground. It was this irregularly dispersed light, as shown by Helmholtz,[5] which caused the apparent change in the colours of the spectrum observed by Brewster, and which led him to suppose erroneously that there were three kinds of solar light.

[5] Poggendorff's Annalen, 1852, No. 8.

In conclusion, when special means are taken to have as pure a spectrum as possible, I can find no method which will enable me to distinguish the colours in a monochromatic region. I therefore regard the appearance of the monochromatic region as a fundamental physiological fact, as I stated over 20 years ago.

Willesden Green, N.W.

THE PATHOLOGICAL RELATIONSHIP BETWEEN THE APPENDIX CÆCI AND THE UTERINE ADNEXA.

BY J. BIRT, L.R.C.P. EDIN., M.R.C.S. ENG.

(*With a Note on the Operation by* T. CRISP ENGLISH, M.B., B.S. Lond., F.R.C.S. Eng., *Senior Assistant Surgeon to St. George's Hospital, &c.*).

A VERY interesting and instructive address was published in THE LANCET of July 29th by Dr. H. Macnaughton Jones on the Pathological Relationship Between the Appendix Cæci and the Ovary and Tube, with notes on the various theories as to the course of the invasion of the infecting microbe, and in relation to this subject the following case may be of some interest.

The patient who was married, but with no children, had had four previous illnesses suggestive of appendicitis, necessitating each time rest in bed for a week or more (extending over a period of about 15 years, with intervals of about four years between each). Her catamenia had from the very first been attended with pain and some degree of menorrhagia. Chronic ovarian pain had existed on the left side since the age of 17 years. She was curetted seven years ago for menorrhagia, dysmenorrhœa, and intercurrent leucorrhœa, and her periods from that time had been quite regular up to the middle of May of this year, when there was metrorrhagia, the period lasting about 12 instead of, as was usual with her, five or six days. She had had some troublesome pain in the right thigh from the crest of the ilium to the knee for four months.

On June 9th, 1911, I was asked to see her, and found her in bed complaining of pain low down in the right side of the abdomen, which had troubled her very much for some days, and which was greatly aggravated by the act of defæcation. Her expression was slightly careworn, and the colour aspect of her face greyish. There was marked tenderness over an area, the centre of which was halfway between the umbilicus and the right superior iliac spine, and downwards towards the pubes. There was, however, no rigidity of the abdominal muscles, nor had there been any vomiting, and the abdominal movements in breathing were normal. The temperature was 102° F. and the pulse 96. On vaginal examination the uterus was freely moveable and the cervix normal, but a very tender, thick knotty cord was to be felt in Douglas's pouch. Absolute rest in bed was ordered and a fluid diet, together with a hot douche of 110° F. to be used twice daily.

On June 12th the patient woke up in the early morning with excruciating pains in the right lower abdomen. The tenderness over this area had greatly increased, but there was still no muscular rigidity. The temperature was 101·5° F. Frequent hot fomentations were applied and the douching was discontinued. On the next day (the 13th) menstruation started. The temperature and general conditions were not altered, but the pain was considerably better; in fact, it had commenced to be less on the first application of the fomentations.

The various signs and symptoms suggested to me that the appendix or ovary and tube, or all of them together, were affected, and it seemed to me that an exploratory cœliotomy should be done, but that it would be desirable, if possible, to wait till menstruation had ceased and also for the advent of a quiescent condition of these local troubles. I communicated with Mr. T. Crisp English, and it was decided to adopt the above course and the patient was very carefully watched. She practically slightly improved and remained much in this condition from June 14th to the 21st. The pain had gone, but the rather marked tenderness remained, and the temperature varied from day to day between 97·8 and 99·2, with a pulse between 84 and 96. On the 22nd, menstruation having stopped after a duration of nine days,

Mr. Crisp English met me in consultation and examined her thoroughly. He concluded that a cœliotomy should be done and that whatever was found likely to be the cause of the mischief should be removed. It was also decided to wait a few days more before operating, the chief reason being the hope of the inflammatory condition becoming still more quiescent. On June 28th Mr. Crisp English operated.

Note on the Operation.—"The patient was placed in the Trendelenburg position, and an incision 3 inches in length was made through the lower part of the right rectus muscle. The appendix was first examined, and was found to be thickened and adherent; two stercoliths were felt in its distal half. The wound was then enlarged, and a hand was passed into the pelvis. The right tube was distended and greatly thickened; with the ovary it formed a large inflammatory mass firmly adherent to the rectum and posterior wall of the pelvis. The left tube and ovary and the uterus were normal. The right tube and ovary were then removed. The uterine end of the tube was first divided between two ligatures, and during the process of removal an encysted abscess lying between the ovary and the rectum was opened. The walls of this abscess were carefully dissected away. The appendix was subsequently amputated, its proximal end being crushed with the crushing clamp, and the stump being invaginated with a Mayo's appendix tucker, and buried with a purse-string suture of fine silk. A split drainage-tube containing a strand of gauze was then inserted into Douglas's pouch, and the wound was closed with through-and-through sutures of silk-worm gut."

The condition of the patient on the afternoon of the operation was one of rather marked collapse, and there was a good deal of vomiting which lasted four days, but which may have been to an extent of nervous origin, as the patient had very strongly anticipated it. With this exception, however, she made a rapid and uncomplicated recovery, and after the fourth day slept and took her food well. The drainage-tube was removed on the twelfth day, and the only trouble which was at any time in evidence was some constipation, which was, nevertheless, overcome by a daily enema and some senna tea at bedtime.

Remarks.—The history of the case and the pathological condition of the organs affected seemed to point to the appendix being the original source of infection, especially in view of the obvious evidence of recent inflammation in the appendix, and the fact that the left ovary and tube were normal. The organisms may have travelled directly along the appendiculo-ovarian ligament (Clado), which is described in Dr. Macnaughton Jones's address, or by some other more or less direct route. Dr. Macnaughton Jones states at the end of his address how necessary he considers it in an operation of this nature that due regard be paid to its severity and necessary prolongation. In the above case, however, the patient did extremely well, and in 24 days after the operation was sitting up in her room in excellent health and spirits.

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MENINGITIS FOLLOWING MEASLES.

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DURING the first half of this year, when an epidemic of an unusually severe form of measles was prevalent, six children suffering from meningitis were admitted into Addenbrooke's Hospital. In one of the patients the disease was primary pneumococcic. The other five had symptoms of post-basic meningitis. In three of these the cerebral symptoms followed measles, one a week, one six weeks, and one eight weeks after the rash had been seen. In all five the onset of the disease was sudden; most of the patients vomited and rapidly lost consciousness, and retraction of the head and Kernig's sign were well marked. The temperature was usually not above 101° F., and the pulse and respirations were irregular. In three cases improvement followed and seemed to be due to lumbar puncture. One patient recovered completely, and though meningitis was diagnosed it was not proved, as an examination of the cerebro-spinal fluid was sterile and showed no excess of cells. The other four patients died and their brains were examined, and all showed a meningitis alike in appearance. There was a greenish-yellow exudation of lymph into the pia arachnoid membrane at the base of the brain with more fluid than usual in the ventricles. In the cerebro-spinal fluid of one patient (who had not had measles recently) the meningococcus of Weichselbaum was found, and in another diplococci were seen in the exuded lymph at the base of the brain.

On account of the similarity of the clinical course of the disease and of the appearance of the brains after death it is not improbable that the meningococcus was responsible for the meningitis in all the cases. Whether the measles disposed to, or whether it was accidentally followed by, the meningitis is uncertain, but in either case the occurrence of nervous symptoms after measles is interesting on account of its rarity. The following is an account of the cases:—

CASE 1.—Boy, aged 6 years, under Dr. L. Humphry. Admitted on February 27th, 1911; discharged on April 15th.

History.—Eighteen days ago patient was taken ill and was sick. He had a slight rash that was diagnosed as measles. Twelve days ago he seemed sleepy and has been getting worse since. Once or twice he has been unconscious.

Feb. 28th: Lumbar puncture: two drops of fluid came away that were sterile and contained no cells.

Examination.—March 1st: Temperature 100° F., pulse 130, respirations 34. The patient looks healthy. He is irritable. He recognises no one, and when spoken to cries out. The pupils are dilated. Slight retraction of the head is present. Tache cérébrale is feebly marked. There are râles at both bases and also in the right axilla. Kernig's sign is present. The spleen is not palpable. No optic neuritis.

March 2nd: Patient much better. He speaks now and then but not distinctly. When he attempts to catch hold of anything with his right hand he puts it to the left of the object. 3rd: Kernig's sign is still present; patient can talk. The patient is still irritable. (The patient recovered completely. He came to the hospital three weeks after discharge and seemed quite normal as regards intelligence.)

March 7th: A swab from the throat showed the presence of pneumococcus, M catarrhalis, and M. tetragenus.

A brother of the above patient, aged 1 year and 2 months, was admitted on March 1st, 1911, suffering from pneumococcal lobular pneumonia. He had had measles 10–14 days before this.

CASE 2.—A boy, aged 4 years, under Dr. Humphry. Admitted on May 6th, 1911; died on May 28th.

History.—In October, 1910, the patient had scarlet fever. At the end of February, 1911, patient had measles. About three weeks ago he started to lose his appetite. For six days he has been unable to keep any food down. For four days the patient has had headaches and has slept very little and he has screamed. The bowels are constipated. There has been no aural discharge.

Examination.—Temperature 101·2° F., pulse 128, respirations 32. Patient is flushed and drowsy, and now and then he shrieks out. He has a slight cough. The pupils are equal and react to light, no ocular paralysis, no nystagmus. Photophobia is present. Epigastric and abdominal reflexes are present. No optic neuritis. Right knee-jerk is absent and left knee-jerk very slight. Plantar reflex is flexor. No retraction of the head. Kernig's sign present. No aural discharge and tympanic membranes normal. There are a few small glands to be felt in the neck. The liver and spleen are not palpable.

May 7th: The patient slept well last night, but cried out about every ten minutes. 11th: Patient still drowsy. 12th: Patient seems a little better, his right arm is flaccid but not paralysed, and the right corneal reflex is absent. In the evening he had a fit lasting a few minutes. In it he had rapid movements of flexion and extension of the right forearm. Now and then there were a few similar movements of the forearm. 13th: Lumbar puncture; three test-tubefuls of clear fluid under pressure came away. Child more comatose, squint present. Now and then the right pupil is larger than the left. Kernig's sign more marked. Tache cérébrale present. 16th: Lumbar puncture; many cells seen—polymorphonuclear 42 per cent., lymphocytes 58 per cent. No organisms seen, none grown in cultures. 17th: Patient had a fit. 20th: Slight optic neuritis, more marked in the right eye than the left. 27th: Patient worse, much retraction of head. Kernig's sign present in left leg, not in the right. Pupils rather dilated, eyeballs wander together in all directions. Face gets flushed very easily. Child is very wasted. 28th: Death. Temperature before death rose to 106·4°.

Necropsy.—Brain: Convolutions flattened. Pia arachnoid at base of brain thickened and greenish yellow; this condition extends into the Sylvian fissure and superior surface of cerebellum. Ventricles are distended with fluid. Brain substance normal. No sign of tuberculous disease in the body. No growth in cultures from material removed from base of brain.

CASE 3.—Girl, aged 10 years, under Professor J. B. Bradbury. Admitted on May 23rd, 1911; died on June 1st.

History.—Measles six weeks ago. The child recovered except for a headache. May 15th: Patient had pain in the left ear. Last night she had a fit and the fit has not left her and she has been unconscious since the fit started. In the fit the hands were drawn up and the legs extended. For the past few days the child has been sleepy. The bowels have been constipated but diarrhœa set in this morning.

Examination.—Temperature 101·2° F., pulse 136, respirations 24. Child lies unconscious in bed, curled up, and she is flushed. The respiration is irregular. Nasal feeds have to be used. Eyes: Pupils dilated, reacting but little to light, lateral nystagmus and drooping movements of eyelids present. No squint, no optic neuritis. Membrana tympani normal. Jerks of upper extremity, abdomen and knee absent. Plantar reflex is flexor. No retraction of neck. Kernig's sign present. Tache cérébrale is present. Respiratory and circulatory system normal. The liver and spleen are not palpable.

May 23rd: Lumbar puncture—three test-tubefuls of clear fluid removed, a few lymphocytes present, no organisms seen microscopically. No growth on culture. 24th: Nystagmus disappeared. 25th: Child is conscious, she cries out frequently. She says she has no headache. She can feed by the mouth. 26th: Child is conscious and very irritable. Pupils are dilated, and do not react to light, and now and then squint is present. Knee-jerks can just be obtained. Kernig's sign is well marked. 28th: Lumbar puncture — no fluid removed. 30th: Child unconscious again. Some paresis of right arm and leg. Head is

not retracted and Kernig's sign is not so marked. A little twitching in left arm and leg is present. Plantar reflex is extensor on the right side. For two to three days the patient has been drowsy. 31st: Athetosis of left hand started. The arm is abducted and the forearm flexed and the athetotic movements take place on the left side of the head. June 1st: Patient became very cyanosed at 1 P.M. and died at 3 P.M. Just before death lumbar puncture—two test-tubefuls of fluid removed. Very few lymphocytes—much albumin.

Necropsy.—Basal meningitis, exudation of yellowish lymph at base not spreading into Sylvian fissure but spreading a little over upper surface of cerebellum. Brain œdematous, ventricles contained much fluid. Direct examination of lymph showed a diplococcus, but there was no growth in broth. Collapse of lower portion of right lung. The right bronchus was filled with a thick white material. No sign of tuberculous disease anywhere in the body.

CASE 4.—Girl, aged 10 years, under Dr. Humphry. Admitted on June 3rd, 1911; died on the 11th.

History.—No history of consumption in the family. Patient had measles 11 months ago and left pleuritic effusion eight months ago. The present illness started with sickness ten days ago and the child became constipated. There has been some headache. She has been drowsy five to six days. Of late she has wasted. There has been no rash.

Examination.—Temperature 99° F., respirations 20, pulse 80. The child is unconscious and lies curled up on her side, but she can take her feeds. The pupils are equal and dilated and react to light. The right eye is turned outwards. Tache cérébrale is present. There is no facial paralysis and no retraction of the head. Kernig's sign is well marked. Knee-jerks are absent and plantar reflex is flexor. There is the scar of an old perforation in the left tympanic membrane. There is an impaired note over the back of the left side of the chest. The heart is normal. The abdomen is retracted; the liver and spleen are not palpable. Lumbar puncture—fluid under pressure, two test-tubefuls removed; fluid clear, contained a little albumin, slight reduction of Fehling on prolonged boiling. Meningococcus cultivated from the fluid. Centrifugalisation—very few lymphocytes; no tubercle bacilli.

June 4th: Patient unconscious, divergent squint present at times; now and then there are nystagmoid movements. Slight retraction of head; abdomen not retracted. The margins of the optic discs are blurred. 6th: Child a little conscious; she speaks sometimes. The right pupil is larger than the left. 8th: Child is not so well. The pupils are widely dilated and do not react to light. Kernig's sign just present. Patient has a flushed face. Lumbar puncture—half test-tubeful removed. Many lymphocytes and a few polymorphonuclear cells present in the fluid; diplococci seen in fluid. 9th: Lumbar puncture—two drops of fluid removed. 10th: Child deeply comatose. Pulse and respiration irregular. Retraction of head and Kernig's sign absent. 11th: Death.

Necropsy.—Brain: The pia arachnoid in the interpeduncular space is greenish yellow and gelatinous and thickened. This condition passes into the Sylvian fissures over the cerebellum and medulla. There is an increase of fluid in the ventricles. No sign of miliary tubercles. Lungs adherent to the chest wall. Two bronchial glands contained small caseo-calcareous areas. Adhesions between upper surface of liver and diaphragm; on the latter were numerous white nodules.

CASE 5.—Boy, aged 11 years, under Dr. Humphry. Admitted on Feb. 11th, 1911; death on the 12th.

History.—Thirteen days ago patient fainted in chapel. He came home and was sick. The sickness continued for three days and he had great headache for a day or two. Soon after this he became delirious and lately has been noisy. He has had no retraction of the head. A cough has been present for a few days. During the past fortnight the bowels have been opened twice with enemata. Three round worms have come away.

Examination.—The patient has a flushed face, he lies in bed unconscious with his head a little retracted and knees drawn up. He is intolerant of light and is generally irritable. There is a scattered macular rash behind the ears and over the chest and back and down the back of the thighs. The hands are a little cyanosed. The eyeballs wander independently of one another, the pupils are rather dilated. The tongue is protruded to the right; it is very furred. Knee-jerks are absent. Plantar reflex is extensor on the right side. Kernig's sign is present. There is no aural discharge and no joints are painful. Non-consonating râles are present all over the lungs. The liver and spleen are not palpable. A lumbar puncture was performed. There were no organisms in the fluid and no growth took place on cultures.

Feb. 12th: Patient died.

Necropsy.—An exudation of greenish-yellow lymph beneath the arachnoid in the interpeduncular space passing forward over the olfactory lobes, laterally into the Sylvian fissures, and posteriorly on the superior surface of the cerebellum. Increase of fluid over the vertex. The brain was examined microscopically by Dr. L. Cobbett, who said the disease was not due to tubercle. There was a large caseous gland at the bifurcation of the trachea and a few small nodules in the lungs which on examination were found to be tuberculous.

I wish to thank Professor Bradbury and Dr. Humphry, under whom the patients were in this hospital, for permitting me to publish these notes.

Cambridge.

A CONVENIENT METHOD TO TEST THE VISUAL FIELDS FOR COLOUR WITHOUT THE USE OF A PERIMETER

FOR APPLICATION IN CASES SUSPECTED OF INCREASED INTRACRANIAL TENSION.

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IT was formerly supposed that inversion of the visual fields for blue and red was pathognomonic of hysteria, especially when a contraction of the field for form was present in addition. Not everyone is yet acquainted with the work of Babinski,[1] which has clearly shown that the perimetric examinations of hysterical patients as ordinarily conducted are redolent of suggestions, and that these very often influence the patient, so that the findings are not reliable except as indices of suggestibility. Thus, there is no characteristic visual-field type in hysteria.

But there are certain affections in which the visual field is characteristically inverted or interlaced. This happens whenever the intracranial tension is increased to the point where there is an interference with the functions of the neurons which conduct visual impressions. This manifests itself most particularly, clinically speaking, towards the periphery of the retina, where the sensibility is feeblest; so that, as Bordley and Cushing[2] have shown, the red is perceived even sooner than the blue on approaching the centre of the visual field of cases where the intracranial tension is increased by œdema of the brain, whether this is produced by a tumour within the cranium, by hæmorrhage therein, or by some constitutional condition resulting from chronic nephritis, diabetes, or other modification of the blood.

To measure this inversion or interlacement of the colour fields accurately a perimeter is, of course, required, but I have found that the inversion may be ascertained roughly by the following method: The patient sits with his back to a good light looking fixedly at a point in the distance. He is directed to signal as soon as he perceives any movement. The visual field is then approached by the observer's hand, which holds alongside and parallel two objects coloured of an intense pure bright red and blue respectively. After the patient signals, he is asked to signal again as soon as he perceives any colour, while the centre of the field is very slowly approached. The observer then stops the movement and asks what colour is seen. To corroborate, the movement is then continued until the other colour is also seen. In normal persons blue is always seen before red. If this is not the case increased tension may be suspected. In two recent cases, one of tumour and one of albuminuric retinitis, this method has been as positive as that with the perimeter.

If the techique is carefully performed, the test is quite a reliable one and is a useful addition to clinical methods. Indeed, Cushing believes that when inversion of visual fields appears in the case of a tumour operation should not be further delayed.

Washington, D.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE CURIOUS HISTORY OF A SWALLOWED PIN.

BY WILFRED BALGARNIE, M.B. LOND., F.R.C.S. ENG.,
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THE following case, where a pin was swallowed, probably some years previously, perforated the stomach, and became embedded in the peritoneum, seems of sufficient interest to be worth recording.

The patient, a woman, aged 35 years, consulted me in January of this year, complaining of symptoms of acute indigestion. She stated that she had had slight trouble since her "teens," but during the last five years her life had been more or less a misery to her. She had been treated in a hospital for gastric ulcer, and though she improved somewhat whilst lying in bed, her symptoms speedily recurred when she resumed work. The pain at times was so acute as to cause her, so she expressed it, to writhe on the floor, and she had frequent attacks of vomiting on taking food. When first seen she was struggling on with her work, though only able to swallow small quantities of milk, anything else causing much pain and vomiting. I offered to take her into the hospital, but she demurred at this, as her previous hospital experience, where the treatment consisted of rest and diet, did not encourage her to

[1] Ma Conception de l'Hystérié, Paris, 1906. See also various articles of the writer: New York Medical Journal, January, 1909; International Clinics, August, 1908; American Journal of Medical Sciences, August 1910, &c.

[2] Observations on Choked Disc, Journal of the American Medical Association, Jan. 30th, 1909.

submit to another similar course. She was very anxious to know if any operation could be performed, and she only consented to enter the hospital provided she was operated on.

On examination the patient was found to be fairly well nourished but somewhat emaciated about the face. There was nothing abnormal in the outline of the stomach, but towards the upper border, a little to the right of the middle line, there was marked hyperæsthesia, the patient shrinking at the slightest pressure, so much so as almost to suggest a neurotic condition. I asked my colleague, Mr. F. Bowreman Jessett, to see her with me, and he agreed as to the justifiability of an exploration, and subsequent gastro-enterostomy if necessary, and kindly offered his assistance at the operation, which was performed on Feb. 7th.

The abdomen was opened through the right rectus. The stomach was found to be healthy except for a small scar of about the size of a sixpence at the great curvature, 4½ inches from the pylorus. While examining the upper border I felt a hard substance in the gastro-hepatic omentum, then a sudden slight prick on my finger, and next moment a large black pin came into view, firmly embedded and completely hidden in a fold of the gastro-hepatic omentum. It lay vertical, with its point downwards towards the stomach. It was as brittle as spun glass and broke into four pieces during removal. It was rough and corroded, most of its substance having been presumably eaten away by the acid of the gastric juice. Nothing further was done, and the patient made an uninterrupted recovery, and in a few days was on ordinary diet (fish and chicken chiefly).

On making further inquiries, the patient stated that she was never conscious of having swallowed a pin, that she made a practise of never holding one in her mouth, and that this one must have been swallowed in her food. When the accident occurred it is impossible to say, but as she herself declared her symptoms had been much worse during the last five years, it is reasonable to assume that the unfortunate occurrence happened about that time.

The pin had evidently perforated at the greater curvature where the small scar was found, but why it took an upward course over the stomach instead of downwards is one of those mysteries which will always be associated with swallowed foreign bodies. The sensitive area previously mentioned during examination exactly corresponded with the site of the pin. It seems natural to suppose that when food entered and dilated the stomach and peristalsis commenced the organ would tend naturally to scratch itself against the point of the pin; pain and vomiting were most reasonable methods of protest by this long-suffering organ.

As this was not a set operation to "find the missing pin," I could not help congratulating myself that a chance prick on the finger led to the discovery of this cause of offence.

Winchfield.

THE OCCURRENCE OF ECLAMPSIA IN TWO SUCCESSIVE PREGNANCIES.

BY J. HOBART NIXON, M.D., B.S. LOND.

ECLAMPSIA is stated to occur about once in every 500 cases in general practice, though the statistics of lying-in hospitals show a frequency between 0·34 per cent. (Reinburg, Paris, 1905), and 1·17 per cent. (Newell, Boston, 1900). The occurrence of this condition twice in the same woman is illustrated by the following case.

The patient, aged 23 years, a primipara, commenced her labour at 6 P.M. After four hours of ordinary pains she became convulsed and had three fits before the arrival of the medical man. The uterine pains were found to be strong and rapid and the cervix well dilated. The patient was anæsthetised with chloroform and delivered with forceps. One fit occurred two hours after recovering from the anæsthetic. The urine at this time was practically solid with albumin after boiling. The amount of albumin gradually diminished daily and disappeared at the end of the third week of the puerperium, which lasted four weeks. There were occasional rises of temperature the result of infection, the maximum temperature being 103° F. The child was fed at the breast and is quite healthy at the present time.

After an interval of three years the patient became pregnant a second time. During the thirty-sixth week of gestation she wrote to say that she was told she became unconscious whilst partaking of tea with friends on the previous day, but could remember nothing about it, and she had completely lost any recollection of any events that occurred during that afternoon. On examining the patient she had slight œdema of the ankles, the skin was not dry, and the thyroid gland was slightly enlarged. There was no disturbance of vision, and the fundi were found to be normal. The patient did not complain of headache on this occasion. Her urine contained only a trace of albumin, and she passed two pints in the next 24 hours. The patient's condition was so good that I decided not to induce premature labour, but advised rest in bed with strict milk diet and a simple diuretic of potassii nitras, potassii acetas, and decoctum scoparii every four hours, with a purgative pill of calomel and cascara every night. Her urine at the end of a week showed no trace of albumin, and she was feeling so well that she got up.

Three weeks later her second labour commenced at 10 P.M. with feeble pains and headache, which later became intense. She became unconscious about 9 A.M. next morning for about half an hour. On arrival I found a right occipito-posterior presentation, with the head well engaged and the cervix dilated. The pulse was full and bounding, the temperature 102°, and the patient, who had recovered consciousness, complained of severe headache and numbness in the legs. She volunteered the statement that "she knew she was going to have another fit because of pain in the stomach." After administration of chloroform the forceps were applied and the presentation was converted into an occipito-anterior by turning. After removal and re-application of forceps the head was delivered and the child born. The patient was kept under chloroform until about two pints of blood had been lost after the expulsion of the placenta, and on recovering consciousness she expressed her joy "at getting rid of that awful headache." Her puerperium was normal and there was no trace of albuminuria in the daily specimens of her urine.

The following features about the case are interesting. 1. The small quantity or absence of albumin in the urine gives support to the view, advocated by Whitridge Williams and others, that the total output of nitrogen should be estimated by Keldjahl's method, and the ratio between the urea and ammonia equivalent decided when diagnosis is uncertain. 2. The non-recollection of a convulsion or the incidents which had taken place some hours before—a not infrequent observation but one of important medico-legal value. 3. The aura of epigastric pain which might suggest epilepsy, but is a common and valuable symptom in eclampsia. 4. The good results which follow the free extraction of blood by not hastening the third stage. 5. The increased susceptibility to rises of temperature during the puerperium, indicating a diminished resistance to infection in subjects of eclampsia.

Chipping Norton, Oxon.

A CASE OF FRACTURE OF THE FIFTH LUMBAR VERTEBRA.

BY OWEN A. R. BERKELEY-HILL, M.A., M.B., CH.B. OXON., CAPTAIN, INDIAN MEDICAL SERVICE.

THE patient, a man, aged 23 years, unmarried, was brought into the hospital of the Cavalry School at Saugor, Central Provinces, on the evening of Dec. 8th, 1910, having fallen while riding and been rolled upon by his horse. On admission he complained of complete loss of power of the left lower limb and pain in the abdomen. The patient was quite unable to move the left leg or to bend forward. The slightest movement of the lower part of the body caused extreme pain.

On examination the patient was found to be suffering from a good deal of shock. No fracture of the pelvis or femur could be made out. The abdomen was very tender. There was also much tenderness over the sacrum. Sensation of the skin over the affected regions was normal. The knee-jerks were normal. On the following day the abdomen was swollen and very tympanitic. There was great tenderness over the abdomen, especially over the symphysis pubis. There was an inability to pass urine and the bladder was distended. Sixteen ounces of urine were drawn off by a catheter. The bowels were constipated, so an enema (soap and water) was given. Hot fomentations were applied to the abdomen, and the leg and thigh were gently massaged.

On the 11th much swelling with ecchymosis appeared over the upper part of the inner side of the left thigh. The patient was still unable to move the thigh. The bladder and rectum had recovered their tone.

On the following day—i.e., four days after the accident—a swelling appeared at the base of the spine between the crest of the os innominatum and the border of the sacrum on the left side of the body. The swelling fluctuated freely. It was about as big as a walnut. There was slight ecchymosis but no tenderness and no signs of inflammation. The patient was able to move his left limb and to bend forward in bed, but this with difficulty. The same treatment was adopted—fomentations and massage. On Dec. 15th the patient had so far recovered that he could get out of bed and walk about with a stick. The swelling over the adductor muscles was smaller, but the ecchymosis was increased. The swelling on the back covered an area as large as the palm of a man's hand. It obviously contained fluid, but there were no signs of inflammation. The patient's temperature was normal. On the 19th the patient could walk without any pain, but bending forward caused slight pain.

On the next day I saw the case in consultation with Colonel W. D. Sutherland, I.M.S., and we decided to insert a needle into the swelling over the sacrum. An exploratory needle was inserted and 5 c.c. of blood-stained serous fluid were drawn off. The fluid contained no pus cells. The patient's back in the affected region was then covered with adhesive plaster in strips which were carried round the body to meet over the symphysis pubis so that he wore a complete belt of strapping. The patient could then walk and move his legs without any pain or discomfort. An X ray photograph, kindly taken by Lieutenant W. L. Watson, I.M.S., electrical specialist for the Mhow Division, showed a distinct crack between the transverse process and the body of the fifth lumbar vertebra on the left side.

On Jan. 6th, 1911, the patient's back and "riding muscle" of the left leg were again strapped and gentle riding on horseback was begun. On Jan. 9th he was discharged as fit for duty, and except for some weakness of the adductor muscles of the left thigh he is perfectly well. The swelling over the sacrum has completely gone.

Saugar, India.

Reviews and Notices of Books.

Case Histories in Pediatrics. By JOHN LOVELL MORSE, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School. Boston: W. M. Leonard. 1911. Pp. 314. Price $3.00.

THIS book represents a new departure in the methods of teaching diagnosis and prognosis. Its virtues are as conspicuous as its faults are transparent. Within the compass of some 300 pages 100 cases are arranged according to the following classification: diseases (1) of the new-born; (2) of the gastro-enteric tract; (3) of nutrition; (4) of specific infectious character; (5) of nose, throat, ears, and larynx; (6) of bronchi, lungs, and pleuræ; (7) of heart and pericardium; (8) of liver; (9) of kidneys and bladder; (10) of blood; (11) of nervous system; and (12) unclassified. The clinical history of each case is given in considerable detail. The evidence on which a diagnosis can be based is then marshalled in logical order; and, finally, a few words on prognosis are pronounced with *ex-cathedrâ* authoritativeness. In the great majority of cases, however, there is no reliable evidence that the diagnosis made is correct, or that the prognosis was borne out by subsequent events. The great merits of the book are that it teaches the beginner—and, for the matter of that, it might teach many a grey-haired practitioner—how to sift his evidence, how to distinguish between facts and speculations, how to give weight to important signs and symptoms, how to discount minor discrepancies in observed facts, and, finally, how to give the favour of the doubt to that which is common and usual rather than to that which, by reason of its rarity, is exceptional and improbable. We imagine that there are very few practitioners who school themselves in methods of this kind, and certainly many a mistake would be avoided if in each case all the available evidence for and against any particular diagnosis had been put down on paper, mentally visualised, and slowly digested. Knowledge is not knowledge unless it is available, and we contend that the greater proportion of the average medical man's clinical and scientific equipment is not available, through the lack of some such method of mental pigeon-holing as that which the author demonstrates in every page of this volume. Without further attempting to disclose the many merits of these case-histories, we will at once set ourselves to indicate certain of the blemishes which deprive this work of claims to greatness.

In the first place the literary style is abominable; it is vernacular and colloquial to a degree which outrages the English sense of propriety of expression. In the second place the design of the book is such that it fails as a work for arm-chair perusal, owing to the monotonous character of the case-taking, and it fails as a book of reference owing to inherent faults of arrangement and for the want of appropriate headings and variations in the type. Without any introductory headings or change of type we pass from Case 1 to Case 2, and so on throughout the entire series until we reach the end of the book. There is nothing to distract the attention, nothing to rest the eye. All is monotony, all is sameness, *toujours perdrix et toujours perdrix*, until for very weariness of good things we almost pray for something that is common, or even bad.

We understand that this work has met with a favourable reception in America and that a new edition is shortly to appear. We can only hope that the author will study the interests of those who are likely to apply the new edition to the purposes of reference, and make the headings of each case explanatory of what is to follow. We cannot conceive, by the way, that the book could in any directions act as a substitute for a series of clinical lectures, a possibility which, to our surprise, the author appears to entertain.

An International System of Ophthalmic Practice. Edited by WALTER L. PYLE, A.M., M.D., Philadelphia. *Therapeutics.* By Dr. A. DARIER, Paris. Translated by SYDNEY STEPHENSON, M.B. Edin., F.R.C.S. Edin., London. London: Rebman Limited. 1911. Pp. 444. Price 17*s.* 6*d.* net.

THIS volume inaugurates an "International System of Ophthalmic Practice," under the editorship of Dr. Walter L. Pyle of Philadelphia. Subsequent volumes are to include "Medical Ophthalmology," by Dr. Arnold Knapp of New York; "Ophthalmic Diagnosis," by Dr. Charles H. Beard of Chicago; "Pathology and Bacteriology of the Eye," by Messrs. E. Treacher Collins and M. S. Mayou of London; "Affections of the Orbit and Accessory Cavities," by Dr. Christian R. Holmes of Cincinnati; "The Examination and Refraction of the Eye," by the Editor; and a "Treatise on Ophthalmic Surgery." The scheme is therefore a somewhat elaborate one, and judging by the first volume of the series it is destined to occupy a prominent place in ophthalmic literature. The names of those responsible for the several volumes are well known and are guarantees of excellence of achievement.

Turning to the work before us, it is so much superior to the "Lectures on Ocular Therapeutics," previously published by Dr. Darier and reviewed in THE LANCET, that we suspect that the translator or editor, or both, have submitted the original to stringent control. Our acquaintance with Dr. Darier's writings has led us to discount some of the enthusiasm which he is in the habit of displaying for the latest drugs and methods. Here we find a sound exposition of up-to-date ocular therapeutics, in which all the encouragement to be derived from recent discoveries is fully

dwelt upon, yet with such reserve as to remove the suspicion of unjustifiable optimism. Whilst we may not always agree with the routine methods which the author advocates, we should certainly derive much help from his wide experience of new drugs and methods, and from his advice as to their employment in difficult and recalcitrant cases. In the first part of the book will be found just the information we require upon such topics as subconjunctival injections, serum-therapy, photo-therapy, electro-therapy, hydro-therapy, massage, and the more recently introduced drugs—analgesics, vaso-dilators and vaso-constrictors, mydriatics and miotics, silver compounds, and so on. In the second part the treatment of the various diseases of the eye and its adnexa is discussed in order. Perhaps our readers may have some diffidence in using argyrol lavage and protargol massage with apparently so little discrimination, but on the other hand they may be induced to give dionine a more frequent trial and to employ guaiacol more often when there is a suspicion of tuberculous disease.

We can cordially recommend the book to the ophthalmic surgeon as a very useful collection of second strings for his bow. There are some inaccuracies in the spelling of proper names and some more serious mistakes of fact, but they are minor blemishes which can easily be corrected in a new edition.

Animal Micrology: Practical Exercises in Microscopical Methods. By MICHAEL F. GUYER, Ph.D., Professor of Zoology in the University of Cincinnati. Chicago: The University of Chicago Press. 1910. Pp. 240. Price 7*s.* net.

THIS book, with a title unfamiliar to English ears, is the outcome of a ten years' experience by the author as instructor of classes in microscopical technique. It is not intended for the advanced specialist student, but hopes to be of use as a class text-book and as a guide to the independent individual worker, whether teacher or novice. The instruction is arranged as a series of practical exercises, giving full directions as to what the learner is to do with his material and reasons for his methods. A book which is intended for the unaided worker and is arranged on the above plan is met by two difficulties. It is apt to be overwhelmed by detail if it is to be of real service to an uninstructed novice, and is difficult to adapt to the needs of a specific course the aim of which is in any degree different from the one proposed in the book. It is to the credit of the author that the difficulties are to a large extent surmounted, more especially in the last respect, as the subjects selected are of such general importance that they must necessarily be dealt with in any course of histology. The work has a third aim. It is intended to serve as a reference book for teachers in the preparation of material for courses in elementary zoology, histology, or embryology, and in this aspect will prove of considerable value. The range of subjects covered is somewhat extensive. It not only deals with the usual histological methods—which occupy some 97 pages—but also treats of hæmatology, the examination of bacteria, and some embryological methods. The reconstruction of objects from sections forms the subject of a short chapter.

Nearly half the book is occupied by a series of appendices. The first of these is concerned with the microscope and its optical principles; the second contains the formulæ and uses of a considerable number of standard reagents; while the third, which will prove of much use to the individual worker and to demonstrators, gives a table of the tissues and organs required in a course of histology, the source from which they are to be obtained, and the methods of preparation to be adopted. The final appendix gives similar information for a general course in zoology.

The author's aim has been to produce a practical book, and he has taken care to include in his directions those small matters—the tricks of technique—which are so important in procuring good results. There is no doubt that to work through the course prescribed in this book would give the student a sound knowledge of the methods of histology. There is, of course, no attempt to describe the tissues or objects prepared. The book is well printed on good paper and is of attractive appearance.

LIBRARY TABLE.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota, 1905-1909. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 668. Price 24*s.* net.—This volume contains 65 papers by those connected with the famous Mayo Clinic. All the articles have appeared already in print in periodical literature and some have been read as papers before medical societies. It is clear that with so large a number of papers they can hardly be all of the same value, and it is equally clear that we can refer to only a few of the articles. The editor tells us that the chief reason for bringing them together in the present form has been the convenience of reference by those who have written them, and it was at first intended merely to print them for private distribution, but that many members of the profession asked to have the book published. When we consider the wealth of material available at the Mayo Clinic, the skill of its surgeons, and the care taken in the pathological examination of the cases, we can feel no surprise at the great advances in surgery which have been made there. Perhaps the most striking paper, if we must specially distinguish one amongst so many of great excellence, is that on the Surgery of the Large Intestine with a review of 100 resections, by Dr. W. J. Mayo. We may also mention a paper by Dr. L. B. Wilson on the Value of Sondern's Differential Leukocyte Resistance Line in the Diagnosis and Prognosis of Acute Appendicitis, and an article on Acquired Diverticula of the Large Intestine, by Dr. W. J. Mayo, Dr. L. B. Wilson, and Dr. H. Z. Giffin.

Formulaire: Consultations Médicales et Chirurgicales. By Professors G. LEMOINE, E. GÉRARD, E. DOUMER, and J. VANVERTS, of the Faculty of Medicine of Lille. Fifth edition. Paris: Vigot Frères. 1911. Pp. 1012. Price fr. 7.—This work is well known in France and the present edition has been brought thoroughly up to date. In the first part of the book the various drugs and their preparation are considered in alphabetical order, and some of the newest medicaments have been included, such as guipsine, hectine, and rhamnol. The chapters on opotherapy and serotherapy have been completely rearranged. Under each drug are given its properties, the indications for its use, and its therapeutical action, its dosage and pharmacology, also the preparations which are derived from it. The whole information is given clearly and concisely. The second part of the book is occupied with the treatment of particular maladies. The diseases are arranged alphabetically in order to facilitate reference and a uniform plan of description is adopted throughout. A definition of the disease is first given, then its etiology, then a brief account of the principal clinical signs, and finally the treatment. The therapeutical indications are carefully considered and numerous prescriptions are suggested which would be of great assistance in actual practice. Medical and surgical affections are included. 127 pages are devoted to the treatment of diseases of the skin and of venereal disorders, and the information found under this

heading will prove particularly useful to practitioners. Electro-therapy is also touched upon, and the various conditions likely to benefit by this method of treatment are duly mentioned. The remarks on diet are also worthy of attention. The last portion of the work deals with the various forms of mineral waters, and a short account is given of the principal spas in France and other countries. The authors may be congratulated on having produced a useful handbook.

Guide Pratique de l'Infirmière-Hospitalière et de l'Infirmier-Brancardier: Bandages Usuels—Premiers Soins d'Urgence—Relèvement et Transport des Blessés. Par le Dr. EDMOND MORIN. 200 figures dans le texte. Paris: Vigot Frères. 1911. Pp. 200. Price fr.2.25.—This little work, published under the auspices of the Union des Femmes de France, a department of the French Red Cross Society, is a very practical work on first-aid. The three parts into which the work is divided are indicated in the title-page. It is needless in these days to take up the argument in favour of a wide diffusion of the elementary principles and methods of first-aid. The book is very complete and it is fully and well illustrated, and should prove a serviceable manual for French-speaking persons intending to take up first-aid training seriously.

Beiträge zur Diagnostik der Inneren und Chirurgischen Pankreaserkrankungen. (Contributions towards the Diagnosis of Medical and Surgical Diseases of the Pancreas.) Von Professor Dr. ALBERT ALBU. Halle-a-S.: Carl Marhold Verlagsbuchhandlung. 1911. Pp. 108. Price M.2.80.—This is one section of a large collection of treatises on matters connected with the diseases of digestion and metabolism which is being issued under the auspices of a number of distinguished German physicians. A short account is given of the etiology and symptomatology of the pancreas, but the greater part of the book is devoted to the diagnosis. The disturbances in the digestion of proteids, fats, and carbohydrates are considered in turn, and the methods of investigation employed are described and discussed. A few pages are devoted to an account of the evidence in favour of an internal secretion of the pancreas, especially in connexion with some forms of diabetes. The latter half of the book deals with the special diagnosis of the different affections of the pancreas. The treatment follows briefly, and the book concludes with a fairly extensive bibliography of the subject. The book represents the present state of our knowledge on this somewhat difficult subject, and it will be of value especially to those who are studying the question of diagnosis of disease of the pancreas.

Tuberculosis as Regards Heredity in Causation and Elimination from Infected Herds. London: JOHN MURRAY. 1911. Pp. Price 1*s.*—This pamphlet will be read with interest not only by those connected with the breeding of live stock in this country, but also by medical men who know how important to the community all questions are which relate to the transmission of tuberculous infection. The statistical evidence with regard to the influence of heredity is examined carefully in the pamphlet, and reasons are given for maintaining that the hereditary transmission of a special predisposition to the disease is in the present conditions of breeding a factor of no serious importance. It is admitted that in a small proportion of cases the calves dropped by tuberculous cows are tuberculous at the time of their birth, but it is held to be improbable that the disease is ever handed on from the male parent to the unborn fœtus. The second part of the pamphlet describes in detail the methods by which tuberculosis may be eliminated from a tuberculous herd. The difficulties encountered in different circumstances are fully considered, and the principal causes of failure in attempts to get rid of the disease are pointed out.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLII. Nos. 5 and 6. London: C. F. Clay, Cambridge University Press. July 15th, 1911. Price 8*s.* 6*d.*—In the paper on the Reversal of Reflexes, by Professor C. S. Sherrington and Mr. S. C. M. Sowton, it is made abundantly clear that the sense of the reflex which is excitable from one and the same afferent nerve may be reversed on alteration of some one definite factor in the conditions of the reaction, a typical example being chloroform. The reflex effect of stimulating afferent nerves, causing a rise of blood pressure, may be changed by a sufficient dose of chloroform from a rise of pressure into a fall. The authors have particularly examined the influence of chloroform upon reflexly exciting contraction of the knee extensor muscle of the decerebrate cat. So that just as pressor effects on blood pressure can be changed into depressor effects, so can the chloroform reversal be traced in reflexes expressed in the skeletal muscle. Miss A. E. Porter, discussing the identity of pepsin and rennet, says that Pawlow, in 1901, suggested it, while Hammarsten regarded the two ferments as independent. She has found that several commercial rennets were actively milk-curdling but antipeptic. On this and other grounds she supports Hammarsten's view that the two ferments are distinct and independent. Dr. H. M. Vernon's paper on the indophenol reaction is rather technical and cannot readily be abstracted. This reaction has been used as a test for oxidases in tissues, and occurs when tissues finely chopped are allowed to act on a mixture α-naphthol, paraphenylene-diamine, and sodium carbonate. By this means it is found that the heart muscle is the richest of all in oxidase. Dr. F. W. Edridge-Green's communication on Subjective and Other Phenomena connected with the Retina is a continuation of a previous paper and will be interesting to physiologists. Dr. E. P. Cathcart, studying the reflux from intestine to stomach, points out that Beaumont, in his classical observation on Alexis St. Martin, refers to the presence of bile in the stomach in certain circumstances—e.g., mechanical stimulation. Dr. Cathcart used dogs with a pre-pyloric fistula, and determined the effect of the introduction of solutions of glucose, tap-water, and 0·2 hydrochloric acid or sodium oleate into the stomach, on the regurgitation of bile into the stomach. When the bile does regurgitate through the pylorus it only enters the antrum pylori. This seems to favour the view that the pre-pyloric sphincter cuts off the pyloric part completely from the fundic part. It would appear probable that the stimulus which causes the regurgitation is the hyperacidity of the gastric contents of the antrum pylori. Mr. I. Feldman and Mr. L. Hill conclude that the increased production of lactic acid by the muscles is due to oxygen want, and that oxygen inhalation has a favourable influence, at any rate in part, in lessening the rise of acid concentration. Mr. H. Scott-Wilson's paper on the Estimation of Acetone in Animal Liquids deserves the attention both of physiological chemists and of clinicians. The original memoir must be referred to for details, but the author claims that his method of estimating acetone in animal fluids can be carried out on as little as 20 c.c. of normal urine, and that the whole estimation occupies only 40 minutes with an error less than 0·006 mg. of acetone. The average daily excretion of free and combined acetone in human urine is 2–4 mg., and there is a striking parallelism normally between the acetone and nitrogen excreted daily and even from hour to hour. Mr. G. C. Mathison's paper is primarily of pharmacological interest, and gives a full account of the action of potassium salts. When injected intravenously they cause a primary fall of blood pressure,

followed by a secondary rise, the fall being due to the action of the potassium on the heart, which undergoes dilatation and expels less blood, and there may be stoppage in diastole or heart-block. Intra-arterial injection of KCl causes an immediate rise of the blood pressure in the decerebate animal, the spinal animal, and the animal with the spinal cord destroyed. The rise is partly due to excitation of the vaso-motor centres and partly to a direct effect upon the vessel wall. Potassium chloride causes marked and immediate contraction of smooth muscle fibre—e.g., œsophagus and uterus of the cat. It would appear that in the cat potassium acts as an excitant to somatic and visceral nerve centres and to plain muscle. The paper of Mr. J. Crighton Bramwell and Mr. Lucas Keith on the Relation of the Refractory Period to the Propagated Disturbance in Nerve will be especially interesting to physiologists, as also will that on blood-gas apparatus by Mr. J. Barcroft and Mr. H. L. Higgins. The following are some of the titles in the Proceedings of the Physiological Society for June 3rd, 1911:—J. Argyll Campbell: The Action of Chloroform upon the Blood Vessels. R. A. Krause and W. Cramer: Sex and Metabolism. W. Cramer: On the Inactivation of Adrenaline in Vitro and in Vivo. C. R. Marshall: On the Mode of Action of Tetra-methyl-ammonium Chloride. Harold Pringle and John Tait: Anticoagulants on Frog's Blood, Part II. G. H. Clark: The Influence of Increase of Temperature upon Cardiac Inhibition. Harold Pringle: On the Presence of Secretin during Fœtal Life (Preliminary Communication). Proceedings of the Physiological Society for July 1st, 1911:—W. Burridge: Lactic Acid and Cardiac Muscle. W. Burridge: Nicotine and Curarised Muscles. George J. Burch: The Time-relations of the Negative and Positive After-effects.

The Medical Chronicle.—The July issue of this magazine deals mainly with an Epidemic of Acute Tonsillitis which presented peculiar features. Papers are contributed by Dr. J. W. Grange, Mr. W. Bruce Bell, Mr. John Rust, Mr. C. H. Tattersall, and Dr. J. R. Carver. The disease was very acute in onset, and was accompanied in some cases by an erythematous rash. It also exhibited as sequels arthritis, adenitis, and nephritis. It thus showed curious resemblances to scarlet fever. The causal agent was a streptococcus of the *conglomeratus* type. Mr. J. Arnold Jones records a case of Permanent Deafness following Mumps, and Mr. Lindley Sewell writes on Certain Dangers Associated with the Removal of Tonsils and Adenoids.

The Birmingham Medical Review. — The July number contains an abstract of the Ingleby lectures on Advances in Knowledge of Cancer by Dr. E. F. Bashford, which have already appeared in our columns (June 10th, p. 1596). Dr. D. Buchanan discusses the Public Health Problem of Tuberculosis, the article not being concluded in the present issue; and Dr. James E. H. Sawyer records the occurrence of Locomotor Ataxy in Two Sisters.

West London Medical Journal.—The Cavendish lecture by Dr. A. Neisser on the Evolution of the Modern Treatment of Syphilis takes first place in the July issue of this journal. The author recommends the combined use of mercury and salvarsan, giving the latter intravenously and the former by intramuscular injection. He also at times uses arseno-phenyl-glycin in place of arseno-benzol. Dr. Edward Reginald Morton writes on the Present Position of the X Rays and Radium in the Treatment of Malignant Disease, holding that all cells are liable to injury by these agents, but cancer cells most readily through their lack of vital resistance. Dr. Henry E. Barnes records some Acute Abdominal Cases met with in General Practice. Dr. L. C. V. Hardwicke records Two Cases of Vicarious Menstruation, and Dr. Harold S. Sington one of Sulphonal Poisoning.

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-NINTH ANNUAL MEETING IN BIRMINGHAM.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 28TH.

President, Dr. A. H. CARTER (Birmingham).

Dr. WILLIAM EWART (London) gave a demonstration of a

Method for the Clinical Use of Carbonic Acid Gas.

The apparatus consisted of a special mouthpiece with two tubes, one for the inhalation of carbonic acid gas, the other to act as an air-way or for the inhalation of any other substance. The carbonic acid gas was collected in a container from an ordinary soda-water syphon. Dr. Ewart has found that these syphons supply on an average about 2400 cubic centimetres of the gas. The container was graduated and was connected by tubing with the mouthpiece and with a contrivance for discharging the gas. Dr. Ewart gave a review of the development of our knowledge in regard to the employment of carbonic acid gas for therapeutic purposes. He had drawn attention to this matter in a paper read before the annual meeting of the Association at Portsmouth ten years ago. He pointed out that until recently physiological study had been directed to the lethal and asphyxial properties of the gas, but now physiologists had confirmed the results of clinical work upon its usefulness in smaller quantities. Experiments had demonstrated that it was safe to inhale as much as 6 per cent., but Dr. Ewart did not go beyond 4 per cent. in employing it in his wards. He described its chief therapeutic actions as follows: it stimulates expiration, acts as a cardiac stimulant, exerts an indirect effect as a sedative, and possesses the property of toning up a weak pulse. It is also useful in spasmodic conditions. Dr. Ewart also attributed the beneficial effects of the Nauheim baths to the inhalation of the carbonic acid gas given off from the water.

The PRESIDENT, Dr. J. F. HALLS DALLY (London), and Dr. T. STACEY WILSON (Birmingham) briefly discussed the communication, and Dr. EWART replied.

Dr. STACEY WILSON read a paper on

Colon Dyspepsia.

He suggested that in many cases showing symptoms of gastric indigestion the primary disturbance was a functional disorder of the colon and not of the stomach. Systematic palpation of the colon demonstrated clearly the difference between the softness and insensitiveness of the normal bowel and the hardness and tenderness of one that was abnormal. He stated that when the colon was abnormally hard it was usual to find certain definite symptoms present. These symptoms he referred to a functional disturbance of the colon, consisting in an abnormal muscular activity, which he described as "expansile tone." The basis of this was an expansion of some of the circular fibres of the muscular wall, causing hardening of the bowel with enlargement of the lumen. It was probably due to some irritant or stimulant produced in the bowel as the result of the action of micro-organisms. This expansion of the muscles of the colon was of the nature of a reflex, because the amount of the effect produced by the irritant appeared to be determined by the excitability of the nervous system, expansile tone being more readily produced when the nervous system was over-excitable than when it was more stable. The main symptoms of the condition were due to the conflict between the two opposing types of muscular activity in the bowel—namely, between contraction and expansion, resulting in tenderness of the bowel wall and in pain or other afferent impulses, which might influence the nervous system in various ways. These impulses might be felt as pain in the bowel or as pain referred to the skin area, which is in relation with the segment of the cord receiving the afferent impulses from the bowel. They might pass direct to the brain or to the vaso-motor centres controlling the brain circulation, and be felt as mental depression or some other form of brain misery, or they might pass to the vaso-motor centres controlling the heart and circulation, and then the only symptoms of colon dyspepsia might be palpitation or other

functional cardiac disturbance. The facts that these symptoms occurred at times when the colon was active, after meals, and also when the nervous system was hypersensitive, and when the colon was subject to gouty irritation—e.g., in the early morning—might be of diagnostic value. Dr. Stacey Wilson discussed the relation of colon dyspepsia to mucous colitis, and stated that it may be a pre-mucous stage of mucous colitis or an allied affection accompanying it. He discussed the use of salol and benzonaphthol in treatment.

The PRESIDENT, in discussing the condition of colon-dyspepsia, expressed his opinion that Dr. Stacey Wilson did not quite carry conviction in regard to what he described as expansile tone.

Dr. H. MALET (Wolverhampton) also expressed scepticism in regard to the possibility of a muscle fibre being able to push its ends apart. He suggested that some cases of pain might be due to arrhythmia in the peristalsis of the bowel. He confirmed the effect of colon conditions upon the mental state.

Dr. EWART referred to the condition of appendix dyspepsia.

Dr. STACEY WILSON replied.

Dr. F. W. PRICE (London) read a paper on

Recent Advances in Cardiac Therapeutics.

He pointed out that the employment of graphic methods had given rise to an enormous advance in our knowledge of cardiac disorders and had rendered the whole field of cardiac therapeutics open to accurate and scientific study. His own observations were made upon digitalis and its allies in collaboration with Professor A. R. Cushny and Dr. James Mackenzie. The method adopted was that in all except urgent cases the patient was kept at rest for some days before the drug was given. The cases were observed in great detail, and the patient's subjective symptoms were carefully recorded. Weighing and measuring were done to estimate the degree of dropsy when that was present. The size of the heart was measured by percussion, the systolic blood pressure was taken by Martin's apparatus, and the graphic records were obtained by means of the ink polygraph. In some cases electro-cardiograms were also obtained. The doses of digitalis given were one drachm of the tincture daily or two drachms if the symptoms were urgent. Its administration was continued until some definite effect was obtained. Twenty-one cases of mitral disease, 11 cases of aortic and mitral, 1 case with an aortic systolic murmur, and 3 cases of cardio-sclerosis were investigated in addition to cases of paroxysmal tachycardia, tachycardia of obscure nature, heart-block, emphysema, and pulmonary tuberculosis with pyrexia. Of the 36 cases of cardiac disease 16 were cases with auricular fibrillation, and in all of these except two there was slowing of the heart and great improvement in the patient's condition after the use of digitalis. In only two of the cases of valvular disease without auricular fibrillation were there marked slowing and improvement; in most of the remaining cases there was no action at all. In the case of paroxysmal tachycardia digitalis produced auricular fibrillation and then slowing, and a similar result was obtained in the other case of tachycardia. In regard to the question of dosage, Dr. Price had found that a longer time was required to obtain effects with small doses; he therefore advised beginning with a full dose till the full effect was obtained, and then continuing with small doses. No appreciable effect was observed upon blood pressure except in one case. In no case where digitalis failed did other drugs like squills and strophanthus succeed. Squills showed little effect, and helleborin was disappointing. No diminution of the pulse-rate was observed after the use of aconite. Dr. Price concluded that the great variation in the action of digitalis and its allies observed with different patients was not due to differences in the drug, but to differences in the patients' lesions. Cases of auricular fibrillation responded well to the drug unless pyrexia was present, or unless there were marked fibrotic changes in the heart muscle. Cases without auricular fibrillation rarely showed marked improvement. The signs of auricular fibrillation were then briefly described as follows: (1) in the great majority of cases the pulse is continuously irregular and of disorderly character; (2) in mitral stenosis with auricular fibrillation the presystolic bruit invariably disappears, though a diastolic bruit may be present; (3) the normal auricular wave is absent in tracings taken with an ink polygraph; and (4) the electrocardiogram shows no sign of the normal auricular systole.

The paper was discussed by the PRESIDENT, Dr. STACEY WILSON, and Dr. R. D. RUDOLF (Toronto), and Dr. PRICE replied.

Dr. OSCAR JENNINGS (Le Vesinet, Paris) read a paper on

The Treatment of Morphinism.

He differentiated between cases in which morphine only was taken and those in which cravings for other drugs occurred, and he objected to the use of the term "morphinomania," believing that it encouraged the patient to regard himself as devoid of will. He affirmed that cases of morphinism treated by chemicals or by restriction cures tended to relapse, and he advocated a system which he described as guidance without compulsion. The main features of this method were to encourage the patient to regain confidence, hope, and self-reliance, to employ suitable therapeutic, hygienic, and dietetic measures, and to insist that the patient should devote himself entirely to the object in view. Cases were described in support of Dr. Jennings's views. He claimed that by this method the auto-suggestive anticipation of difficulties was obviated and that the patient was not required to do anything heroic. He objected to the view that strong narcotic drugs were necessary in weaning patients from addiction to morphine. He counselled strict temperance in eating and drinking, even to the degree of abstemiousness or temporary fasting. He thought Turkish baths were a useful adjunct and that cycling was also beneficial.

Dr. H. CRICHTON MILLER (London) could not bring himself to believe that Dr. Jennings's method was applicable to really bad cases. He thought that an essential to cure was that freedom from pain during treatment should be guaranteed. It was necessary to obliterate the memory of the craving. He therefore availed himself of coma produced by the bromide sleep.

Dr. W. H. BRYCE (Colinsburgh) accepted the division into two groups suggested by Dr. Jennings. He had found sparteine, originally recommended by Dr. Jennings, to be very useful.

Dr. JENNINGS in his reply stated that some of his cases were patients taking large quantities of morphine daily.

Dr. HALLS DALLY read a paper on

The Clinical Determination of Blood Pressure by means of Pachon's Sphygmo-oscillometer.

The construction and manner of using the instrument were described, and the theory of oscillations upon which it is based was briefly reviewed. Dr. Halls Dally stated that it was extensively used on the Continent, but so far had not received much notice in this country. It was capable of giving accurate records of both systolic and diastolic blood pressures. He thought that the diastolic pressure had not obtained the attention it deserved, as it was probably more constant for the individual than the systolic pressure. The Pachon sphygmo-oscillometer gave higher readings for the pressures than the Riva-Rocci apparatus. Dr. Halls Dalby stated that the Pachon instrument worked throughout at constant pressures and with a maximum sensibility. It also reduced the personal equation to a minimum.

Dr. W. J. TYSON (Folkestone) read a paper on

Mania following Pneumonia.

He excluded from consideration the ordinary febrile delirium which might occur in this disease and also those cases referred to by Addison where the symptoms of mania were the chief early clinical features, and the physical signs of pneumonia were discovered in the course of routine examination. He referred to cases following upon pneumonia. He believed that the scanty literature of this subject, which he briefly summarised, was due to the fact that the cases generally occurred in private practice and were not recorded. The chief features of this condition were that it generally occurred in patients under the age of 40 years and of neurotic temperament. The pneumonia was usually of sthenic type, and was associated with sleeplessness. The disease need not necessarily be very acute, and the degree of the mania bore no relation to the amount of lung tissue involved. The mania occurred after the crisis. Dr. Tyson believed that it was toxic in origin, and was to be looked upon as part of the pneumonia. The prognosis was good, and asylum treatment need not be considered. It was most important to treat the

sleeplessness. The best hypnotic was good food, especially at night, but morphia might be given.

Several members briefly discussed the paper.

Dr. J. STRICKLAND GOODALL and Mr. W. N. KINGSBURY (London) communicated a paper on

Acute Interstitial Emphysema.

The causes of subcutaneous emphysema were briefly considered, and the rarity of this condition apart from some form of strain or injury was mentioned. The case observed by them was a child, aged 1 year, showing signs of rickets, who presented definite signs of pneumonia lasting about 16 days. Shortly before death swelling due to subcutaneous emphysema appeared above the manubrium and spread to the left side of the neck and face. There was at no time violent cough and no laryngeal obstruction. On post-mortem examination both lower lobes and the dorsal part of both upper lobes were congested. There was also acute dilatation of the crepitant part of the right lung. There was air in the connective tissue and in the mediastinum. There was great enlargement of the liver, which Dr. Goodall and Mr. Kingsbury believed to have impeded the action of the diaphragm. They also thought that their case supported the view of Dr. A. Keith that the diaphragm expands the lower lobes and the dorsal parts of the upper lobes. They had examined the post-mortem reports of 147 fatal cases of pneumonia, in 125 of which the liver was weighed, and in all of them it was much enlarged.

SURGERY.

FRIDAY, JULY 28TH.

President, Sir THOMAS F. CHAVASSE (Birmingham).

Dr. G. WILLIAM HILL (London) gave a demonstration of

The Use of the Gastroscope.

The instrument that he had devised consisted of a direct vision gastroscope passed under visual observation, so that there is the minimum risk of doing any harm. Inflation of the tube with air removes the mucous membrane from the advancing end of the tube. In conjunction also with Dr. George Herschell, Dr. Hill has had made a periscope for indirect vision to fit inside the outer tube. The method has been found to be of value in distinguishing gastric erosions or gastrostaxis from ulcer, and also simple from malignant ulcers. The instrument was shown in use on a patient, and many of the members present were able to examine parts of the stomach even as far as the pylorus.

Mr. D. P. DALBRECK WILKIE (Edinburgh) read a paper on

Some Functions and Surgical Uses of the Omentum.

He maintained and proved by experiment that the omentum is not a specialised organ for the absorption of fluids, but it possesses a very remarkable capacity for taking up any foreign bodies or solid particles left in the peritoneal cavity. This was shown by the injection of a quantity of particles of carbon into the peritoneal cavity of an animal, and when the animal was killed after an interval it was found that all the particles were in the omentum, while the rest of the abdominal organs were free from any carbon. This "scavenging" function is well seen in the late stages of recovery from peritonitis. Removal of the omentum appreciably lowers an animal's resistance to peritoneal infection. In acute peritonitis the bacteria tend to adhere to the omentum, which forms a very favourable battleground for the phagocytes in the fight between the host and the germs. When there is an infected area in the peritoneum the omentum moves towards it, and these movements depend on two factors; one factor is the action of the respiratory and peristaltic movements, and the other is peritoneal irritation and roughening. There is no evidence to justify the opinion that the omentum has any power of intelligent movement. If the blood-supply of the spleen be interfered with the omentum will wrap itself round the spleen and the spleen will survive, while if the omentum be excised at the same time as the blood-vessels of the spleen are tied it usually causes the death of the animal. Experiments give some ground for believing that in cases of strangulation of the bowel, where the vitality of a portion of it is endangered and a resection of the doubtful part is deemed inadvisable on account of the general condition of the patient, the omentum may with benefit be wrapped round the loop of gut. The use of omental grafts to reinforce intestinal suture-lines is not advisable, for the graft adheres not only to the area to which it has been applied, but also to adjacent coils of intestine; the reinforcing of suture-lines by a corner of the omentum which is not severed from its blood-supply is a valuable procedure in some cases. The omentum may be used and may be relied on to plug the perforations of hollow viscera when the lesions cannot be closed by the ordinary methods. The mucous lining of the viscus grows over the omental plug with surprising rapidity. Where there is the possibility of an abdominal wound having been infected during an operation it is well before closing it to spread the omentum behind the deep surface of the wound. If the wound suppurates the omentum will adhere firmly to its peritoneal surface, and will not only prevent the development of a peritonitis but will also very considerably lessen the risk of a complete rupture of the wound. The paper was illustrated by a number of very striking lantern slides.

Dr. W. I. DE C. WHEELER (Dublin) read a paper on

Two Cases of Abdominal Aneurysm Treated by Operation.

Every form of abdominal aneurysm is rare, and as medical treatment can hold out little hope of a cure all cases which have been treated by operation should be recorded. He referred to some of the earlier cases, and pointed out that sepsis was responsible for the fatal issue of many of them. This would not occur now, but it was advisable for the surgeon to supervise personally all the sterilisations. The use of electricity cannot be recommended, for it is of very little direct value, and the risk of sepsis is decidedly great, for there is a length of wire which is more or less septic and not easily sterilised. The introduction of wire into an aneurysm favours the deposition of fibrin, and the apparatus devised by Colt is the most convenient form and the least likely to lead to sepsis. It has been shown by post-mortem examination that the cœliac axis can be obliterated without any interference with the function of the organs which it supplies. Mr. Wheeler has employed Colt's method in two cases. It consists of a wire "cage," which is inserted in the aneurysm by means of a special cannula. The first patient was a man, 38 years old, who had had syphilis some years previously. The presence of a pulsating swelling in the abdomen had been noticed for eight months. The patient was placed on his back with a sand-bag under the loins. An incision was made through the abdominal wall over the aneurysm, which was easily separated from surrounding structures. The special trocar was inserted into the sac for about two inches, and when the cannula was withdrawn the blood welled out. A cartridge with 150 inches of wire was placed within the sac and a few stitches were inserted so as to close the trocar opening in the sac wall. For the first five days after the operation the pulsations of the sac were more tumultuous than before, but after that the pulsation became less. One month later an injection of "606" was given. The pain and discomfort all disappeared, but the tumour could still be felt. In this case it is at least open to doubt what part was played by the wire in the cure. In the second case there was a history of syphilis, and before the operation an injection of "606" was given. When the abdomen was opened the pancreas was seen to be adherent to the sac. A wisp of 105 inches of wire was inserted through the cannula. For a few days the pulsation was more marked but it soon subsided, and no murmur could be heard. In both cases open ether anæsthesia was employed. Five cases have been operated on in Dublin by the Colt method, including the two cases described now, and of these three died a short time after the operation. The high mortality was due to the late stage when the condition was recognised. The method was worthy of being employed and it offered the best chance at present.

Mr. HERBERT J. PATERSON (London) contributed a paper on

Appendicitis Without Physical Signs.

Most surgeons agreed that chronic disease of the appendix might exist without any physical signs; indeed, the appendix might be the seat of gross lesions although the patient had never had a definite attack of appendicitis. In some chronic cases the disease might mimic gastric disease very closely. Mr. Paterson had had 44 such cases; in some of these operation was undertaken for a supposed gastric or duodenal

ulcer, but it is generally possible to recognise the true condition. The prominent symptom is pain following the taking of food; it is generally referred to the left of the middle line, and sometimes the pain radiates downwards to the right iliac fossa. In most of the cases the history is long, the average duration being about five years. Vomiting of blood is common, and it comes probably from the gastric mucous membrane. In about half of the cases free hydrochloric acid is absent. The extent of the lesion of the appendix varies greatly. Duodenal ulcer is frequently associated with appendicitis, and in two-thirds of the cases in which he had operated for duodenal ulcer he had found appendicitis also, and he suggested that the duodenal ulcer was the result of toxic absorption from the appendix or from the large intestine. In operation for supposed gastric or duodenal ulcer the absence of or failure to discover either of these lesions should suggest the examination of the appendix, and in cases of recurring abdominal pain of obscure origin it should be borne in mind that the appendix may be the cause, although there may have been no definite clinical attacks of appendicitis. Even in acute cases there may be no rigidity, tenderness, or distension. In all cases of appendicitis the immediate operation is indicated.

Mr. G. P. NEWBOLT (Liverpool) read a paper on

Tuberculous Mesenteric Glands.

He presented three questions on the subject. First, Is a diagnosis always possible? Secondly, May tuberculous glands cause serious trouble? Thirdly, What should be done with tuberculous glands which are discovered when the surgeon is operating for some other condition? The diagnosis is by no means always possible, for the swelling caused by the enlarged glands, even if it can be felt, can easily be mistaken for some other condition. There can be no doubt that serious trouble may follow from the presence of enlarged tuberculous glands in the mesentery. They may suppurate and burst, or they may do harm in other ways. He related a case in which a volvulus had occurred as the result of the presence of suppurating tuberculous glands. The patient died 36 hours after the commencement of symptoms as the result of the shock. During the operation for appendicitis it is not at all rare to find one or more calcareous lymphatic glands in the mesentery, and the question is what should be done with them. It may be a very simple thing to remove such glands or it may be difficult. Sometimes a fistula remains as the result of removing a gland, and sometimes during the removal it is found that it is adherent to the mesenteric vessels.

Mr. JAMES BERRY (London) read a paper on

A Further Series of Cases of Cleft Palate Treated by Operation.

In 1905 he gave at the Leicester meeting of the Association a detailed account of all the cleft palates on which he had operated up to that date, and now he presented to the meeting a series of tables of all the cases on which he had operated since that time. He had never refused to operate on a case except on the ground of ill-health. In rather more than half the cases the child was over the age of three years at the time of operation. The best period for the operation was between the ages of one and three years, and even a few slight cases in which the cleft has been confined to the soft palate have been operated on during the first year of life. The operation that he always performs is that which was introduced by Langenbeck, but it has also been associated with the names of Fergusson and Smith. It is important to remember that this operation does not merely consist in suturing the edges of the cleft, but a muco-periosteal flap is raised from the bones so as to allow the edges to come together. The mortality of his cases is noteworthy, for there has been no death in either series. With this may be contrasted the mortality of the flap operation. The operative mortality of the turnover flap operation is given at 12·5 per cent., and from this the advocates of that operation deduct 10·9 per cent., which they claim is the death-rate of children of that age, and as a result they obtain a mortality of 1·6 per cent. Such a method of calculating the mortality is, of course, absurd, and the fact remains that the operation death-rate of the flap operation is over 12 per cent., but how much more the real death-rate is cannot be ascertained. Mr. Berry then presented five cases which had been operated on by him, and in one case 15 years had elapsed since the operation. The patients all read or recited and the excellent articulation was obvious.

Mr. J. T. J. MORRISON (Birmingham) proposed a vote of hanks to Mr. Berry for his paper and for the convincing demonstration.

Mr. C. W. CATHCART (Edinburgh), in seconding the vote of thanks, said that while reading the reports of the recent debate in London he had felt in doubt as to which was the better method, but Mr. Berry's paper and demonstration had been convincing.

Mr. H. GILBERT BARLING (Birmingham) said that the flap method was not new; it had been used by Lawson Tait many years ago. It should be of great interest to keep a record of a hundred children with hare-lip from birth and follow them up so that we might know what mortality there was in such cases quite apart from operation. In his own operations he had often found that he had had some little trouble in closing a small hole left at the junction of the hard and soft palates.

Mr. FRANCIS W. GOYDER (Bradford) said that hitherto he had always employed the flap operation, but as a result of the paper he would have to change. He considered that the height of the palate had much to do with the defects of articulation in children with cleft palate.

Mr. W. MORLEY WILLIS (Nottingham) said that it could not be denied that the flap operation had a very high mortality, and this mortality was still more striking when it was compared with the absence of mortality in the other operation.

Mrs. F. M. DICKINSON BERRY (London) said that from her experience with feeble-minded children she did not think that a high arched palate had anything to do with a nasal voice.

Mr. BERRY, in reply, said that he considered that mobility of the soft palate was the most important factor for clearness of voice.

Mr. W. J. GREER (Newport, Monmouth) contributed a paper on

Fibromatous Tumours of the Mesentery.

He commenced by saying that these tumours were very rare; the first case was reported in 1824. Nothing is known of their etiology, the structure is fibrous, but in some cases it is possible that some malignant elements are present. The case which he had to report occurred in a man, 54 years old, who for nine weeks had noticed that there was a swelling in the abdomen near the umbilicus; it was smooth on palpation and dull on percussion. The tumour at the operation was readily enucleated and the patient recovered. On examination the tumour was found to consist of fibrous tissue. The operation death-rate of these tumours is very high—namely, 22 per cent. The largest tumour successfully removed weighed 40 lb. These tumours grow rapidly and they are not adherent to the abdominal wall, and that fact is of some assistance in the diagnosis. The operation may be very simple, but in some cases there is no small risk of injury to the blood-vessels of the mesentery.

Dr. ALEXANDER MACLENNAN (Glasgow) read a paper on

Fracture of the Scaphoid Bone.

He said that this fracture was not at all rare, for it was comparatively common, but it was usually not diagnosed, and it was generally called "sprained wrist." The mode of production was simple; it was produced by a fall on the flexed wrist, though it might also be produced by a fall on an over-extended wrist. A transverse fracture is the usual type. The diagnosis is generally made by means of X rays, for there is no essential deformity, though sometimes a swelling may be felt over the dorsum of the wrist. Crepitus is rarely present. The treatment should be massage, and as a rule operative treatment should be reserved for cases with obvious deformity. At the operation it may be found necessary to remove one or both fragments, and sometimes to wire the fragments. Rest for three months may be required. Skiagrams were shown exhibiting the broken bone.

Mr. JOHN PATRICK (Glasgow) pointed out that it was not very rare for the scaphoid bone to be formed from two centres, and there was a risk of mistaking a divided scaphoid for a broken bone. Therefore it was always advisable to examine both hands before making a diagnosis of fracture.

ANATOMY AND PHYSIOLOGY.

FRIDAY, JULY 28TH.

President, Professor THOMAS H. BRYCE (Glasgow).

Professor E. M. WACE CARLIER (Birmingham) delivered a paper on

The Physiology of Some of the Allyl Compounds.

The investigation of which this paper was the outcome was directed to determine if the world-wide reputation of the onion and the leek as therapeutic agents was justified. The experiments were conducted with different allyl compounds, and their effects were noted on frogs. Briefly, Professor Carlier's findings were that all the allyl compounds depress the respiratory centre and kill the animal by finally abolishing its activity. All the compounds investigated produced a fall of blood pressure. The isothiocyanate, C_3H_5CNS, proved the most toxic, and its toxic action was in all probability due to the isothiocyanate moiety, since phenyl isothiocyanate is also toxic. With the sulphide $(C_3H_5)_2S$ it is probably the allyl moiety which produces the effect, as ethyl sulphide is comparatively innocuous. The popular belief in the medicinal value of the active principle of the onion received no confirmation from any of the experiments.

Professor W. H. THOMPSON (Dublin) and Dr. D. FRASER HARRIS (Birmingham) took part in the discussion which followed the reading of the paper.

Kidney with Double Ureters.

Mr. J. E. S. FRAZER (London) gave a demonstration of Specimens of Kidney with Double Ureters. Two examples were exhibited, and the various degrees of the malformation commonly met with were discussed. Only a single opening into the bladder was present in both the cases demonstrated, but Mr. Frazer pointed out that the method of development of the metanephric bud would account for complete separation, and even for cases in which two kidneys existed on one side of the body.

Some further remarks on these anomalies were contributed by the PRESIDENT.

Demonstration of Dissections of the Orbit.

Dr. S. E. WHITNALL (Oxford) exhibited and demonstrated a very beautiful series of Dissections of the Orbit. These specimens illustrated many important and novel points in the anatomy of the globe of the eye and the lacrymal apparatus. A series of normal lacrymal glands was demonstrated, and Dr. Whitnall pointed out that in no case had he met with a complete separation of the two parts of the gland. Some dissections were made of the lacrymal sac and the tendo oculi internus; these preparations had a useful practical bearing on the surgery of the lacrymal sac, and Dr. Whitnall demonstrated that the main insertion of the tendo oculi passed behind the sac, the anterior attachment being comparatively unimportant. Other specimens shown were: (*a*) Dehiscence of the median orbital wall; (*b*) the external palpebral ligament and its real attachment to the tubercle on the malar bone; (*c*) the relation of the anterior ethmoidal cells to the orbital wall and lacrymal sac; (*d*) the capsule of Tenon displayed from the front. One specimen of more than usual interest showed absence of the ophthalmic artery and its replacement by an anastomosis with the middle meningeal artery. Dr. Whitnall also demonstrated dissections of the cavernous sinus made by removing the dura mater and displaying the sinus from its inner aspect; preparations of the remains of the retractor bulbi muscle in man; specimens showing the relations of the levator palpebræ superioris, and a cast of the orbit.

Dr. Whitnall was congratulated on the beauty of his preparations, and upon the many practical points in ophthalmic surgery which they demonstrated.

Mr. A. C. T. WOODWARD (Birmingham) read a paper entitled

Observations on the Foramina of Fibulæ in Man and Apes.

He discussed the typical condition and the departures from the normal which he had found in the examination of a large series of bones. By the aid of a model he demonstrated the production of the permanent direction of the foramen in typical cases.

The PRESIDENT joined in the discussion which followed, and expressed the hope that the model would help to make clear a point which was always rather a difficult one to explain to students.

The remaining papers on the programme being entirely devoted to physiological subjects, Professor BRYCE resigned the chair in favour of Professor CARLIER, who acted as President until the termination of the meeting.

Colour-Blind Margin of the Blind Spot.

Professor J. B. HAYCRAFT (Cardiff) gave a demonstration to show the nature of the Colour-blind Margin of the Blind Spot, explaining the mechanism of the instrument he had devised for charting the limitations of this area. He pointed out that in carrying out the tests it was necessary to secure an equal luminosity for all the colours employed, and he showed the method he had used for ensuring this. All colours so arranged passed first to white or grey before they became invisible at the blind spot, and this colourless margin could be readily mapped out for different eyes. Several charts were shown and commented on.

In the discussion which followed this paper Dr. F. W. EDRIDGE-GREEN (London) referred to the great utility of the method of securing uniform luminosity of the colours to be tested.

Demonstration of Rescue Apparatus Employed in Mines.

Dr. FRASER HARRIS (Birmingham) gave an interesting demonstration of Various Forms of Rescue Apparatus Employed in Mines, and discussed the results of a series of experiments carried out on a band of volunteers at the experimental mine attached to the University of Birmingham. These experiments were carried out under very severe conditions, and the hardihood of the volunteers who submitted themselves to the investigations was very much to be admired. The mine was flooded with smoke, its temperature was raised, its humidity was increased, and in every way the surroundings were made as realistic as was possible. In this atmosphere hard physical work was done, bags of sand, representing men, were dragged about, and all the stages of an actual mine rescue were rehearsed under peculiarly severe conditions. Dr. Fraser Harris drew attention to several practical defects in the types of apparatus employed, and pointed out that the comfort of the miner and his prejudices had to be considered in any scheme for actual work in times of emergency. All these details cannot but be of the greatest utility to the practical man, for when the apparatus is required it is in times of vital urgency, and no hitch that can be eliminated by careful experimental methods under realistic conditions must be overlooked. Dr. Fraser Harris pointed out the importance of a condition of syncope, which came on in some cases without any warning, so that the man simply fell out and was liable to be left behind in the darkened mine; and he suggested that men should be carefully selected for work in times of actual emergency.

Professor THOMPSON and Professor CARLIER joined in the discussion, and Dr. Fraser Harris was congratulated on the utility of the work which he had brought before the meeting.

Professor W. H. THOMPSON (Dublin) gave a paper on

The Nutritive Effects of Beef Extract.

The experiments, which were carried out in association with Dr. W. Caldwell and Dr. J. A. Wallace, were a continuation of those brought before the Association at its last annual meeting, and extended their scope to the study of the effects of beef extract on man. Two subjects were given a known diet to which a home-made beef-extract was added; at the termination of the experiment it was found that both subjects had gained in weight (in the one case an increase of 280 grammes, and in the other 503 grammes). Commercial beef-extract gave a lower proportion of increase (216 and 108 grammes respectively).

In the discussion which followed Dr. E. P. CATHCART (Glasgow) questioned the actual method in which this increase of weight was brought about, and suggested that a stimulating effect of the extract might account for the result found.

Professor RICHARD ANDERSON (Galway) also joined in the discussion.

Dr. EDRIDGE-GREEN (London) read a paper on

Tetra-chromatic Vision.

He pointed out that persons with tetra-chromatic vision constituted a border-line class in the subjects of defects of colour vision. Special provisions should therefore be made in carrying out any test for their fitness to pass examination for colour-blindness. Many of the tests at present employed

did not act uniformly on the tetra-chromatic, for there was no certainty of their acceptance or rejection under the conditions of the examination. He pointed out their special difficulty in dealing with blues, and demonstrated how tests could be arranged which determined their exact visual defect and eliminated the large element of chance which was present in the common forms of colour-blindness tests.

Professor HAYCRAFT and Professor ANDERSON discussed the paper, and Dr. EDRIDGE-GREEN replied.

DERMATOLOGY.

FRIDAY, JULY 28TH.

President, Dr. JAMES GALLOWAY (London).

Among the cases of dermatological interest shown before the meeting were the following;—

Dr. A. DOUGLAS HEATH (Birmingham): Chronic Lichen Planus in a man 25 years of age; Sycosiform Lupus in a man of 62 years, who had had it for 20 years; Molluscum Contagiosum of the Forehead in a girl, 19 years old, of six months' duration; Bazin's Disease on the legs of a girl (von Pirquet's test had been positive); and Ichthyosis Verrucosa in a boy 9 years old.

Mr. E. GILBERT SMITH (Birmingham): Lupus Vulgaris in a man of 23, who had had it for three and a half years (he had had 1/10000th of a minim of tuberculin weekly since Christmas, and he had much improved); Lupus Erythematosus in a woman, 73 years old, who had had it for 20 years; another case of the same disease in a woman of 28 of two years' duration, growing worse; and a case also in a woman of 44 years who had been benefited by X rays.

Dr. G. H. LANCASHIRE (Manchester) read a paper on

An Unusual Case of Cutaneous Pigmentation.

The patient was a woman, aged 31 years, who had had since childhood a pigmented area on the neck. She was a brunette. About last Christmas pigmented freckles appeared round this area, and in the course of the next four months spread down the neck to the left shoulder and upper part of the left arm in the deltoid region, and also on to the front of the chest wall to just beyond the middle line. Lancinating pains came on frequently during both the day and the night, and each paroxysm of pain appeared to be succeeded by the deposit of freckles in a fresh area. The patient appeared to be in good health, with no signs of organic disease. A medicine containing bromide was prescribed, and locally menthol oil was applied. The pains soon subsided, and fresh pigment ceased to be deposited. Fairly rapid absorption of the pigment which had previously been deposited soon set in. Dr. Lancashire pointed out the resemblance in the general features of this case to herpes zoster.

Dr. H. G. ADAMSON (London) suggested that the condition was in part congenital.

Dr. J. H. SEQUEIRA (London) suggested that the pigmentation might have been due to some hot applications to the part.

Dr. ADAMSON read a paper on

A Case of Sporotrichosis.

He mentioned that the disease was very little known in this country, though it was not unlikely that it was more common than might be thought, for it was by no means improbable that many cases were undiagnosed, as it gives rise to ulcerations which have a very great resemblance to those resulting from gummata. He gave a *résumé* of the literature of the subject, and he pointed out that the lesions were not confined to the skin, but in some cases might also be found affecting the mucous membrane of the throat; it might affect the eye and deposits might occur in the testis. The organism is easily grown and can then be recognised readily, but it is rarely possible to find the organism in smears. The disease occurs in the rat and in the dog, and it is much more common in North America than in this country. For a long time the disease has been known there, and it was called pseudo-glanders, and it was recognised that it could be caught from horses. Cultures grow readily on glucose-agar or on potato. The swelling is made up mainly of mycelium, singly or in bundles, and giant cells are present. The size of the nodules is generally about that of a marble or a little larger. The nodules break down and form ulcers. The diagnosis must not be allowed to depend on examination of the pus from an ulcer, for the organism may not be discoverable, but a culture should always be made. In the treatment large doses of iodide of potassium exert a very beneficial effect.

Dr. R. CRANSTON LOW (Edinburgh) showed a wax model of a case of Sporotrichosis, and also a culture which had been made from the pus from the same case. He also exhibited several lantern slides showing the appearance of sections of the nodules. In appearance a culture of sporotrichosis is midway between ringworm and actinomycosis. The patient inoculated his finger a year ago, and in a week the condition had commenced to spread upwards, the lower lesions having a tubercular appearance, while the upper lesions had a syphilitic appearance. The diagnosis is really made from the culture, but it is important to take the culture before any iodide of potassium has been administered, for a single dose of the iodide may be sufficient to destroy the fungus.

Dr. R. STOPFORD TAYLOR (Liverpool) read a paper on

Some Practical Observations on the Treatment of Eczema.

He considered that eczema was due to the action of a local irritant, but that it was frequently associated with disease of one or other internal organ, and it was kept up by the original or another irritant. He described the form of dressing which he employed. He takes a piece of wetted lint, and then puts the ointment or paste on the smooth side of the lint and covers it with a piece of butter-cloth, which is placed next the skin, and sometimes a piece of gutta-percha tissue is placed outside all. In acute cases this dressing may need changing twice daily, but in chronic cases less frequent dressing will be quite sufficient. He laid stress on the importance of not allowing any interval to elapse between one dressing and another. The wet lint and the butter-cloth are employed because they allow drainage.

Dr. LOW expressed the opinion that many eczemas are seborrhœic in origin, and therefore he had a high opinion of the value of sulphur in the treatment of these forms of the disease.

Dr. ADAMSON did not consider that eczema was microbic in origin. In treatment the main point was to protect the part from external irritants.

The PRESIDENT showed some lantern slides illustrating some interesting cases. The first case was that of a woman who had suffered from syphilis in early life. She developed gangrene of the finger-tips of both hands; the gangrene followed a syphilitic affection of the blood-vessels. A section of the posterior tibial artery from a similar case was exhibited showing the thickened wall. The vein in a similar condition was also shown; it is often not recognised that the veins are affected equally with the arteries. The President also showed a slide of a case of Dermatitis Repens in which he had found that there was very definite disease of the wall of the blood-vessels.

Dr. J. GOODWIN TOMKINSON (Glasgow) read a paper on

Pruritus Vulvæ.

He referred especially to a case of a pregnant woman who suffered very severely from pruritus of the vulva. He maintained that the disease is not merely a neurosis, and that this is shown by the pigmentation of the skin which is present. In the case mentioned the itching was so intense as to interfere with sleep, and it was affecting her mind. The ordinary sedatives had no effect in relieving the itching. At last he applied X rays, with the result that the itching was completely cured.

DISEASES OF CHILDREN.

FRIDAY, JULY 28TH.

President, Dr. OTTO J. KAUFFMANN (Birmingham).

The proceedings in this section opened with a most interesting demonstration on

The Treatment of Scoliosis

by Mr. PAUL B. ROTH (London), who stated that there were six different kinds of curves occurring in scoliosis which might be represented graphically by certain signs. He exhibited several cases of different varieties of scoliosis and demonstrated on a patient the particular exercises employed. There were ten different exercises, the actual carrying out of which took about 20 minutes. In a paper read later Mr. Roth gave further details of a series of 1000 consecutive cases of scoliosis, from a study of which he had formed the

following conclusions: 1. Scoliosis was almost essentially a disease of females, 84 per cent. of the cases having occurred in that sex. 2. It was a disease of adolescence; 86 per cent. of cases were between 6 and 20 years old. 3. The frequent occurrence of scoliosis in members of the same family pointed to hereditary transmission. 4. The bad position assumed in writing, a delicate constitution, and too rapid growth were largely responsible for very many cases. 5. Difference in the length of the leg was not a common cause of scoliosis, having been present in only 21 of the 1000 cases. 6. Pain was a frequent symptom. 7. Flat-foot was a very frequent complication. 8. Attention to dress before any treatment was commenced was absolutely essential. 9. Treatment should never be commenced until a record of the osseous deformity had been made. 10. Treatment by posture and exercise entirely arrested the increase of bony deformity in all but 5·5 per cent. of observed cases, and in 3·3 per cent. slightly decreased it. Cure of the bony deformity could not be expected, but in 83 per cent. of cases a permanent practical cure was brought about. He did not use mechanical supports of any kind.

In the discussion which followed Mr. G. HEATON (Birmingham) asked how far bicycles could be regarded as a cause of scoliosis in young women, and whether instruments should ever be employed.

Dr. R. B. MCVITTIE (Dublin) emphasised the importance of medical supervision of school children.

Mr. ROTH replied that he regarded bicycling as useful in scoliosis, and that he had never met with a case in which instrumental supports were necessary.

Dr. F. E. BATTEN (London) read a paper on

The Epidemiology of Acute Poliomyelitis,

in which he brought forward four propositions: 1. That poliomyelitis was an infective disease, transmissible from man to monkey and from monkey to man. The virus had not yet been stained nor seen under the highest power of the microscope. It was obtained from the mucous membrane of the nose of a monkey which had suffered from the disease, and was obtained in an active condition six months after the date of infection. The virus was strikingly similar to that of rabies. 2. That poliomyelitis was an epidemic disease was proved by the numerous epidemics recorded during the last 30 years in Sweden, Norway, Germany, Austria, France, America, and Australia. In the northern hemisphere epidemics always had the greatest prevalence during July, August, and September, and children during the second and third year of life were most commonly affected. Infection through schools had occurred, but by no means frequently. 3. That the disease occurred in an epidemic form in England was shown by the report of an epidemic of 8 cases at Upminster in 1908 (F. Treves) and an epidemic of 37 cases at Bristol in 1909 (Parker). During 1910 epidemics were reported at Carlisle, where the disease had been made notifiable, and at other places. 4. Poliomyelitis being an infective disease should be treated as such, and the infected person as well as the contacts should be isolated. The period of incubation was probably less than six days; the period of isolation of the infected should not be less than three weeks. The disease was not so infective as scarlet fever or diphtheria, and the isolation of contacts should have a marked effect in diminishing its incidence. There was some experimental evidence to show that the administration of urotropin tended to prevent infection and diminish the virulence, if not to destroy the virus.

Dr. R. D. RUDOLF (Toronto) commented on the tendency of the disease to vanish with the appearance of cold weather, arguing the probability of an animal agency in carrying the disease.

Dr. L. G. PARSONS (Birmingham) described an epidemic of 32 cases observed in London in 1909, and stated that the cold weather of that summer had proved no bar to the spread of the disease.

Dr. R. H. MILLER (London) asked how far epidemics should be regarded as water-borne.

Dr. BATTEN replied to the various speakers.

Professor STOELTZNER (Halle) read a short paper on

Oxypathy and Uric Acid,

in which he stated that oxypathy was as common in children as gout was rare.

Mr. H. TYRRELL GRAY (London) read a paper on

Indications for the Employment of Spinal Anæsthesia in Abdominal Surgery.

He considered that the value of spinal anæsthesia lay largely in the fact that its employment was an adaptation of the principle of "nerve blocking" over a large area. Experience had shown that with proper selection and in competent hands spinal anæsthesia was as safe as general anæsthesia. The question at issue was, not the relative merits of the two methods as anæsthetics, but rather a consideration of which principle—that of nerve blocking or of the suspension of the activity of the higher centres—was the best suited to any particular case. A few general principles were considered. (*a*) Age. In early life spinal anæsthesia was of the greatest assistance to the surgeon. It might be accepted that the younger the child the more suitable was the case for spinal anæsthesia. (*b*) The physique of the child was an important factor in deciding between the methods. (*c*) State of health of the patient. The following conditions peculiar to the abdomen were dwelt on. With spinal anæsthesia muscular relaxation was so complete that thorough access to the different regions of the abdomen was possible with a far smaller incision than under general anæsthesia. The intestines were found comparatively collapsed, and did not exhibit the same tendency to protrude from the wound as under general anæsthesia. Manipulation was consequently minimised, the rapidity of operation increased, and there was less tendency to resulting distension. This latter was a most important point. It was in acute abdominal lesions that spinal anæsthesia was most often indicated in young children. These lesions were roughly classified into three groups: 1. Infective lesions of the peritoneum. Here the chief indications for spinal anæsthesia were the degree of toxæmia, the age and physique of the patient, the degree of intestinal distension, and the degree of urgency for maximum speed with the minimum exposure and violence. 2. Intestinal obstruction. In most such cases, especially in intussusception, operation in children below two years of age should be done under spinal anæsthesia. 3. Injuries. If collapse from hæmorrhage was profound, spinal anæsthesia was usually contra-indicated. This did not apply to collapse from shock. The frequent necessity for extensive exploration in these cases would often render spinal anæsthesia advisable. In perforating injuries, the main indications for its use were based on the situation of the wound, the nature of the instrument, and the condition of the intestine.

Mr. S. G. BARLING (Birmingham) dwelt on certain of the risks and uncertainties of the method, which had been tried in Birmingham but given up.

Dr. R. MILNE (London) read a paper on

Measles: its Treatment and Prevention.[1]

His method consisted in destroying the germs of the disease by sterilising the pharynx, mouth, and nose with carbolic oil, and inunction of the whole body with eucalyptus oil. The method was equally applicable to scarlet fever. Dr. Milne described the success of his treatment at Dr. Barnardo's Homes.

Dr. J. BRUCE-BAYS (Peterborough) questioned the utility of preventing school children catching measles.

Dr. W. P. KENNEDY (Bath) and Dr. A. CANT (Coleshill) having spoken, Dr. MILNE, in reply, said that in over 800 cases of measles and scarlet fever treated he had had no complications and no deaths.

The business of the section concluded with a paper by Mr. F. W. GOYDER (Bradford) on

Modifications and Extensions of Owen's Operation for Hare-lip,

in which he described the various steps of this operation, which had been devised in order to supersede the vertical scar operation, which he considered to have many disadvantages. The ideal to be aimed at, in his opinion, was to have symmetrical nostrils, the lip must be even, thick, and longer at its free border than at its attachment, the scar should be inconspicuous, and the line of suture broken and not straight. The modifications he recommended were believed to result in these improvements, and were performed without any loss of tissue whatever.

[1] See THE LANCET, April 22nd, 1911, p. 1070.

ELECTROTHERAPEUTICS AND RADIOLOGY.

FRIDAY, JULY 28TH.

President, Dr. HUGH WALSHAM (London).

The proceedings were commenced by Mr. J. HALL-EDWARDS (Birmingham) who read a paper to open a discussion on

The X Ray Treatment of Ringworm.

He said that whilst ringworm of the scalp is amenable to ordinary treatment there is perhaps no disease in which so many and varying methods have been adopted with so small an amount of success, and up to the present we have no routine method at our command. During the last few years the disease has been brought into special prominence from the fact that its existence entails a monetary loss to the various school boards, inasmuch as the Government grant depends upon the regular attendance of the pupils. In some of our large cities special ringworm schools have been opened, and in a few a determined campaign against the disease has been started. Whilst the disease is far less common in this country than it is upon the continent, it is more common than is usually believed to be the case. Where a careful examination of the heads of the children is made the disease is found to exist in many unsuspected instances. It is generally agreed that epilation, in which both the diseased hairs and the spores are got rid of at the same time, is the best way of treating the disease. To bring about epilation by the older methods is both difficult and dangerous. In the X rays, however, we have at our command a method which is safe and certain. When efficiently and carefully carried out a cure can be secured in from six to eight weeks, as against 27 months, which was the average as calculated by Sabouraud. The objections which have from time to time been raised against X ray treatment are: that it necessitates special and expensive apparatus; that its proper performance requires special knowledge; that the application of the rays to the head is dangerous; and that the hair may not grow again. Although the initial outlay for the apparatus is great, it is more than compensated for by the immense saving in time which results in its use. Secondly, if treatment is to be successful special knowledge is always necessary. As to the method being dangerous, no case of permanent injury has been reported out of the hundred of thousands that have been treated. During the last two or three years our methods of measuring the dosage have been vastly improved and the special "treatment tubes" rendered more efficient. In choosing apparatus for radiotherapy it is of paramount importance that the group should be so arranged that the output of radiations shall be constant both in intensity and quality.

Dr. REGINALD MORTON (London) thought that while a few cases of partial baldness had undoubtedly happened in the more or less remote past of X ray chronology, such accidents were now of such rarity as to be negligible, and he thought that the time had come for those dermatologists who did not approve of the X ray treatment of ringworm to cease dangling these ancient errors before our eyes. So far there was no evidence to show that the method had any influence upon the development of the juvenile brain. He fully concurred in Mr. Hall-Edwards's statement that the X ray method was the best, safest, and easiest means of epilation known at present.

Dr. J. A. CODD (Wolverhampton) also agreed that the X ray method was the best and safest under existing conditions. The hair should be cut short beforehand. He doubted whether the use of antiseptics did much good.

Dr. J. DELPRATT HARRIS (Exeter) had found heads with dark curly hair the most difficult to epilate successfully, and of the different varieties of tinea the pustular form was the most difficult to cure.

Dr. G. HARRISON ORTON (London) advised care and the use of antiseptic ointment while waiting for the hairs to fall out; also to be very careful to avoid exposure to direct sunlight, which with the X ray produced severe reaction at times.

Mr. HALL-EDWARDS, in the course of his reply, spoke strongly against the practice of shaving the head. The hairs should be left long enough to be pulled out.

Dr. FRANZ NAGELSCHMIDT (Berlin) read a paper on

The Diathermic Treatment of Circulatory Disorders.

This electrical application is one by means of which several ampères of current can be made to traverse the whole body. So far as the circulatory system is concerned, its chief effect is to cause a dilatation of the capillaries and small arterioles, which is followed by a fall in blood pressure amounting to several millimetres of mercury. He quoted a number of cases in which high tension was rapidly relieved, and it was found after a series of applications that the reduction of blood pressure acquired a degree of permanence. Good results had also been obtained in angina pectoris, presumably due to the dilatation of the coronary arteries, and with a course of treatment the paroxysms became less severe and frequent.

Mr. HALL-EDWARDS thought the term "high frequency" ought to be abolished in this connexion in favour of the term "diathermy," which described it more accurately.

Dr. W. B. KNOBEL (Belbroughton) read a paper on

The Differences in the Appearance of Phthisical Chests as shown by the X Rays Before and After Open-air Treatment.

Dr. Knobel is fortunate in having his cases under observation for long periods of time and at all stages of the disease. He considered the relative dulness of an apex, for instance, and its failure to "light up" properly on inspiration to be the earliest sign of phthisis, and in many cases this could be made out before any definite physical signs were obtainable. He also brought out an important fact that in cured or arrested cases the X ray appearances were not necessarily improved, this being due to the presence of the fibrous tissue effecting the repair. At the same time there were differences that could be detected by skilled examination. The paper was illustrated with a series of lantern slides.

The PRESIDENT agreed that the dull apex which refused to brighten up properly on inspiration was the earliest and most certain sign of the advent of phthisis. This sign could be made out before any clinical signs could be elicited.

Mr. HALL-EDWARDS spoke of the value of instantaneous radiography in getting a record of the earliest infiltration, especially of the bronchial glands.

Dr. HARRISON ORTON pointed out the necessity for being in a darkened room for at least ten minutes before looking at a chest, and this was particularly necessary for those who were not engaged in this class of work.

Dr. F. HERNAMAN-JOHNSON (Bishop Auckland) read a paper on

The Treatment of Certain Diseases of the Alimentary Tract by X Rays, Combined with the Internal Administration of Metallic Silver.

He said that rays sufficiently penetrating to reach the interior of the alimentary tract are of small value therapeutically; their very quality of "hardness" allows them to pass through the tissues with a minimum of disturbance. The discovery of "secondary X radiation," announced by Sir J. J. Thompson at the British Medical Association annual meeting in London last year, has, however, made it possible to convert hard rays into soft, physiologically active radiations. Silver, for example, when excited by a hard bulb gives off rays which, judged by the amount of body tissue required to absorb them, closely resemble the *beta* rays of radium. These secondary rays are, so to speak, *specific* to a given metal; thus, the same metal always gives off the same quality of ray, no matter what the nature of the primary beam. Precipitated silver—a slate-coloured, tasteless powder—can be taken orally without danger. Suppose it is desired to treat a lesion of, say, the ascending colon. By means of a "bismuth meal" and the fluorescent screen we can ascertain how long food takes to reach the part. For the bismuth meal is now substituted a "silver meal" (℥ii argent. precip. in a pint of bread and milk). By properly timing an X ray exposure we can produce a radium-like radiation in the interior of the gut at the site of the disease. An application of 10 minutes three times a week, tube 10 inches from skin, penetration 8–9 Wehnelt current in secondary 0·4 milliampère, appears to be well tolerated; but no hard-and-fast rule can be laid down. Exposures should be made from varying angles. Good results have accrued in ulceration of the cæcum, duodenal and gastric ulcer, and tumour of the pylorus, possibly malignant. That a definite secondary radiation is produced under the above conditions can be demonstrated by photographic experiments. As regards its therapeutic activity, we cannot actually see into the bowel, but if an emulsion of precipitated silver in olive oil be injected beneath a cancerous nodule in the skin, involution

takes place much more rapidly than under ordinary X ray treatment.

Mr. MAURICE R. J. HAYES (Dublin) had employed a similar method in a case of cancer of the rectum. He placed the ointment of oxide of zinc *in situ* and then irradiated the part. The case was improving, but still under treatment. He had also employed the same method in the treatment of an obstinate rodent ulcer.

Mr. HALL-EDWARDS referred to experiments with secondary radiation from metal discs which had been published previously.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

FRIDAY, JULY 28TH.

President, Mr. FRANK MARSH (Birmingham).

Professor ONODI (Budapest) and Dr. ADOLPH BRONNER (Bradford) opened a discussion on

The Diagnosis and Treatment of Conditions of the Accessory Nasal Sinuses Giving Rise to Oculo-Orbital Symptoms.

Professor ONODI first described the oculo-orbital symptoms in manifest and latent accessory sinus disease. Next he dwelt upon the diagnostic value of central scotoma, enlargement of the blind spot, narrowing of the field of vision, the ophthalmoscopic appearances, and the unilateral symptoms of oculo-orbital involvement. He gave the indications for treatment in manifest accessory sinus diseases. Further treatment in latent accessory sinus disease by bleeding and relief of pressure was mentioned. He concluded with a reference to post-operative visual disturbances and blindness. Professor Onodi exhibited a series of photographs of specimens illustrating the anatomy and pathology of the subject under discussion. The collection of photographs exhibited, it was announced, had been presented by Professor Onodi to the University of Birmingham.

Dr. BRONNER said that the commonest affections of the accessory nasal sinuses giving rise to oculo-orbital symptoms were: (1) empyema, following rhinitis, often due to scarlet fever, measles, influenza, erysipelas, and typhoid fever; (2) diseases of the bone, secondary to empyema, due to syphilis or tuberculosis; (3) growths; and (4) wounds. There were often congenital defects of the bone which facilitated the spread of disease from one sinus to another, or to the brain and orbit. Transillumination and X rays were useful for diagnosis, especially the latter in cases of frontal sinus disease. X ray treatment should be tried in some cases. In cases due to syphilis energetic treatment was necessary. In tuberculous cases tuberculin might be injected. Vaccine, and, if possible, an autogenous vaccine, or serum treatment should be tried in all severe cases. In many cases several of the accessory nasal sinuses were involved, and the treatment of one sinus alone was useless. In empyema of the maxillary antrum the most trustworthy method of diagnosis was to wash out the antrum through the nares. As all, even the most trivial, nasal operations could give rise to severe local and general affections, the patient should always remain in bed and be watched for a few days. If there is a growth of the maxillary antrum, or much diseased bone, as in a case of tuberculosis, the upper jaw should be removed. These operations are most successful. In empyema of the frontal sinus the pain over the region affected may be due also to disease of the maxillary antrum. When the frontal sinus is affected, the pain is more severe and intermittent. The upper or inner wall of the orbit is often painful on pressure. If the orbit is affected an extensive operation should be performed, as in most cases the anterior ethmoidal cells are also diseased. If there is optic neuritis, or cerebral symptoms, the posterior wall of the frontal sinus should be opened up and the brain exposed. If the symptoms are not urgent it is always advisable to try intranasal treatment first. There is always a danger of disease of the diploë after the external operation on the frontal sinus. In empyema of the ethmoidal cells there is often pain on pressure on the inner wall of the orbit with crackling noise. Periostitis of the orbit is often mistaken for disease of the lacrymal sac. Operation should be performed intranasally and, if necessary, extranasally. A large incision should be made extending below the lacrymal sac. In empyema of the sphenoidal sinus often there are no symptoms. In all cases of obscure retrobulbar neuritis with slight unilateral optic neuritis and meningitis the sphenoidal sinuses should be carefully examined and explored. The posterior ethmoidal cells are also frequently involved. This is very important because of the position of the optic nerve. Central scotoma may be due to congestion of the veins of the optic nerve or to toxins. Meningitis and cavernous sinusitis are more frequent than disease of the orbit.

Dr. P. WATSON-WILLIAMS (Bristol) demonstrated a suction syringe for the diagnosis of sinusitis of the maxillary antrum. He stated that the operation which he had devised for treatment of suppuration of the frontal sinus and the adjacent cells was not more extensive than that devised by Professor Killian: it was another method of obtaining the same end. Once the operation was commenced one must continue and cannot change from one operation to the other. The early recognition of nasal accessory sinus disease was important.

Mr. H. TILLEY (London) considered that the association of nasal sinus disease with eye symptoms was overstated. In the majority of cases referred to him in hospital practice he was not able to help the ophthalmic surgeon. As regards vaccine treatment, provided an autogenous vaccine could be obtained, it was of value in a recent case with a pure infection. Vaccine treatment, in his experience, was not of value in chronic cases of mixed infection. He recommended the tincture of iodine in a saline solution for washing out the antrum. After some experience he had given up the intranasal method of treating suppuration of the maxillary antrum and had gone back to the operation through the canine fossa.

Mr. W. S. SYME (Glasgow) discussed the relationships and the part played by the sphenoidal sinus in producing the symptoms under discussion.

Dr. N. C. HARING (Manchester) was desirous of having cleared up the point whether oculo-orbital changes occurred in very slight cases. In his experience he had only seen them in cases in which the nasal disease was very gross. Should a case be due to tuberculosis a combination of human and bovine tuberculin he considered to be a more trustworthy test; of course, the result might be evidence of tuberculous disease in some part of the body other than the antrum of Highmore.

Mr. B. SEYMOUR JONES (Birmingham) spoke of latent disease of the accessory sinuses and of cases presenting ocular symptoms with no obvious nasal disease. If the eye symptoms had persisted for some four or six months ocular relief was difficult; he therefore urged an early investigation of the nose.

Dr. G. F. C. WALLIS (Shrewsbury) considered that a very large majority of the cases of sphenoidal sinus disease was associated with a contracted field of vision.

Dr. DAN MCKENZIE (London) inquired how they were to decide whether any disease of the sphenoidal sinus existed in the cases with ophthalmic symptoms, which might be referred to them, without exposing the sphenoidal sinus.

Dr. W. JOBSON HORNE (London) expressed the opinion that sphenoidal sinus disease was more often diagnosed than it existed. He fully agreed with the speaker who said that vaccine treatment was only of service in recent cases with a pure infection and in which an autogenous vaccine was obtainable. Those cases they could cure without a vaccine. He urged a careful investigation of the large posterior ethmoidal cell, the opening of which was in juxtaposition to that of the sphenoidal sinus, before arriving at a diagnosis of disease in, and before laying open, the latter cavity.

Dr. A. BROWN KELLY (Glasgow) had examined a large number of cases referred to him on account of ocular symptoms without finding a nasal condition to account for the same.

Dr. H. J. DAVIS (London) also narrated an experience similar to the previous speaker.

Dr. L. H. PEGLER (London) and Mr. H. H. B. CUNNINGHAM (Belfast) also took part in the discussion.

The PRESIDENT summed up the discussion. One question, he said, that had been raised was whether they should lay open and explore the posterior ethmoidal and sphenoidal cells in cases which presented no nasal but oculo-orbital symptoms. He considered that they ought not to go to that extent. Vaccines were no good without sufficient drainage; if there was sufficient drainage then vaccines were not required. The departures from the normal anatomy were intricate, hence their difficulties and the dangers resulting from blindly curetting the regions.

Professor ONODI replied. He urged the importance of examining the eye for scotoma and enlargement of the blind

spot. The optic nerve at times passed through the sphenoidal sinus or through the sphenoidal and the posterior ethmoidal cells. The blood-vessels of the optic nerve were associated with the blood-vessels of the sphenoidal sinus and the posterior ethmoidal cells, and therefore infection might readily spread to the optic nerve. For these reasons he considered it better to open the sphenoidal sinus, although some cases might recover without that operation.

Dr. BRONNER, in his reply, said that many cases could not be diagnosed owing to a narrowing of the nostril due to deflection of the nasal septum and other intranasal conditions; possibly that accounted for some of the negative results of the nasal examination of cases referred to them by ophthalmic surgeons.

Dr. DAN MCKENZIE read a paper entitled

Submucous Resection of the Nasal Septum.

One indication for the operation in addition to the relief of the nasal obstruction was the removal of the effects secondary to the obstruction. When sepsis followed the operation it not uncommonly occurred in the form of follicular tonsillitis. In the removal of the vomerine portion, he advised against any twisting manipulation of the part. In 130 cases he had had 16 perforations of the septum. Perforations led to adhesions far back. Perforations did not, in the majority of cases, happen at the operation itself, but subsequently. He mentioned the troublesome sequelæ to the operation.

Mr. SYME inquired about attempts to repair perforations.

Dr. JOBSON HORNE said that the operation had been in vogue for some five or six years, and the time had arrived, he considered, for a stock-taking of the results. He thought the excellence of the results had been prematurely stated in the past.

Dr. BRONNER and Mr. TILLEY did not look upon a perforation as a tragedy or a disaster.

Dr. PEGLER agreed with what had been said about perforating the septum of the nose.

Dr. A. WYLIE (London) concurred with the views expressed by Dr. Jobson Horne.

Time did not permit of further discussion.

Dr. HUGO FREY (Vienna) gave a lantern demonstration of coloured photographs of sections illustrating the Anatomy and Suppuration of the Internal Ear.

MEDICAL SOCIOLOGY.

FRIDAY, JULY 28TH.

President, Dr. GEORGE REID (Stafford).

Discussion of various methods of carrying out the medical inspection of school children occupied the section at its concluding session.

Dr. S. BARWISE (Duffield, Derby) gave some notes on

School Medical Work in Derbyshire.

He said that finding only a small percentage of the cases revealed by medical inspection obtained treatment, the attempt was made to form a provident club for the whole county. There were 90,000 children on the roll, and circulars were addressed to the parents asking them if they would be prepared to pay 1*d.* per month, or 8*d.* per year in families where there were two or three children, to insure for the examination of their children's eyes, the provision of spectacles, the provision of preventive dentistry, and the treatment of ears, and of adenoids and tonsils. The education committee was prepared to add to the sum thus obtained sufficient to pay for the cost of treatment. The replies to the circular showed that only 40 per cent. of the parents of the county were willing or able to contribute the suggested sums, and it was felt that the number was insufficient to justify any further action in the direction of a complete scheme. A portion of the county having a school population of 20,000 and enjoying better wage conditions was then tried, but the percentage of favourable replies was very little better. A club was about to be started in a limited area, round Claycross, the school children numbering 2000. Treatment would be provided by whole-time officers, as general agreement amongst private practitioners had not been obtained. Dr. Barwise said that he and his committee were satisfied that a provident basis was the proper one on which to provide treatment.

Mr. J. PRIESTLEY (Stafford), in a paper on

General Aspects of School Medical Treatment,

made the preliminary point that it would be quite utopian to hope that every school child could be examined with the microscopic care of a life assurance doctor. Supposing the school inspection staff were doubled or trebled, and each child given a life assurance examination, he doubted whether 1 per cent. more remediable cases would be found than were found now. At any rate, an absolutely complete and searching examination was out of the question in the seven or eight minutes' inspection of each child allowed to them. The illnesses discovered at medical inspection were limited to a few conditions which did not immediately disable the child. All the other illnesses to which childhood was heir escaped the view of the school medical inspector, for the reason that they incapacitated at once, and the children were to be found at home. The prevalent diseases which did come to the knowledge of the school doctor were: (1) pediculosis and skin diseases; (2) adenoid obstruction with deafness and ear discharges; (3) teeth; (4) defects, mainly optical, of the eye; (5) a few orthopædic troubles with which might be associated hernias and cleft palate; (6) stammering, &c.; (7) a few cases of educational difficulty, such as word-blindness; (8) all but the very worst grades of mental deficiency and imbecility; and (9) various grades of debility. It would be noted at once how heterogeneous these things were and how remote several of them were from the daily experience of the general practitioner; they were specialists' work. What were the conceivable methods of dealing with this array of ailments? First, the family doctor doing what he could himself and passing on the patient to various specialists for the things he could not do. On this the obvious comment was, though it would be unfair to press it too far, that the family doctor, where he came in at all, had already been at work and had not called attention to these conditions, or, at any rate, had not succeeded in securing treatment. The drawbacks to treatment through hospitals, which constituted the second alternative, were that hospitals were often too far away from the schools; it was inconvenient to have to attend separate institutions for different ailments; hospitals were intended for more serious and complex cases. After a period of hesitation, in which he inclined to the view that the ideally perfect plan would be to link up the general practitioner in the work, he had come to the conclusion that the school clinic and a special school doctor would do the work more thoroughly, intelligently, and economically. It was with a feeling of sadness that he had reached this conclusion, for he had felt resentment at the growing tide of specialism, and regretted the displacement of the family doctor, who knew his patient if he did not very completely know all his patient's diseases. But the tendency to specialism was the tendency to division of labour; they could no more stem one than the other. There was much to be said for the special school doctor. The overwhelming argument in favour of the school clinic was its simplicity of administration and the saving of time to all concerned. The question who should staff the clinic was a subordinate one. He was in favour of treatment being in other hands than those that managed inspection. There should be, however, mutual assistance and friendly coöperation. The director of a school clinic might well be a specialist in children's diseases or a general practitioner who had made a special study of school inspection questions. It must be recognised that the school clinic was only immediately practicable in towns; in the country it was, for the moment, out of the question. Mr. Priestley refrained from going into the question of whether treatment should be free of cost to the parents or not.

Dr. G. A. AUDEN (Birmingham) dealt with

Medical Certificates to Justify Absence from School.

He referred to the difficulty that a certain number of excuses for non-attendance on medical grounds were obtained by parents who had wilfully withheld salient facts. A case of substitution had even come to his notice. There were also a certain number of certificates given without due consideration of the facts of the case, and even without personal inspection of the child who was certified. Children were frequently excluded from school on medical grounds on a rule-of-thumb principle. The child's home conditions had not been taken into account, and it had been deprived of the advantages of school life to be condemned to spend the day

in a sunless alley—an environment in many cases more detrimental to the child's health than attendance at school would have been. Dr. Auden mentioned that in Birmingham large numbers of children had been excluded from school by certificate on account of myopia, but he was glad to say that since a special class for these children had been established medical practitioners had come to appreciate the position, and now, instead of certificates of exclusion, suggestions were received that a particular case was suitable for the special class.

In the subsequent discussion the PRESIDENT gave some particulars of the inauguration of a school clinic in Sheffield, culled from a paper by Dr. Ralph P. Williams, school medical officer of Sheffield, who was unable to be present to read his paper.

Dr. E. H. SNELL (Coventry) urged that only after very careful consideration was a local authority justified in undertaking medical treatment of school children. There were too many existing agencies for treating disease, and a large amount of overlapping. Nevertheless, it must be admitted, having regard to practical experience, that there were certain ailments of school children which were not adequately dealt with through existing agencies. Among these were affections of the eyes, ears and throat, teeth, and ringworm. In his own district most of the cases found their way to the hospital, and there was some difficulty when the hospital asked for a subscription from the local authority, and the oculist engaged at the hospital objected to doing public work for nothing. The council then decided to employ its own oculist and also an ear and throat specialist.

Dr. R WALLACE HENRY (Leicester) thought it would be unfortunate if medical treatment schemes were pressed forward too rapidly in view of the new insurance legislation. It was probable that in a few years women and children would be brought within the scope of the Insurance Bill. Dr. Henry denied, on the basis of experience in Leicestershire, that general practitioners were not in a position to undertake school medical work.

Dr. J. B. BRIERLEY (Manchester) and Dr. ELIZABETH J. MOFFETT (Stafford) put in a plea for clinics.

Dr. F. E. WYNNE (Leigh, Lancs) protested against the exclusion from this work of the general practitioner. He was the proper person to do it, and Dr. Wynne hoped to see school clinics staffed by the general practitioners of each district. Of a large number of children inspected by him 50 per cent were satisfactorily treated by general practitioners, who were more competent to do the work than a young person just turned out of the hospital or the public health laboratory The latter were supposed to be specialists in eye, ear, and throat work and mental diseases at the age of 24 and at a salary of £250! Dr. Wynne also touched on the question of how far the various remedial measures now being pressed forward would bring about the survival of the unfit.

Dr. J. C MCWALTER (Dublin) also enlarged on this point, and the readers of papers having replied, the proceedings of the section terminated.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

FRIDAY, JULY 28TH.

President, Dr. EDWIN GOODALL (Mental Hospital, Cardiff).

Mr. R. V. STANFORD, M.Sc., Ph.D. (Cardiff), read a short paper on the

Need for Chemistry in the Investigation of Mental Disease.

Mr. Stanford devoted his paper to a plea for the desirability of chemical research in mental disease. Chemistry will show us the mechanism of the results of clinical and pathological investigation, and the importance of the subject cannot be overestimated. A wide field for research in this respect has been opened up, but not yet actually entered on. Mr. Stanford spoke from the standpoint of the pure chemist, and declared that the expert chemist has a significant part to play in the developments which mental science is yearly making.

Dr. HENRY DEVINE (Long Grove Asylum, Epsom) and the PRESIDENT discussed the paper, both remarking on the advisability of having highly skilled chemists attached to mental institutions where research on modern lines is being prosecuted. The President said that he was struck by the general vagueness and inaccuracy in the employment of what are really chemical terms that vitiated the work of many who are engaged in research in connexion with mental disease.

Dr. DEVINE then read a short paper on

The Significance of Some Confusional States,

pointing out the analogies between day dreams and reveries, and many confusional conditions, and illustrating his remarks by appropriate clinical instances.

Dr. WINIFRED MUIRHEAD (Morningside Asylum) read a communication on

The Wassermann Reaction in the Blood and Cerebro-spinal Fluid in Insanity, and Examination of the Spinal Fluid.

The paper may be summarised as follows: 1. The lecithin and cholesterin antigen has been found a more sensitive antigen than crude extract of ox liver or guinea-pig liver. 2. Excess of globulin in the cerebro-spinal fluid in various psychoses appears, because of its transient nature, to be a product of metabolic change; in those cases where the condition persists the cause might be inflammatory change or marked destructive cell change. 3. The presence of globulin does not coincide in every case with an increase of the quantity of proteid present or the converse. The deduction is that we are dealing with more than one proteid in the cerebro-spinal fluid in insanity. 4. There appears to be no true relationship between excess of globulin in the cerebro-spinal fluid and an increase of lymphocytes. 5. There is evidence that the active principle for the Wassermann reaction is attached to the globulin molecule. 6. In all cases of syphilis and metasyphilis of the central nervous system the spinal fluid showed an increase of globulin with an increase in the quantity of the proteid, as estimated by Esbach's solution, in nearly all cases in a marked degree, and this condition is constant. In nearly all cases a lymphocytosis is also present.

The paper was discussed by Dr. MACKENZIE WALLIS, Dr. G. M. ROBERTSON (Morningside Asylum), Dr. W. J. MIDELTON (Bournemouth), Dr. J. G. SOUTAR (Gloucester), and the PRESIDENT.

Dr. WALLIS read a paper on

Metabolism in the Insane,

consisting mainly of a *résumé* of work already accomplished, and of suggestions for future research.

Dr. MUIRHEAD, Dr. DAVID BLAIR (Lancaster County Asylum), and the PRESIDENT discussed the paper.

Dr. M. D. EDER (London) read a paper on

A Case of Obsession and Hysteria Treated by the Freud Psycho-analytic Method.

A young clerk of 25 had constant pains at the back of the neck during two years. He was depressed and melancholic and was unable to carry out his work. Psycho-analysis, including a series of word-association tests, and an analysis of dreams showed that the patient had certain obsessions and phobias. He had some dislike of going into crowds. Since a child he had been unable to eat in public; for instance, he could not take a meal at a restaurant or a friend's house. He disliked washing himself and never bathed. There were well-marked homosexual tendencies (not practised); ordinary sexual intercourse and marriage were regarded as revolting; and sexual feelings were evinced towards a sister. Psycho-analysis traced the origin of the pain and of these phobias to repressed wishes dating back to childhood or associated with his work. Treatment which lasted three months effected a cure. Similar cases are very numerous; it does not suffice to dub these patients "degenerates." This particular patient, who is quite typical, was a very gifted young man, with noble aims and capable of fine work.

Dr. T. GWYNNE MAITLAND (Sutton) made a few remarks on the paper.

Dr. E. R. SCHUSTER (Aachen) read a paper on

Douche Massage in Diseases of the Central Nervous System.

Douche massage is a process which, coming originally from France, has been practised for many years at Aix-la-Chapelle, Germany, mostly for complaints such as gout, chronic articular rheumatism, and chronic neuralgias, among these especially for sciatica. It has also been successfully employed as an additional form of treatment in sensory disturbances and motor paralyses, arising, for

instance, from tabes, spinal myelitis, arteritis, or gummatous lesions in the brain and spinal cord. The method is briefly as follows. The patient sits in the basin of the bath. The douche consists of a strong stream of thermal water issuing from a mobile tube of 5–10 mm. diameter and a temperature of 35°–37° C. This powerful stream, of a pressure of about 1–1½ atmospheres, is applied for 10 to 20 minutes gradually to all parts of the body, beginning with the feet, whilst massage by hand is being made use of at the same time. After this application the patient remains in the bath (which should reach up to his neck) for another 10 to 15 minutes. This treatment, which may possibly be considered somewhat drastic if applied to severely affected cases of the central nervous system, can easily be modified to suit individual requirements. By the douche no dangerous change in the bodily equilibrium or in the blood pressure can be brought about, as has been proved by Dr. Schuster's special studies with Recklinghausen's tonometer. Patients also with heart disease and persons of advanced years who have been suffering from arterio-sclerosis, emphysema, varicosis, or even venous thrombosis have been put through this treatment, not only without any danger, but with most satisfactory results. In some cases of locomotor ataxia very painful hyperæsthesia has been considerably relieved and sometimes cured, the treatment being applied in a very mild form. For patients suffering from motor paralysis douche massage is prescribed in medium strength. In hemiparesis or paraparesis of not too old-standing, paralysed muscles, as a rule, regain their normal functions quicker than after treatment by electricity or simple massage. Douche massage offers a very useful addition to the customary and recognised methods of treatment employed in diseases of the central nervous system.

Dr. F. E. BATTEN (London) said that douche massage coupled with mercurial inunction, in syphilitic cases, was very beneficial, and English medical men thoroughly appreciated the value of the treatment as carried out at Aix-la-Chapelle.

The PRESIDENT also discussed the paper.

OBSTETRICS AND GYNÆCOLOGY.

FRIDAY, JULY 28TH.

President, Professor EDWARD MALINS (Birmingham).

Dr. E. HASTINGS TWEEDY (Dublin) read a paper on

The Cause and Cure of Eclampsia.

He stated that during his seven years' mastership at the Rotunda Hospital 74 cases of eclampsia had been treated, with a mortality of 8·11 per cent. This extremely low death-rate for the disease in question could only be explained on one of the following assumptions—viz.: (1) that the disease is of a milder type than formerly; (2) that there is greater laxity of diagnosis; and (3) that the treatment is more satisfactory. As regards the first proposition it was impossible to believe that throughout seven successive years a mild type of the disease should persist. Laxity of diagnosis certainly could not be cited as the cause, as very stringent precautions were made only to include true and undoubted cases in the statistics. All deaths associated with convulsions occurring after the sixth month of pregnancy were diagnosed as eclampsia. Deaths before the sixth month were only catalogued according to the pathological findings. No woman who had previously suffered from fits, epileptic or otherwise, was counted as an eclamptic. An unconscious toxic woman with albuminuria after the sixth month was considered to be suffering from the disease, but no convulsions were recognised unless they were associated with albuminuria. The third suggestion must therefore be the correct one. Treatment certainly had a very important bearing upon the ultimate issue of a particular case. The introduction of morphia in the treatment of this disease by Sir William Smyly was an instance in point. During the period of his assistant mastership at the Rotunda Hospital the speaker had been impressed with the fact that medicines or food should not be placed in the mouth of an unconscious woman, and in 1896 he advocated the treatment of eclampsia by gastric lavage, cupping to the loins, and the administration of purgatives by the stomach tube. He then emphasised the importance of the "side" position to allow the escape of mucus, and he was a firm believer in the use of morphia. He now propounded the theory that food was the primary cause of the toxæmia and heart failure, and that the milk and whey so frequently administered to eclamptic patients were distinctly harmful. The disease is possibly due to some degeneration of the gastric and intestinal mucosa. It is well known that degeneration of the renal, pancreatic, and hepatic epithelium occurs during pregnancy, and it would be somewhat remarkable if changes did not occur in the cells lining the alimentary tract. It is also known that pregnant women do not drink sufficiently, they often bolt their food (especially eclamptics), and the majority suffer to a more or less extent from various "cravings." The speaker suggested that an anaphylactic condition was developed. The association of morbid symptoms with the ingestion of milk or whey suggested the elimination of all food in the treatment of eclampsia, and he was now able to produce a series of 29 successive cases with no mortality extending over a period of two years nine months. The treatment now advocated is: (1) the suppression of all food, even after consciousness has returned; (2) the exhibition of morphia in repeated doses until the respiration falls even to 6 or 7 per minute; (3) gastric lavage and efficient purgation; (4) intestinal lavage with sodium bicarbonate, using one to one and a half pints of fluid at a time until the return is quite clear; and (5) the assumption of the lateral position. Should spasm of the glottis occur the attendant must draw the head and shoulders of the patient over the end of the bed and turn the face towards the floor. This manœuvre is most efficacious and emphasises the importance of a skilled assistant being always present. Benefit is sometimes obtained from the use of oxygen, linseed meal poultices to the loin, and infusions of plain water. Laking of the blood need not be feared from the latter. Accouchement forcé should be avoided and forceps are very rarely required. Chloroform should only be administered in doses of 12 to 15 minims from time to time to aid the performance of gastric lavage or infusion, as suggested by Stroganoff. In conclusion, Dr. Tweedy remarked that no disease requires more careful and thorough treatment and need of skilled attention.

Dr. A. W. RUSSELL (Glasgow) deplored the calamities that so frequently attend the treatment of eclampsia. He regarded preventive measures as most important. Personally, he had a profound distrust of morphia, and did not favour chloroform. He thought that some other anæsthetic should be administered if necessary, and mentioned details of a case in which Cæsarean section had saved the lives of both mother and child.

Dr. R. C. BUIST (Dundee) thought that it was impossible to lay down any one theory to explain the disease. "Toxæmia" is a word only, and in relation to eclampsia is but little understood. He agreed with the free use of morphia, and quoted Veit's work.

Professor PAUL STRASSMANN (Berlin) congratulated Dr. Tweedy upon his results, and asked how his theory would explain the frequency of the disease in primiparæ and twin pregnancies. He insisted on the demonstration of albuminuria in all cases of eclampsia.

Dr. THOMAS WILSON (Birmingham) congratulated the author of the paper on the excellent results of his comparatively long series of cases. He insisted that the treatment of eclampsia and albuminuria are very different things. He was interested in Dr. Tweedy's theory of causation, and especially applied it to the severe post-partum cases. Here it certainly could not arise from fœtal or placental toxæmia. He referred to the suggestion that the breasts may be the underlying cause, and cited a remarkable instance where amputation of both breasts was followed by recovery.

Dr. F. EDGE (Wolverhampton) asked for details of the milk supplied to the eclamptics in Dr. Tweedy's cases that terminated fatally.

Dr. E. SMALLWOOD SAVAGE (Birmingham) asked if any previous gastric trouble—e.g., atonic dyspepsia—had been noted in any of Dr. Tweedy's cases. He had frequently noted "retraction" or "splashing" in the examination of obstetrical patients.

Dr. R. J. JOHNSTONE (Belfast) was glad to hear that chloroform was not advocated as a routine method of treatment in eclampsia. On the other hand, he was not prepared to admit that accouchement forcé if properly performed was so deadly, as Dr. Tweedy had stated. He also referred to a successful case of renal decapsulation occurring in his

practice. The operation is very easy, and in his case the benefit was immediate.

Dr. TWEEDY, in reply, referred to the series of 400 cases published by Stroganoff and remarked that in the treatment of the actual convulsion he and that author were at one. He considered it a great error to give salines and thought that sodium bicarbonate is infinitely better. He also thought that the occurrence of eclampsia in primiparæ and twin pregnancies helps to strengthen his theory. Possibly a certain degree of tolerance to the toxins is acquired in subsequent pregnancies which is absent in primiparæ.

Dr. J. NIGEL STARK (Glasgow) read a paper on

The Dangers of Fibromyomata of the Uterus in the Later Years of Life.

He observed that these dangers are not sufficiently appreciated by the profession, and that a much larger number of women die from fibroids, directly or indirectly, than is generally thought to be the case When a woman reaches the menopausal age many practitioners advise against operation for this condition. Too often cessation of the bleeding is waited for, a cessation that may never occur. He therefore urged that operative measures be employed more frequently, and brought forward the following reasons in support of his contention: (1) the future behaviour of any individual growth cannot be foretold; (2) there is no certainty against serious degenerations; (3) various complications may ensue if the neoplasms are allowed to remain; and (4) operations for fibroids are not so serious at the present day as formerly. The speaker then proceeded to detail some of the complications and degenerations that may affect fibromyomata in later life. Sepsis and necrosis are not at all an uncommon event, and a neoplasm that has remained small and quiescent may only give presence of its existence by this complication. Details were furnished of a case where a tumour had been known to exist for 20 years. A foul vaginal discharge and hæmorrhage necessitated operation. Double phlebitis supervened and caused the death of the patient. Had an operation been performed 20 years previously, when the growth was healthy, without doubt the patient's life would have been saved. In fact, necrosis is one of the most dangerous and frequent accidents that may occur to a fibroid in the later years of life. Two-thirds of all such cases occur between the ages of 40 and 70. Another not infrequent accident is retention of urine with all the sequelæ of cystitis, pyelitis, &c. This may arise from increase in size of an intrapelvic tumour or from prolapse of a fibroid into the pelvis. Tumours in which calcareous degeneration has occurred have a special danger in that they may produce friction of intestine or omentum and be the exciting cause of a carcinoma. Details of two such cases were given. Again, the mere prolongation of bleeding long after the menopause has a very deleterious effect and may produce such a profound degree of anæmia as to preclude any operative measures for its relief. Finally, there is always the possibility of malignant disease supervening upon a fibroid neoplasm. Carcinoma of the body of the uterus develops in 2 per cent. of all fibroids that come under treatment.

Dr. WILSON communicated a paper on

Dysmenorrhœa due to Very Small Fibroids.

He stated that in some cases of dysmenorrhœa palliative measures are of little avail, and that it is necessary to perform a radical operation to restore the patients to health and prevent the acquisition of drug habits or similar ills. He had an experience of eight cases in which it had been necessary to remove or explore the uterus for dysmenorrhœa. In several instances he had been surprised to find very small fibromyomata present. These neoplasms were too small to diagnose by the usual methods of examination, but their association with the menstrual pain was too frequent to be a mere coincidence. He suggested, therefore, that they bore a direct causal relationship to the dysmenorrhœa. In two instances very small submucous fibroids had been found near the fundus. In a third case an interstitial growth, 7 mm. in diameter, was exposed in the anterior wall of the uterus at the level of the os internum. Dr. Wilson proceeded to give details of cases in support of his thesis. The first patient quoted was a woman of 40 who had begun to menstruate at the age of 17. The periods were always associated with much pain, and at 24 the uterus was dilated and curetted. No relief was obtained, and at 28 she appeared prematurely old and ill. Curettage was again preformed with but little benefit. At 32 she was admitted to the General Hospital, Birmingham, and the uterus was removed by the abdominal route. A small fibroid was found at the level of the isthmus. Recovery was rapid, and two years later the patient was well and strong. At the present time, six years after the operation, she is in excellent health and has had no return of abdominal pain or discomfort. At the time this operation was performed the relationship between the minute fibroid and the dysmenorrhœa was not appreciated. The occurrence of other cases, however, established the fact, and the history of a patient operated upon in 1910 conclusively proves the connexion. A single woman of 32 complained of severe griping pain on the second day of each period, necessitating rest in bed. A very small tumour was palpated in the posterior wall of the uterus and vaginal cœliotomy was performed. In the left posterior wall of the uterus a small fibroid of the size of a hazel-nut was removed. The uterine wall was sutured with catgut and the patient rapidly recovered. The after-history is perfectly satisfactory and she now writes that she "never has trouble from the pain I used to dread so much." In conclusion, Dr. Wilson remarked that the pain in these cases is not comparable to that produced by a polypus. The ideal treatment is obviously hysterotomy and myomectomy, but he thought that hysterectomy will frequently be performed in the future because the fibroids are so small and cannot be found.

Professor STRASSMANN observed that 30–40 per cent. of all patients with fibroids complain of severe dysmenorrhœa. He could recall an instance where the abdomen was opened to explore for the cause of dysmenorrhœa, and 10 or 12 minute fibromyomata were discovered. He believed that hysterotomy was the right procedure in future in all incurable cases of dysmenorrhœa.

Dr. TWEEDY thought that from a practical point of view the degenerations of uterine fibromyomata after the menopause were not of great importance. What was important, however, was the "cancerous" change referred to by Dr. Stark, and he considered that it was criminal to treat a patient with fibroids palliatively when symptoms developed after the menopause. He agreed with Dr. Wilson in that small fibroids were very apt to be missed, and said that in view of the details brought forward the right course in all persistent cases of dysmenorrhœa was to operate. He suggested that the uterus should be split sagittally and re-sutured.

Dr. RUSSELL thought that Dr. Tweedy had not laid sufficient stress upon the dangers of degenerative changes in fibroids. All recent work tended to show the importance of early operative interference.

Dr. BUIST agreed that all patients with fibromyomata ought to be kept under observation, and that the orthodox teaching that the symptoms associated with fibromyomata cease at the menopause is wrong. The mere involution of a fibroid may cause trouble. He was very interested in Dr. Wilson's paper and considered it important, in that it justified further possibilities of examination in the case of patients with dysmenorrhœa. Hitherto, after dilatation of the cervix and curetting one had to be satisfied with palliative measures, but now it was possible to suggest vaginal hysterotomy.

Mr. J. W. BELL (London) advocated hysterectomy for recurrent dysmenorrhœa due to fibroids on account of the possibility of recurrence or "seedling" tumours.

Dr. STARK, in reply, remarked that at the present time far too many deaths result from uterine fibroids. Furthermore, deaths after the menopause were not uncommon from this cause apart from carcinoma.

Dr. WILSON, in reply, said that the difficulty experienced in most cases was to find the fibroid. Hysterotomy and myomectomy were without doubt the right treatment, but if he had to perform hysterectomy he would remove the ovaries also. He considered that the patients thereby passed through a better menopause.

Dr. C. E. PURSLOW read notes upon a case of

Tuberculous Elephantiasis of the Vulva,

and illustrated his remarks by specimens and photographs. The patient, aged 37, was admitted to the Queen's Hospital under Dr. Purslow's care in May, 1910, when she said that the vulvar symptoms had been in existence for three years. In 1904 she had undergone laparotomy for tuberculous peritonitis at the hands of Mr. Christopher Martin at the Women's Hospital, and in July, 1895, while still under Mr. Martin's care,

an ulcer developed on the left labium majus. This was thought at the time to be venereal, but no further specific symptoms developed, and later the glands in both groins suppurated, leaving extensive scars in the inguinal regions. On admission to the Queen's Hospital, as stated, under Dr. Purslow, it was found that both labia majora and minora, clitoris, and mons veneris were involved in a diffuse hypertrophy. The papillæ of the dermis were much enlarged, and the whole formed a soft, oozing swelling. A mass of suppurating glands was present in each inguinal region. The condition was aggravated by the use of X rays and various local applications, and therefore the parts were excised. Microscopically there was a great increase in fibrous tissue. Near the periphery the tissues were œdematous, and there was a tendency to shed the superficial layers of the epithelium. The changes were those of chronic hypertrophy. From a survey of the literature Dr. Purslow was of the opinion that this case was probably tuberculous in nature. A fortnight before the reading of his paper the patient presented herself with commencing recurrence of the condition in the area round the previous excision. The prognosis is usually bad.

Mr. CHRISTOPHER MARTIN (Birmingham) quite agreed with the view that the lesion was probably tubercular in origin. When he first saw the case he thought that it was a combination of syphilis and tubercle. The failure of all anti-syphilitic remedies had proved the absence of syphilis.

ODONTOLOGY AND STATE MEDICINE.

FRIDAY, JULY 28TH.

President, Professor FRANK EARLE HUXLEY (Birmingham).

The final meetings of the Odontology Section were, as determined last year in London, combined with those of the State Medicine and Industrial Diseases Section. The PRESIDENT occupied the chair. Four papers were read consecutively, and a discussion then took place on the whole subject of "The Teeth in Relation to Public Health."

Dr. JAMES WHEATLEY (Shrewsbury) communicated a paper on

The Prevention of Dental Caries from a Public Health Standpoint.

He believed that the physique of the nation would be vastly improved by the eradication of dental caries, a matter which needed as much, if not more, attention by the authorities than even that of tuberculosis. There were abundant evidences that dental caries was on the increase in these islands, one reason being that no public body had, until quite recently, felt the necessity of dealing systematically with the subject. He gave some advice regarding the feeding of children to this end, and condemned the use of bread soaked in milk, patent foods, newly baked bread, and food taken in a liquid or minced form. He emphasised the value of the habit of mastication and the use of fresh fruit as the last item of the meal, and pointed out that oral breathing should be treated and corrected. He deprecated the use of sweets, and gave a list of "cleansing foods" such as fresh fruits, raw vegetables, meat, fish, bacon, and toasts and crusts of bread made from wholemeal flour.

Mr. A. HOPEWELL-SMITH (London), in a paper on

The Abuse of Sweetmeats,

alluded to the value of sugar—cane sugar—as a food and the enormous increase in the manufacture of sweetmeats in recent years in this country, and computed the number of confectioners in Greater London as being over 4500. He inveighed against the common practice of exposing sweatmeats for sale in dusty, dirty streets, and in shops with open windows and doors where they could be freely contaminated by the house-fly and other pests. The artificial colouring and constituents of the commoner sweets were described, together with their relative solubilities. The main feature of the paper dealt with many new and original experiments carried out *in vitro*, undertaken by him to ascertain whether and in what ways the oral secretions are altered in their nature, chemical reactions, and amounts by the use of sweetmeats, to compute the reactionary variations between the salivas of immunised and non-immunised persons, and to determine whether caries of enamel could be artificially produced in the laboratory by placing typical sweetmeats on the free surfaces of human teeth. It was thus shown by means of diagrams, bacterial cultivations, &c., that some sweets, such as acid drops, barley sugar, sugarless chocolate, &c., were bacteriophobe, and chocolate, toffee, caramel, &c., bacteriophile. Parents should not allow children to indulge in sweatmeats; if they must eat them, then only those made from pure sugars free from adulterations should be employed at, and not between, meals. He concluded by stating that, in his opinion, confectionery factories and the wares of sweetmeat vendors should be placed under State control.

Mr. C. E. WALLIS (London) spoke on the subject of

Infant Feeding.

The poorest of the children attending the London County Council Schools had better teeth than those of a higher type. The teeth were not necessarily clean, but he considered 40 or 50 per cent. of mouths showed perfect dentition—on account of the fact, he believed, that they could not afford to pay for luxuries. He considered cider harmful to the teeth.

The detergent effect of the crust of bread formed the main theme for Dr. J. SIM WALLACE (London) to describe the good effects by mastication of bread.

The Bread Question.

He compared white, standard, and stone-milled breads, and pointed out that all were equally efficient in cleansing the teeth and preventing the initiation of dental caries. He protested against the use of bread soaked in milk and bread and marmalade, and narrated some experiments which he had conducted to ascertain the acidity of the saliva when these materials were taken into the mouth and chewed in the usual way.

In the ensuing discussion Dr. WOODS HUTCHINSON (New York) disputed some of the statements that had been made, and said that "decay" of the teeth was no worse to-day than 150 years ago. The use of sugar in America and amongst the soldiers in the Philippines was believed to counteract the tendency for the consumption of alcohol. Candies helped to build up the bodies of the young, and he personally was not afraid of the effects that bread was said to have upon the teeth.

Professor BOSTOCK HILL (Birmingham), while agreeing very largely with what had been said, believed that it was rare to find sweetmeats actually contaminated with substances such as arsenic.

Dr. C. W. HUTT (Warrington) asked a question, and Mr. A. S. UNDERWOOD (London) protested that, from the evidence of human skulls which he had examined, caries of the teeth was actually on the increase. A great deal of immunity existed among the aboriginal races of mankind.

The PRESIDENT spoke about the abuse of sweetmeats, and after Mr. H. S. STEYNOR (Malvern) had described a case dealing with the subject, the readers of the various papers replied; and subsequent to the passing, with acclamation, of Sir Victor Horsley's resolution submitted to the meeting on the opening day, the session was closed. That resolution was as follows:—

That the Section of Odontology request the Council of this Association to urge upon the Board of Education the need of pressing the local authorities to establish school clinics as being the only means whereby the dental and medical requirements of the elementary school children can be adequately and economically treated.

OPHTHALMOLOGY.

FRIDAY, JULY 28TH.

President, Mr. HENRY EALES (Birmingham).

Professor JOHN BERRY HAYCRAFT (Cardiff) demonstrated a delicate method of mapping out the blind spot of the retina and the new observations of the character of that spot which he had obtained by his instrument. The feature of his observations was the variation of the area of the blind spot according to the colour of the object exhibited. Working with colours of equal intensity or luminosity, he found that the blind area was smallest with grey and of gradually increasing size with blue, yellow, and green, and largest with red. The order in which the colours are placed in this observation was the same as that found in mapping the perimetry of the field. He laid stress upon the necessity of equal luminosity of colour objects, and showed how he had obtained these by means of Abney's rotating sectors.

Mr. J. H. TOMLINSON (London) showed his "Scotomograph." This instrument enabled the fields to be taken in the dark—a matter of particular necessity in determining small scotomata and variations of the blind spot. The delicacy of the instrument could be shown by the manner in which the

main retinal vessels could be mapped out for a considerable length.

Dr. F. W. EDRIDGE-GREEN (London) said that the intensity of the colour of the object with which a test was made greatly altered the bounds of the periphery of colour vision. Given a colour of sufficient intensity, it was possible to trace colour vision to the extreme periphery. He did not agree with Professor Haycraft that Abney's rotating sectors was a satisfactory instrument for obtaining colours of equal intensity.

Mr. T. HARRISON BUTLER (Coventry) said a disability arose in the case of Mr. Tomlinson's scotomograph from the liability of the eye under examination to undergo dark adaptation. This, he thought, would render the instrument unsuitable for ordinary practical purposes of examining patients, though its scientific value might be great.

Professor HAYCRAFT, in reply, said he had recognised the points brought forward by Dr. Edridge-Green, and in his experiments had used colours of the same size which were matched for equal intensity with yellow; this he found satisfactory.

Mr. TOMLINSON, in reply, said that it was possible that with extended observations, such as his instrument would permit, they would have to readjust their canons of perimetry.

Mr. A. F. MACCALLAN (Cairo) read a paper on

Egyptian Ophthalmic Hospitals.

Ophthalmic relief work, he said, had extended considerably in the past year; two built hospitals were in operation, three others were being built, and the money for two more was obtained. Thus seven of the 14 provinces would have a well-built and equipped hospital. That was an advance; but the need was even greater than the provision. About 97 per cent. of fellahin had some form of eye disease, chiefly trachoma, with resultant trichiasis. The demand for treatment could be gauged by the fact that at the three hospitals at work in 1910 more than 8000 such cases were seen, but their staff and space only permitted 2000 to receive the necessary treatment of operation. A policy of extension was desirable, and should be carried out on the lines of the travelling hospitals founded by Sir Ernest Cassel. With it would come the development in each province of a system of small travelling hospitals, one for each police district. To these the permanent hospitals would act as a base, to which serious cases would be sent. This policy had been started in one province at the instance of H.E. Moheb Pasha.

Professor R. A. REEVE (Toronto) asked what precaution was taken against trachoma in case of cataract operations.

Mr. N. BISHOP HARMAN (London) asked what degree of bad vision constituted blindness in Mr. MacCallan's returns.

Mr. HARRISON BUTLER said that during his work at Jerusalem he found nearly every cataract patient had trachoma; it did not prevent successful operation unless there was an intercurrent catarrh.

Colonel HENRY SMITH, I.M.S., did not agree that trachoma was no drawback to operation unless it was of the smallest degree; he was accustomed to take particular precautions in flushing the conjunctiva with fairly strong antiseptic lotions.

Captain A. E. J. LISTER, I.M.S., agreed with Colonel Smith.

Mr. MACCALLAN, in reply, said that in his figures those whose vision did not exceed detection of fingers at the distance of 1 metre were counted as blind. As regards trachoma contra-indicating intra-ocular operation, he agreed with Mr. Butler that it did not constitute a bar; nevertheless, he was accustomed to use efficient antiseptics.

Miss AMY SHEPPARD, M.B. (London), read a paper entitled,

Extraction of the Lens in its Capsule, with Special Reference to Colonel Smith's Operation.

The paper "was intended to suggest that extraction of the lens in its capsule was the operation of election in the great majority of cases of operable cataract, excepting those of children and young people, and a few very hypermature senile ones. It was indispensable in that it was the only safe and effective operation in immature cases." The paper was based on personal observation of 650 such extractions of which Miss Sheppard had performed 260 under the supervision of Colonel Smith at the Civil Hospital, Amritsar, Punjab, between February and April last. The stages of the operation were described in detail, and also the manner in which the lens was dislocated by the pressure of the point of a squint-hook applied to the lower quadrant of the cornea. Certain points of importance were dwelt upon, such as the necessity for a clean cut of the cornea by a single sweep of the knife; a jagged cut from a sawing movement tended to delay healing; the necessity for a large incision to permit escape of the large encapsuled lens; the necessity for a skilled assistant to manipulate the brow and upper lid of the patient. On the differences manifest between this operation and that performed with capsulotomy it seemed that replacement of the iris was rather more difficult, and there was a greater tendency to a wide and ill-shaped coloboma. Escape of vitreous occurred in from 5 per cent. in skilled hands to a variable and larger percentage in unskilled hands. One pupil had 21 losses in the first 100 eyes and only four in the last 100. The advantages claimed for the operation were lesser liability to irido-cyclitis from the irritation of retained lens cortex, or incarcerated fragments of capsule; complete absence of "after-cataract" and the risks attached to needling operations; that it was the only operation effective in the removal of immature cataract.

The PRESIDENT said one serious objection that almost precluded the use of the operation in ordinary practice was the necessity for a highly skilled assistant. Miss Sheppard's suggestion that it was the only satisfactory method of dealing with immature cataract did not agree with his experience. For many years he had performed Förster's operation and had found it most excellent. By this means over 200 cataracts had been artificially matured, and subsequently removed with rather more ease than an ordinarily ripened cataract.

Colonel SMITH wished to thank Miss Sheppard for the trouble, time, and expense she had expended in investigating the operation under discussion. In commenting upon certain criticisms that had been advanced by Colonel Herbert in the press, he (Colonel Smith) would remark that Herbert's experience had been in Bombay, whilst his was in the Punjab; the people and the governments differed, and that affected the possibility of getting satisfactory statistics of the subsequent history of patients. He hoped at no distant date to publish such statistics. Capsulotomy operations, he maintained, were unsurgical, for the whole of the cataract was not removed. The capsule had no utility save as a covering for the lens. In his operation iritis was very rare; it was common in capsulotomy operation for these two reasons. To leave fragments of the lens or capsule made the operation as incomplete as would be the leaving a fragment of stone in the bladder after a lithotopaxy.

Professor REEVE agreed with the President that Smith's operation was not the only satisfactory means of dealing with immature cataract. He had practised McKeown's irrigation method with very safe and satisfactory results. It had enabled him to reduce materially the time of blindness which afflicted these patients.

Dr. J. O. MCREYNOLD'S (Dallas, Texas) said the attitude of Americans who had had opportunity of studying Colonel Smith's method was interesting. They had not adopted it as a regular practice, though some had secured very satisfactory results by the method, others had modified it, one devising a method of rupturing the ligament by means of a special instrument passed within the anterior chamber.

Dr. J. GRAY CLEGG (Manchester) said he had done Smith's operation upon six cases in the past few weeks. He found the necessary pressure far less than he had anticipated; the operation was safest when the incision was very large, even to nearly half the cornea. Recovery was not so uncomplicated as the statistics indicated, perhaps because he could keep touch with his cases satisfactorily, which could not be done in India. His conclusion was that the complications of this operation were chiefly during operation and not after; nevertheless, the patients remained rather longer in hospital than when capsulotomy was done.

Mr. A. W. ORMOND (London) took strong exception to the statement made by Miss Sheppard that intracapsular extraction was the operation of election. He could not allow that any operation that necessitated the mutilation of the iris was a perfect operation. Iridectomy might facilitate operation, but the difference in the ultimate comfort to the patient of a clear round pupil and a coloboma of even the most superior order was striking.

Major ELLIOTT said he had studied this operation at Jullundur, and paid a warm tribute to the work and personality of Colonel Smith and the manner in which he put his experience and resources at the disposal of any inquirer. In his view, what they most wanted at the present time was not further eulogies or descriptions of the operation, but statistics of the operative and post-operative results for an extended period and on a sufficiently large scale. Statistics were an absolute necessity. The after-results of capsulotomy operations were well known and constantly increasing in weight; the same must be had for the intra-capsular operation. He thought the advocacy of a one-sweep cut of the cornea was dangerous; two or three movements of the knife need not produce a jagged edge nor delay healing. With regard to the alleged danger of retained capsule and cortex, he denied the terrors of such conditions unless the capsule was entangled in the wound. He did not agree with Mr. Ormond that the "simple" extraction was the proper operation. Iridectomy should be done; there must be an open sluice-gate for the escape of aqueous.

Captain LISTER said he had traced 98 cases in which there had been escape of vitreous during operation, and the condition of these eyes showed that a small loss was not dangerous. It was certainly much less dangerous than a similar accident in capsulotomy operation, and, he thought, because no lens matter remained to set up irritation. He acknowledged that climatic conditions had immense influence in affecting sepsis. His experiences in the warm, moist climate of Calcutta was not nearly so good as in the clean, dry air of the Punjab.

Miss SHEPPARD, in reply, said a skilled assistant was desirable, not absolutely essential. Iridectomy was usually performed but not invariably. She drew attention to the statistics of cataract extraction for the whole of India. There were 14 per cent. of losses from all causes.

Mr. LEONARD J. C. MITCHELL (London) presented a report on

The Use of Carbondioxide Snow in Ophthalmic Work.

He said that the work reported in his paper followed upon the exhibition of the use of the snow and the paper read thereon by Harman and Morton at the last meeting of the Association. His method of handling the liquid gas and the preparation of the solid pencil did not differ materially from theirs, and he insisted that elaborate and costly apparatus was wholly unnecessary and even troublesome. He had used the snow in the treatment of: 1. Rodent ulcers with great satisfaction; he emphasised the necessity of making the maximum application to the growing edge of the ulcer. 2. Trachoma, for which its use had been widely tested at the Royal London Ophthalmic Hospital. The application brought on a smart vascular reaction in the whole conjunctiva, and the beneficial results were attributable to this inflammatory reaction. It was desirable to carry the freezing to a point just short of destroying conjunctiva tissue. 3. In spring catarrh an absolute cure was obtained in a long-standing case by three applications of 15 seconds. 4. In lymphatic nævi of the conjunctiva excellent results were obtained.

Mr. C. DEVEREUX MARSHALL (London) said the use of carbondioxide snow was a most interesting method of treatment, and the results obtained therefrom most satisfactory.

Colonel SMITH said the essential factor in the treatment of trachoma was the production of hyperæmia.

Mr. BISHOP HARMAN read a paper on

The Blind and the Census of 1911.

He said that in earlier Census papers the term "blind" was used without qualification in the schedule. In the paper issued this decennial year a new description was employed, "totally blind." The addition of the adjective, he held, had destroyed the usefulness of the Census so far as enumeration of the blind was concerned, both by unduly limiting the inquiry and by presenting a conundrum of no little difficulty to those who had to fill in the Census paper. A census of the blind had no interest or utility unless it bore a real relation to the number of those "blind for the practical purposes of life." If it gave any reliable indication of those people then it had a real utility. A list of the "totally blind" had no such use. To-day social and industrial conditions increased the number of those who were blind for practical purposes. Employers' Liability Acts had increased the risks of employment of those whose sight was seriously defective and diminished their chances of employment in competition with the normal-eyed. These conditions gave rise to a demand for special workshops for blind persons, and it was necessary on this account to have a reliable enumeration of those blind for practical purposes. He said that with this view a deputation, of which he was a member, had waited upon the Registrar-General asking for a two-fold enumeration: (1) blind; (2) partially blind. But the issue of the Census proved they had not succeeded. In the London County Council blind schools he had oversight of 326 blind children; he had inquired of their parents the nature of their returns on the Census papers and 312 had replied. Their returns were as follows: Totally blind, 83; partially blind, 120; no entry made, 109. He pointed out that it was remarkable that more than one-third of the parents made the return of "partially blind," just the return that their deputation had begged of the Registrar-General. No suggestion of this mode of return had been made to the parents, so that their action proved the need for, and the naturalness of, the provision they had desired. Analysis of the condition of the eyes of these 312 children from the detailed case papers gave the following comparison of the parents' returns with the real state of affairs:—

—	Blind.	Partially blind.	No entry.
Parents' returns	83	120	109
Analysis by N.B.H.	153	143	16

The totally useless and even misleading nature of the official Census returns is obvious from such a comparison. It is even more remarkable when the state of these children is considered individually. Take, for example, those who, according to the analysis, should have been returned as blind. Of the 153 so returned, 59 had no perception of light, 33 some perception of light, and 61 could detect hand movements or fingers from 10 cm. up to 1 metre. Of those given in the analysis as "partially blind," no more vision was permitted than the ability to see some letter of Snellen's type at any distance the child liked and under the most favourable condition (with the exception of such cases as retinitis pigmentosa). Of the children for whom the parents made no return, only 16 could under any reasonable enumeration be omitted from the schedule of the blind, and these were myopes for whom no accommodation could be found in the myope school. Mr. Bishop Harman urged that all those surgeons who had care of blind schools, or who were able to trace the blind who had been trained in them, should endeavour to obtain similar returns to those he presented, so that a large body of evidence might be gathered to present to the Registrar-General. He suggested that the Council of the Association might fittingly take evidence by a special committee.

The PRESIDENT said that the figures Mr. Bishop Harman had presented were most impressive; he regretted that he had not given due notice for the bringing forward of a motion on the subject.

Mr. C. W. HUTT (Warrington) said the chief medical officer of the Board of Education should be approached on the matter.

Dr. A. HUGH THOMPSON (London) asked what were the limits of Mr. Bishop Harman's group of "partially blind."

Mr. CHARLES WRAY (London) complimented Mr. Bishop Harman upon a satisfactory completion of a very difficult piece of inquiry work. He thought that any rigid term of definition for the "partially blind" dangerous; none could include all those who were "blind for practical purposes."

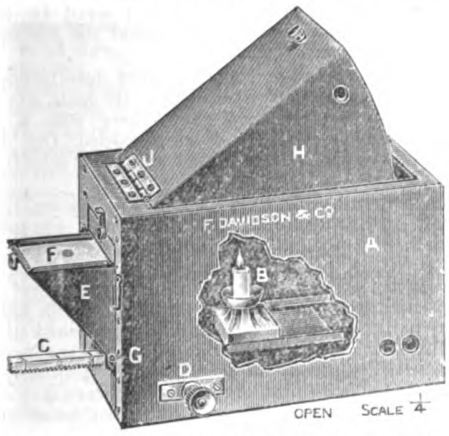
Dr. CLEGG said that restriction of the field of vision was as important a condition of partial blindness as loss of visual acuity.

Mr. BISHOP HARMAN, in reply, said that he agreed with both Dr. Thompson and Mr. Wray that any rigid definition of "partial blindness" was impossible. For certain purposes, such as Census returns, no definition was necessary; the terms "blind" and "partially blind" were sufficiently definitive for the ordinary citizen to appreciate their meaning, and to secure an average correct return.

Mr. BISHOP HARMAN exhibited a

New Photometer for the Use of School Medical Officers.

The instrument was based upon the well-known grease-spot photometer of Bunsen, which, although a standard instrument for the laboratory bench, was unsuitable for use in school class-rooms. In the instrument shown (see accompanying illustration) the standard sperm candle (B) was enclosed within a box measuring 8 × 5 × 3 inches. The top (H) could be raised to form a chimney



and the front swung outwards to form a platform (E), within which was a reflector, and on the top a sheet of thin paper (F) to form the grease-spot screen. The candle was moveable forwards, nearer, or farther from the reflector by means of a ratchet and thumbscrew (C and D). When it was desired to measure the illumination of any part of a class-room—say, that falling upon any of the desks—the box would be placed in position, with the chimney up, the screen out, and the candle lighted. Then the candle would be racked forward until the spot (F) appeared faintly illuminated; this was the indication that the light within the box, under the particular conditions of position and reflection, just exceeded in power that falling upon the screen from without. The value of the illuminant could then be read off in foot-candles upon the racked bar (C) which protruded gradually with the forward movement of the candle. The screen within the platform (E) is tinted green so as to absorb the red rays in the candle flame. Usage of the instrument shows that it is handy, gives a sufficiently wide range of measurement, and that it is accurate within the necessity of school work. The photometer is made by Messrs. F. Davidson and Co., of 29, Great Portland-street, London, W., and it is inexpensive.

PATHOLOGY.

FRIDAY, JULY 28TH.

President, Professor R. FRAZER CALDER LEITH (Birmingham).

Mr. G. PERCIVAL MILLS (Birmingham) read a paper, illustrated by lantern slides, on

The Action of Radium on Healthy Tissues,

in which he stated that to investigate this subject a single application of radium was made to the livers of mice through the anterior abdominal wall, and the animals killed for examination at various subsequent intervals. It was found that the part of the liver immediately beneath the applicator was severely damaged, being in a condition closely akin to coagulation necrosis. Apart from this small area of intense action, however, the rest of the liver showed interesting changes. There were two separate inflammatory reactions, named respectively the early and the late reaction. The *early reaction* affected all the tissues of the liver; it began immediately after irradiation, reached a maximum in about three hours, and could hardly be distinguished after 24 hours. It consisted in cloudy swelling of the liver cells, associated with hyperæmia and infiltration with interstitial cells, both diffusely and in clusters round the veins. This rapidly subsided, and by the end of a week all signs of it had completely disappeared. The *late reaction* affected only the interstitial tissues, the liver cells being unaltered. It began about 14 days from irradiation, and continued with slight variations in intensity up to 113 days, when the last mouse of the series died. It consisted in hyperæmia and cellular infiltration, in which the connective-tissue cells took a prominent part. This infiltration was present in all sections taken after 14 days from the irradiation, and seemed to increase gradually but steadily as time went on. Moreover, in the later sections some increase of fibrous tissue was observed, giving the appearance of an early cirrhosis. In two of these sections, also, giant cells were found. These were very similar in appearance to some observed by Mr. Mills in two cases of epithelioma which had been treated unsuccessfully by radium and then excised. It appeared, then, that a single exposure to radium had set up a progressive inflammation lasting at least four months, and becoming so chronic as to result in a certain degree of fibrosis.

Professor A. S. F. GRÜNBAUM (Leeds) in discussing the paper, regretted that the experiments were carried out on mice, as he thought rodents such as mice and rats were particularly susceptible to the action of X rays and radium rays, and also that mice which died natural deaths in the laboratory often showed changes somewhat resembling those described by Mr. Mills. He would like to know—presuming that the radium was applied through the skin—how Mr. Mills knew which part of the liver it had been applied to, as the position of the liver varied during breathing. He also thought that some of the changes described were compatible with bacterial invasion of a tissue the vitality of which had been lowered by the application of the radium. He had found guinea-pig's skin very resistant to the passage of radium rays and the liver more so, and would like to know why the skin was not affected. He thought that in work of this kind a very large number of controls were necessary, especially when working with mice.

Professor G. SIMS WOODHEAD (Cambridge) was interested in this matter from the general etiological point of view. Here there was evidently something which, in conjunction with other toxins and micro-organisms, might help them in the study of the causes of cirrhosis. He thought that they could not look upon those photographs as of individual specimens. They must be taken as a whole, and if that were done he thought they had some evidence that the primary changes in cirrhosis were those associated with the parenchymatous tissues, changes that were followed by interstitial changes. He thought that Mr. Mills had added to our facilities for the study of cirrhosis. He would like to ask whether the giant cells shown were not lymph spaces or channels in which were embedded cells or nuclei.

Mr. MILLS, in reply to Professor Grünbaum, stated that he recognised the area of application to the liver by the small burn which was always evident at one place on the liver. As regards the giant cells, he certainly thought that they looked like active cells and not nuclei in coagulum.

Dr. LEONARD FINDLAY (Glasgow) then read a paper on

The Origin of Pulmonary Anthracosis: An Experimental Study.

He said that it was generally taught that tuberculosis in childhood is primarily abdominal, though Koch always maintained that it was by the air-passages in the adult and child alike that the tubercle bacillus entered. Calmette holds that it is by the intestine that the tubercle bacillus gains entrance to the body, and that this is the course of events even in pulmonary tuberculosis of the adult, in opposition to the earlier and usually accepted work of Arnold, which showed that it was always by inhalation that pigmentation of the lung was produced. Dr. Findlay reminded the meeting that so much controversy had been aroused by Calmette's work that a committee of the Société de Biologie investigated the matter, and reported that it was unable to verify the passage of pigment to the mesenteric glands after a single feeding of Chinese ink, but that daily feedings extending over a period of nine days or longer resulted in the passage of pigment through the intestinal walls to the mesenteric glands, judgment being reserved on the question of the production of pulmonary anthracosis from the intestinal lymphatics. He then referred to further work on the same subject by various continental and English observers, particularly mentioning Whitla, who emphatically denied the possibility of infection by the air-passages, and who in his Bradshaw lecture described experiments where

ligation of the œsophagus absolutely prevented pigmentation of the lung, and, conversely, where blocking of the bronchus did not prevent pigmentation of the corresponding lung, provided the œsophagus was patent. All these observers supported their contentions by the results of intraperitoneal injection of Chinese ink. Dr. Findlay then detailed his own experiments, which were for the most part carried out on adult rabbits. The pigment was administered by inhalation, by ingestion into the stomach, and by injection into the peritoneal cavity. In the first case lamp-black obtained from a turpentine lamp was passed by means of a suction pump through a closed cage in which the animals were confined, but in some experiments, bearing in mind the fact that a certain degree of pigmentation is normally present in adult animals reared in towns, iron carbonate in the form of a fine powder was sprayed into the cage by means of an insufflator, and its presence in the tissues subsequently tested for by the Prussian-blue reaction. In the feeding experiments lamp-black or iron carbonate was made into an emulsion with water and olive oil, and administered through a stomach tube. Intraperitoneal injections were only performed in a few instances, when Chinese ink was employed. Dr. Findlay summarised his experiments by stating that six adult rabbits and two adult guinea-pigs were allowed to inhale soot-laden air for periods varying from 30 minutes to eight hours, with the result that pulmonary anthracosis was demonstrable, either macroscopically or microscopically in all. Three adult rabbits after ligature of the œsophagus were similarly allowed to inhale soot-laden atmosphere for seven hours, three hours, and half an hour respectively. In every instance an excess of pigment was detected in the lungs. Two rabbits were placed in the inhalation chamber after occlusion of one of the bronchi. Post-mortem examination showed pigmentation of one lung, but no excess of pigment in the lung corresponding to the occluded bronchus. Three animals caused to inhale iron carbonate, both œsophagus and bronchi being patent, showed conclusive evidence of the penetration of the iron salt into the alveoli and to the alveolar walls. Eleven animals fed with either Chinese ink, lamp-black, or iron carbonate failed to show any signs of penetration of either pigment or iron salts to the lung tissue. Five rabbits inoculated intraperitoneally with Chinese ink or soot showed no abnormal amount of pigment in the lung tissues. These experiments led Dr. Findlay to form an opinion directly opposed to that put forward by Calmette and Whitla. In no instance was he successful in producing pulmonary anthracosis by feeding or intraperitoneal inoculation, but in every inhalation experiment, so long as the bronchi remained patent, he successfully accomplished this end. His experiments, in addition to showing the mode of entrance of the pigment, demonstrated the manner of its spread. In animals killed immediately after a single short inhalation the pigment was found chiefly in the alveoli and bronchioles. Animals repeatedly used for inhalation experiments showed proportionately more pigment in the alveoli, also pigment in the pulmonary tissue and in the bronchial glands. In two cases where the animals had been kept alive for long periods after the inhalation the bulk of the pigment was aggregated in masses around large vessels, having travelled along lymph tracks, and accumulated in the adenoid tissues. Dr. Findlay then pointed out that Shingu has shown that dust is present in every child's lung in Berlin after the age of 2½ months, and that the amount is directly proportionate to the age of the child; while Cobbett and Beitzke have pointed out that the same holds good with regard to all adult animals which have lived in a town for any length of time, and suggest that possibly some of the previous workers have erroneously regarded this degree of natural anthracosis as abnormal anthracosis experimentally produced. And in conclusion Dr. Findlay suggested that the results of his experiments lend no support to the view that the tubercle bacilli invading the lung have obtained entrance by way of the intestine.

Dr. R. SAUNDBY, President of the Association, stated that pulmonary anthracosis was rare in the Birmingham district and so he was very interested in Dr. Findlay's experiments. He would like further information on the subject.

Professor SIMS WOODHEAD was extremely interested in the subject raised by Dr. Findlay, as he himself had studied this matter carefully some time ago, and had seen a number of the experiments carried out by Dr. L. Cobbett. As regards pigment, there was, he believed, no doubt as to the channel by which it reached the lung. It was not perhaps sufficient to argue that because pigment got through in a certain direction the bacilli should pass in the same direction. Briscoe's experiments on the hyaline cells of the alveoli were very important in connexion with what Dr. Findlay had said, as were also those of Dr. W. Hunter, who demonstrated the ready passage of such large bodies as the red blood corpuscles from the peritoneal cavity to the lymph spaces in the lungs. This was quite a different matter from passage from the alimentary canal.

Dr. WILLIAM H. WYNN (Birmingham) asked Dr. Findlay whether he found in his experiments that the apices of the lungs were chiefly affected.

Dr. FINDLAY replied, and gave a short description of the technique employed in his experiments. He could not satisfy Dr. Saundby's request, but knew there was a lot of anthracosis around Glasgow. As regarded Dr. Wynn's question, he always found the lung uniformly coloured with the soot.

The PRESIDENT congratulated Dr. Findlay on the way in which he had brought his interesting experimental results before the section, and particularly on the beautiful slides by which he had illustrated them. His experiments lent strong support to the inhalation theory of the origin of pulmonary anthracosis, an origin which had been generally accepted and had remained unquestioned till 1905, when Vansternberghe and Gruscz published the results of their experiments performed in Calmette's laboratory, from which they concluded that the previously prevailing opinion was wrong, and that pulmonary anthracosis arose through ingestion and not by inhalation. Discussion on the paths of entrance of the tubercle bacillus, to which such experiments bear a close relationship, attracted much attention. Fresh results by other workers along the same lines and by the same kind of experiments appeared in 1907 and 1908, which in the main supported the inhalation method and opposed the conclusions of Calmette and his pupils. The most noticeable exception in this country was provided by Whitla and Symmers, who, writing in the *British Medical Journal* in July, 1908, upheld the findings of the Calmette school. But Cobbett, from a study of the portals of entry of the tubercle bacillus, opposed them strongly in papers published in the *British Medical Journal* in 1909 and in the *Journal of Pathology and Bacteriology* last year. He (the President) hoped that Dr. Findlay's experiments, which seemed to have been carefully carried out, would give the *coup de grâce* to the ingestion hypothesis. They did a good deal to re-establish the inhalation method of origin upon its old firm foundation. Shingu had found dust in the lungs of every child older than two and a half months which he had examined, and was led to believe that the amount of the pigment present in any lung was directly proportional to the age of individuals living under similar circumstances. Bacteriologists find some degree of pigmentation in the lungs of all the animals which have lived for some time in the laboratory. It thus becomes probable, as Cobbett and Findlay both contend, that the supporters of the ingestion theory have been misled by the pigment existent within the lungs of their experimental animals before the date of their pigmentation experiments. Dr. Findlay, though denying an alimentary path of entrance to inert pigment particles, did not deny it to the tubercle bacillus. He held only that his experiments lent no support to such a path of entrance, rightly arguing, however, that the tubercle bacillus as a living organism might behave in a somewhat different fashion from the lifeless pigment particles with which he had experimented.

Professor GRÜNBAUM discussed what he called

Post-operative Drowning,

and drew the attention of surgeons to the ill-effects of indiscriminate saline transfusion.

Professor SIMS WOODHEAD wished to ask Professor Grünbaum whether he was dealing with washing out, say, the peritoneal cavity, or passing isotonic saline into the veins. The subject was one of extreme interest and importance, especially in relation to the question as to whether the expert should superintend the perfusion himself or should allow his assistant to do the work without his direct superintendence. It had to be borne in mind that in animals the tissues and organs were healthy, and that they would be able to withstand much more than would tissues and organs, usually damaged, of patients.

Dr. MONTAGU PHILLIPS (Liverpool) and Dr. ERNEST E. GLYNN (Liverpool) then read a paper on

The Comparative Value of Microscopical Methods of Demonstrating Spirochæta Pallida,

and drew their conclusions from some 50 cases of primary and secondary syphilis, and also from numerous gland punctures. The material was obtained by first cleaning the sore with absorbent wool, rubbing it with wool, and then swabbing with wool soaked in methylated spirit. At the end of four minutes the spirit was wiped off, and the clear serum which exuded was collected in a capillary tube. They never used scrapings. Their methods of examination were:—1. Dark ground illumination. 2 Staining by Giemsa. Films stained overnight in 1 part Giemsa's reagent to 8 parts of water, the long method being found more satisfactory than the more rapid process. 3. Indian ink method of Burri. Their conclusions were:—

1. Microscopical examination is a great aid in the diagnosis of primary syphilis, but it is not infallible.
2. Failure to find spirochætæ is more frequent when the sore cannot be reached owing to phimosis.
3. Spirochætæ are more constantly present in condylomata and mucous patches, and far less constantly present in papular secondary skin eruptions than in primary sores.
4. Gland puncture is not of much diagnostic value; typical enlarged indurated syphilitic glands gave negative results in more than half of the cases in which spirochætæ were easily demonstrated in the primary sore.
5. Dark ground illumination is undoubtedly the best method of examination; it is the simplest and least open to pitfalls; it is the quickest not only in the preparation of the film, but also in the detection of spirochætæ after the actual microscopical examination has begun. It is the most reliable, frequently giving positive results when other methods are negative, and the different varieties of spirochætæ can be more easily distinguished.
6. The Indian ink method, properly performed, appears to be more reliable than Giemsa's, though enough observations have not been made to ascertain if this is always so.
7. The collection of serum from the syphilitic lesions by the application of spirit is free from certain objections which occur in other methods.

Dr. W. D'ESTE EMERY (London), in discussing Dr. Phillips's and Dr. Glynn's paper, agreed with them in their conclusions as regards the superiority of the dark ground illumination method. He thought that the reason they found more spirochætæ with this method than by Giemsa was that all the spirochætæ do not always stain. He preferred Leishman's method to Giemsa's stain.

Dr. J. M. BERNSTEIN (London) drew attention to the importance of the early recognition of the spirochæta pallida, in view of the fact that better results were obtained by modern methods of treatment when applied at the earliest possible occasion.

Dr. J. DALE (Birmingham) gave testimony to the value of Burri's method and dark ground illumination when working with spirillosis of the hen and in rabbit syphilis. In syphilis of the testicle in rabbits he found spirochæta pallida in 100 per cent. of cases in which there were signs. He considered the dark ground illumination method infallible, and reminded the meeting that spirochætæ were not always present in primary sores all the time, and that when they were not found by this method they were probably not present.

Dr. GLYNN replied, and agreed with Dr. Emery that many of the spirochætæ pallidæ in a field were not stained by Giemsa's method; and further, that they were often not to be found in sores that had been dusted with mercurial powders.

Dr. GLYNN then read a paper on

A Case of Cirrhosis, Adenoma, and Carcinoma of the Liver,

in which paper were also described two other cases of alcoholic multilobular cirrhosis of the liver terminating in cancer. In the title case the distribution of the cirrhosis and carcinoma was unusual, for the left lobe was enormously hypertrophied, the cirrhosis slight, and the adenomata few; whereas the right lobe showed marked multilobular cirrhosis, adenomata were frequent, and in two portions diffuse cancer was present. Microscopically there were various grades between hyperplasia, adenomata composed of tubules and trabeculæ, and carcinoma of the spheroidal-celled type. The veins were filled with growth and numerous hæmorrhagic and anæmic infarctions had occurred.

Dr. P. B. RIDGE (London) read a paper on

A Case of Chorion Epithelioma,

in which he stated that the case was of interest owing to the fact that it had been impossible to discover any primary lesion, although many sections had been cut from various parts. He showed the uterus and appendages in a jar, and drew the attention of the meeting to the large thrombi in some of the uterine vessels. Sections of these thrombi had been cut without finding anything. He then described another very similar case he had met with, and mentioned that the correct diagnosis was not arrived at for some time, as the patient was thought to be suffering from infective endocarditis. Both these cases occurred in women who had been pregnant.

Dr. EMERY said he was very interested in Dr. Ridge's paper, as he had had a case in which the diagnosis of infective endocarditis had been made. Numerous blood cultures were taken without growing any organism; B. coli were found in the urine, but an autogenous vaccine had no beneficial effect on the patient's health; and finally chorion epithelioma was diagnosed. He thought it was very necessary to cut serial sections of all material before giving a diagnosis.

Dr. BERNSTEIN wished to know whether sections of the thrombi were cut in Dr. Ridge's case. He reminded the meeting that chorion epithelioma was not necessarily associated with pregnancy or even with the female sex, and there were quite a number of cases in the literature of deciduoma malignum in man. He considered that the difficulty of a microscopical diagnosis in chorion epithelioma was due to the fact that these growths frequently destroy themselves by bleeding into themselves. He contended that the terms chorion epithelioma and deciduoma malignum were misleading.

The PRESIDENT, in closing the work of the section, congratulated all the speakers on the excellency of their papers, and he particularly wished to thank Dr. Emery and Dr. Rolleston for their papers. He thanked the officers, especially Dr. Wynn, for the splendid way in which they had done their work.

Professor SIMS WOODHEAD proposed, and Dr. GRÜNBAUM seconded, a hearty vote of thanks to the President, which was accorded with acclamation.

The PRESIDENT thanked the section and adjourned the meeting till next year.

STATE MEDICINE AND INDUSTRIAL DISEASES.

FRIDAY, JULY 28TH.

President, Professor ALFRED BOSTOCK HILL (Birmingham).

Dr. R. J. COLLIE (London) read a paper entitled

A Few Observations upon 17,000 Consecutive Medical Examinations, Conducted Chiefly for the Public Service.

He said that it was obvious that the standard of pass for the different branches of a public service must vary with the nature of the proposed occupation of the employee. Perfect vision, for instance, was necessary in the case of all firemen, as well as very full development of the muscular system, whereas for clerical work a large number who had visual defects which were remediable by the use of lenses were passed, provided they procured suitable glasses. In the case of electric car drivers the eyes were specially tested for visual acuity, the standard being perfect vision. They were subjected to a lantern test, as well as Holmgren's test for colour blindness, and were also examined for tobacco amblyopia. In testing the eyes for visual acuity with the ordinary spectacles supplied for this purpose by opticians, it was astonishing how small a deflection of the head to one side enabled the candidate to use his second eye, which was apparently covered. Many years ago he had large pieces of aluminium attached to the ordinary circular discs, and he was satisfied that those eliminated the possibility of error. It was apparent that a preliminary medical examination must, in view of the Workmen's Compensation Act, from a commercial point of view, be distinctly to the advantage of the employer of labour. The percentage of rejections was over 10. A somewhat stringent examination was insisted on for banks and large mercantile firms, and judicious and far-seeing employers were gradually realising the necessity of such examinations even in much smaller commercial undertakings. In regard to examinations of employees for sickness and accidents, employees who had been on the sick list for 28 days from any cause were sent to him in his official capacity for examination and report. That was found to be a considerable check upon the temptation to malinger or to unduly prolong illness after accidents or sickness. For instance, a man who had been drawing sick pay for nearly two years, a

the date of the passing of this 28-day rule, explained that he was weak and had a pain in his back, that the weather affected it, and that he was unable to work. Dr. Collie satisfied himself that the man had no physical disability, and pointed out to him that as he had not given notice of his injury a year ago he could not claim under the Employers' Liability Act; that the alleged accident happened prior to the passing of the Workmen's Compensation Act of 1906; that he (Dr. Collie) believed he was never really ill, and that he was to return to duty forthwith, otherwise he would report him unfit for duty, in which case he would be dismissed without compensation. The man returned to work, and had never complained since of his back or of any other portion of his anatomy. The 28-day rule, though by no means equal to systematic re-examination at set intervals, certainly enabled him to keep an eye to some extent generally upon the health of the staff. For instance, a tramway driver a little time ago was discovered to be suffering from aortic regurgitation, and a school attendance officer from locomotor ataxia, when they presented themselves on the expiration of 28 days' sick leave on account of a slight injury in the first case and a sprained ankle in the second. That the adoption of that method of medical inspection had been eminently satisfactory was proved by the statistics of one department alone, where some 1400 men were employed. All were medically examined before entering the service and all were entitled to medical attendance by district medical officers paid by capitation grant. It was found that prior to the institution of the independent medical inspection after 28 days the total number of days men were on the sick list amounted in one year to 14,400, whereas subsequent to the institution of the new rule that number was reduced to 9600—a reduction in a well-organised and disciplined small force of no less than 4800 days in one year, the percentage of reduction being 33⅓. During the corresponding periods the total number of men sick for more than 28 days was reduced by the somewhat surprising figure of 50 per cent. It was the duty of medical men to help the State to count amongst her citizens the maximum number of elements capable of working. In a large number of cases which eventually came before the courts introspection and subjective sensations were unwittingly fostered, and a traumatic neurosis was brought into being which was of psychogenic origin and did not rest upon the physical injury itself, but upon the idea of the injury, which in its turn was dependent upon the personal equation and the personality of those who were associated with the claimant in the lawsuit. Experience taught that closely similar injuries attributable to like accidents present one kind of clinical picture and run one kind of course amongst those who make no claim for compensation; but they presented a very different picture and ran a very different course amongst those who embarked upon the troubled sea of litigation. That difference was highly significant of the influence of litigation in magnifying pain and perpetuating incapacity.

Dr. A. H. BYGOTT (Barking) said that at present in the case of Friendly Societies when a second opinion was required one was often sought from a rival practitioner with very unsatisfactory results; in cases possessing a nervous basis the question of hypochondriasis was a very important one, and it was very difficult to know what to do with them.

Mr. E. H. HELBY (Birmingham) suggested as a means of dealing with cases of prolonged malingering that it should be made legal for the employer to demand, and the Court to order, that the workman should be treated at the employer's expense in certain scheduled institutions.

Dr. J. G. MCBRIDE (York) said that as medical inspector of the North-Eastern Railway Company he did not find much malingering among the regular staff, but chiefly among the casuals, such as dock hands, of whom numbers were employed.

Mr. W. F. DEARDEN (Manchester) said that malingering was more prevalent in case of accident than disease; there were several reasons for that. There were more industrial accidents than disease, and workpeople were not yet quite so conversant with obscure symptoms of industrial poisoning and disease as they were with the effects of accident, but he ascribed the main reason to the barrier raised by the particular function of the certifying surgeon.

Dr. W. SALISBURY-SHARPE (London) said that one of the difficulties causing loose and vague certification by club doctors was the demand of the societies for an instant certificate on the first interview when disease was often in an undeveloped form and an accurate diagnosis impossible.

Dr. COLLIE, in replying, said that it was his practice to induce doubtful functional nerve cases to enter a hospital, and he never had any difficulty in inducing employers to pay the actual out-of-pocket expenses of the hospital.

The work of the section was concluded with a paper on Industrial Diseases in Birmingham communicated by Dr. R. W. EDGINTON.

THERAPEUTICS AND DIETETICS.

FRIDAY, JULY 28TH.

President, Sir ROBERT M. SIMON (Birmingham).

A discussion was held on

The Scope of Immune and Normal Serum in Treatment.

Dr. T. J. HORDER (London) reviewed various diseases in connexion with the use of vaccines and antitoxins, expressing the general conclusion that antisera were more appropriate in the early or acute and vaccines in the later or more chronic stages. The difficulty of the subject was due largely to the need of correlation between the results of laboratory experiments and clinical observations. There was considerable scope for extension in the use of normal serum both as a curative agent and as a "control" against the use of "specific" sera. The properties of normal serum were described, both of animal and human origin, together with its use in the treatment of certain infective conditions. Dr. Horder then passed on to define the scope of immune serum, both antitoxic and bactericidal. He adverted to the neglect of serum administration which had followed the introduction of vaccine-therapy, which, he said, was unjustifiable. He emphasised the value of immune sera at the outset of acute infections, adding that high grades of immunity were essential to success. Commenting on the employment of univalent and polyvalent sera, he drew attention to the reversion in favour of univalent antistreptococcus serum in S. pyogenes infections, concluding with a recital of results.

Dr. E. C. HORT (London) referred to the various "hyperæmia" methods of treatment (congestion, poultices, &c.) as equivalent to normal serum-therapy, iodine applications representing in addition the effects of antiseptic lymph in circulation. Foreign sera locally applied exercised a restraining influence on inflammatory changes, relieving pain in ulcer of the stomach or duodenum. Exposed ulcers, as on the leg, healed in two or three weeks after remaining open for 15 to 20 years. Suppuration was arrested and healthy granulation induced. Remarkable healing effects followed the use of this agent in chronic sinuses and wounds other than those connected with bone. Mr. Warren Low used serum with great benefit to wash out mastoid sinuses. It was a valuable agent in promoting the healing of bedsores and especially of sinuses connected with the digestive organs, such as biliary and gastric fistulæ. This exhibited the antilytic power of serum. Its anti-hæmorrhagic power was seen when injected in hæmophilia and purpura or internal hæmorrhage from any cause, since it hastened the coagulation period and counteracted the influence of toxins. Oral administration was satisfactory, normal horse or sheep serum being employed which was sterile and atoxic. Serum also possessed a very pronounced antitoxic power.

Dr. E. W. GOODALL (Homerton) said there were very acute cases of purpura, mostly after scarlet fever, fatal in from 36 to 48 hours in which an appropriate serum would be welcomed. In bad cases of angina (cellulitis of neck) he had employed antistreptococcus serum daily in doses of 30–40 c.c., preferably by subcutaneous injection, but not with uniform results. He cited one case of acute erysipelas, however, where this agent had a really remarkable effect.

Dr. E HOBHOUSE (Brighton) cited an instance of apparently marked improvement in septicæmia, but the patient succumbed a few days later to purpura. He had also seen an unusually severe and acute erysipelas quickly recover after the use of a polyvalent antistreptococcus serum.

Dr. J. HADDON (Hawick), Dr. GEORGE W. ROSS (Toronto), Dr. T. D. MANNING (Weymouth), Dr. H. W. GARDNER (Shrewsbury), Dr. A. T. COLEMAN (Leicester), and Dr. OTTO F. F. GRÜNBAUM (London) also spoke.

Dr. D. J. A. CHOWRY-MUTHU (Wells) read a paper on

Continuous Antiseptic Inhalation in the Treatment of Pulmonary Tuberculosis.

Opening with some considerations as to the causes and conditions of pulmonary consumption, he went on to trace the development of modern treatment through simple exposure in the open air and graduated exercise till he arrived at the supplementary method of antiseptic inhalation, to which he attributed the chief beneficial effects and most rapid stages of improvement. The method is claimed to have a very ancient origin, volatile aromatic substances having been employed before the days of Hippocrates in Greece or of Susruta in India, being recorded by Charaka earlier than the Bhuddist era, 500 B.C. Galen praised the efficacy of sulphur and advised residence near Vesuvius, whilst Laennec mentions the use of vapours from aromatic plants, balsams, &c., in affections of the chest. The discovery of micro-organisms as the exciting cause of disease gave a fresh impetus to the inhalation treatment, and many new forms of apparatus and materials for inhalation came into vogue. Though opinions have varied as to the efficacy of the method, it has received new impulses by the work of many well-known physicians in recent times, and has been steadily prosecuted in the Mendip Hills Sanatorium. During the past 13 years formaldehyde had been the basis of the inhalant, successful cases being reported at the Tuberculosis Congress of London in 1903. Since that time the method and ingredients had been elaborated, two principal modes being employed: 1. The open method, formaldehyde being vapourised over a lamp in a closed chamber for an hour or less. 2. The continuous method, carried out by the aid of a mask fitting closely and conveniently over the respiratory orifices. The combinations employed were:—

A. Formalin, 2½ per cent.; chloroform, ℥i.; menthol, gr. x.; ol pini pumiline, ♏x.; sp. vin. rect. ad ℥i.

B. Formalin, 5 per cent.; guaiacol, 12½ per cent.; chloroform, ℥i.; menthol, gr. xv.; ol pini pumiline, ♏xv.; sp. vin. rect. ad ℥i.

C. Guaiacol, ℥ii.; chloroform, ℥i.; menthol, ♏xv.; ol pini pumiline, ♏xv.; terebene, ℥i.; sp. vin. rect. ad ℥i.

About ten drops sprinkled on the cotton-wool in the mask at half an hour or an hour's interval. The inhalation is commenced for a period of two hours, which is gradually extended to four, six, eight, and even nine hours daily, being reduced again as improvement occurs. This is in early uncomplicated cases. Should the patient's condition require confinement to bed, the inhalation is continued all day and as far into the night as possible, being suspended by degrees as improvement occurs. Treatment commences with A solution, then B, C being employed chiefly at night. Three hundred patients have been so treated with excellent results. Where dyspnœa or hæmoptysis occurred the treatment was suspended for a time. 52 per cent. made a complete recovery and resumed work. All stages of the disease were so treated. Dr. Chowry-Muthu adduced a number of reasons for attributing the main improvement to inhalation, and cited some specially satisfactory cases and incidents.

TROPICAL MEDICINE.

FRIDAY, JULY 28TH.

President, Sir FRANCIS LOVELL, K.C.M.G. (London).

The first item on the programme for the day was a communication by Dr. ANDREW BALFOUR (Khartoum) on

The Rôle of the Infective Granule in Certain Protozoal Diseases,

which he said was intended to be more of the nature of a demonstration of microscopical specimens than a paper. Dr. Balfour's view is that in certain protozoal infections, and more especially in spirochætosis and trypanosomiasis, what may be termed the "infective granule" plays an important rôle. It constitutes a stage in the life-cycle of the parasites, a stage hitherto in a large measure overlooked or unrecognised; it explains to some extent latent infections, and possibly clears up the somewhat obscure mechanism of relapses. Furthermore, the recognition of such a granule or spore may well modify our views in respect to prophylaxis and treatment, and may also lead to new discoveries as regards the histopathology of some of these protozoal diseases. These remarks, Dr. Balfour said, apply alike to humannd a animal infections. His own work had been confined to fowl spirochætosis and to syphilis, but Captain W. B. Fry, R.A.M.C., of the Khartoum Laboratory staff, had made important observations on trypanosomiasis, and indeed witnessed what Dr. Balfour terms "granule shedding" in the case of trypanosomes before he (Dr. Balfour) had seen it occurring in spirochætosis. He laid no claim to being the first to realise the possible importance of such granule infections. After referring to the historical aspect of the subject, he went on to explain that his discoveries did not consist in the recognition of the infective granule, but in finding out that it is shed by the living parasite both naturally and when the parasite is under the influence of some toxic drug, such as salvarsan, which intensifies the phenomena, and which led Dr. Balfour to observe it in the case of the fowl spirochæte. Some description was then given of the various microscopical specimens he had to show to the Section relating to: 1. Fowl spirochætosis; spirochætæ in the fowl or chick. The phenomenon of these spirochætæ shedding granules is greatly intensified by salvarsan; they are resistant and not easily killed by that drug. Some appear to enter the red cells. These granule inclusions undergo development and pass through a state of schizogony, and finally the schizonte breaks up into tiny merozoites which are discharged into the blood stream. Their further history remains unknown. 2. Syphilis; treponema pallidum, a granule shedder. Salvarsan greatly stimulates this action. It is probable that these granules cause tissue irritation, are responsible for latent infections, for failures in therapeusis, and for the tertiary lesions of syphilis. 3. Trypanosomiasis. Captain Fry has shown that T. brucei and T. evansi shed living granules; they become plasmodial masses, out of which eventually trypanosomes are developed. Dr. Balfour concluded by saying that his observations appeared to justify Dobell's views that the spirochætæ are best placed in a group by themselves, *the spirochætoidea*. Closely allied, however, are the trypanosomes, and whether we call them protozoa or not, he believes that granule shedding will be found to be a phenomenon presented by many of the pathogenic, and possibly by some of the non-pathogenic, protista, to use a non-committal term and yet sufficiently descriptive.

Professor W. J. R. SIMPSON (London) then opened a discussion on

The Sanitation of Villages and Small Towns in the Tropics, with Special Reference to Efficacy and Cheapness.

He said there was no surer way of getting a scheme for improving the sanitary condition of a place rejected than the submission of costly estimates. These estimates were not prepared by the sanitary officers, but it was very advisable that the latter, to protect themselves, should possess a fair knowledge of the cost of sanitary appliances and the price of labour. No elaborate schemes were needed for villages and small towns. As a rule, their sanitation was simple and inexpensive if properly carried out. There were no hard-and-fast methods, cheap and efficient, applicable to all villages or towns alike. In some localities biting and non-biting flies, bugs, fleas, or mosquitoes have to be contended against, while in other places there were none, or but few. Efficacy and cheapness depend primarily on the sanitary policy adopted; secondly, on a thorough grasp of sanitary matters in their general, microbial, and entomological bearings, and a due perception of their respective values; and thirdly, on their systematic and regular application to local circumstances. It was a common policy to let things drift and to postpone action until disease broke out; this gave neither efficiency nor cheapness. Fortunately, there had been signs of late that this old procrastinating policy was passing away and a more active one was being adopted; this was due perhaps partly to the teachings of the schools of tropical medicine, and partly to the influence of the Colonial Office which was now more concerned than formerly about public health matters in the colonies. Sanitation seldom keeps pace with our knowledge which has been acquired by experience and research. The field of preventive medicine was rich in its triumphs and discoveries, but the value of these was lost if the knowledge was not applied, or only applied indifferently, for the improvement of the public health. One of the most obvious things in the tropics to the observer was the repetition of the same insanitary conditions in many different localities. A removal policy, after insanitary conditions had arisen, had been largely adopted

as the sanitary policy of the day, and had been responsible for much inefficiency and ultimately for great expenditure. This was especially true with regard to new trading centres which, begun on the old insanitary lines, grew rapidly into unhealthy areas. In some places excellent regulations existed, but they were seldom put into force. The usual practice was to allow conditions inimical to health to arise, and then, under the stimulus of an epidemic or a rising death-rate, to remove those conditions in haste, no matter what the cost might be. A sanitary policy may, for want of adequate knowledge, be wrongly directed and fail, causing in the end unnecessary expense to rectify it, leading to reaction and hindering sanitary progress. An active policy needs adequate guidance and advice, without which there is risk of failure. The obnoxious system of asking for sanitary advice after the works have been completed, instead of before they were begun, is not only responsible for most of the mistakes, but also for most of the unnecessary costliness of sanitary measures. This seeking of advice at the wrong time may possibly arise from the fact that the medical man in a case of sickness is called in after the patient is ill, and it is not realised that his functions in preventive medicine are of a different kind, and that his advice is required at a different time. He is sometimes called in by the executive after the completion of a scheme which his conscience compels him to condemn, and consequently he incurs the displeasure of those in power; any alterations he may suggest are almost certain to turn out costly. He is thus placed by a wrong system in an antagonistic position as regards the other executive officers, and this in turn leads to a hesitancy on their part to consult him in the future. It is very advisable that his relations with these officers should be of the most cordial description, and that his advice should be appreciated by them. One sanitary officer had summed up the situation by saying "it is not fault finding but fault prevention that should be aimed at." The preventive policy should apply to European and native quarters alike. There is some risk that most attention may be paid to the isolated European quarters, and that those of the native may be neglected. "It is unnecessary here," said Professor Simpson, "to enter into the various details of an active preventive policy. It is essential, however, to recognise that the general, microbial, and entomological aspects of sanitation should fit into one another, each being interdependent on the other. In the application of sanitary measures continuity of effort is necessary, both for efficiency and cheapness; but this continuity will not be obtained locally, nor will the regulations be enforced when the medical and other officers are changing unless the conditions are periodically inspected by a higher sanitary authority which has an influential position in the councils of the Government."

Dr. W. T. PROUT, C.M.G. (Liverpool), said that those who were familiar with sanitary matters in the tropics knew the difficulty of getting estimates beforehand for the proposed works. It was a good policy to try to remain always on good terms with the executive officers, and to endeavour to induce them to regard sanitary questions from the proper points of view. The mass of ignorance and prejudice among the native races was well known to all those who had served in the tropics. We must look to the education of the younger generation in sanitary knowledge to remove these obstacles to progress by teaching the natives the simple principles of hygiene. There was a danger in allowing the executive officers in the colonies to have too much control over sanitary measures. There should always be a large preponderating medical and sanitary influence.

Dr. A. J. CHALMERS (Colombo) thought that the question before the Section was far too large to be discussed at one sitting. He agreed that it was necessary, if progress were to be made, to educate the native. This was being done in Ceylon, for the native teachers were brought in turn each year to Colombo for a three weeks' course of instruction in hygiene by simple kindergarten methods. When they return to their schools they teach the children by the same kindergarten methods the elements of sanitation. Examinations, oral and practical, are held annually, and if sufficient knowledge of the subject is shown the school obtains an extra grant from the Government. He thought it was also necessary to interest the native doctors, the irregular practitioners of the tropics, in sanitation. He urged the association of the religious portion of the community with public health matters. It was essential that sanitary officers should at all times be on good terms with the Public Works Department. It was his opinion that one of the greatest troubles in the East was the spread of tubercle, due in part to overcrowding in insanitary dwellings. Sanitary measures, if enforced, might be expected to reduce the ravages of this disease.

Dr. BALFOUR (Khartoum) alluded to the want of British-trained sanitary inspectors in our colonies and dependencies. These officers should form the backbone of the sanitary service. Everything depended on such men being honest, tactful, independent, fearless, and trustworthy. They should correspond to the non-commissioned officers in the British army. If British certificated sanitary inspectors were sent out to the colonies an additional course of training beforehand in anti-mosquito measures and other special work needed in the tropics would be necessary.

Dr. M. CAMERON BLAIR (North Nigeria) spoke of the difficulties of effecting improvement in sanitary conditions in a Mahomedan community. They should utilise, as far as possible, the religions of the natives in advancing the standard of public health among them. The Khoran, unfortunately, gave no help whatever in this direction. He thought it was impossible, for financial reasons, to obtain trained British sanitary inspectors in the tropics. They must be content to do the best they could with native inspectors, some of whom were quick to acquire the necessary knowledge.

The discussion was continued by Lieutenant-Colonel A. H. NOTT, I.M.S. (Calcutta), Dr. DAVID GALLOWAY (Singapore), Dr. R. H. KENNAN (Dublin), and Major R. W. H. JACKSON, R.A.M.C. (Plymouth). After which Professor SIMPSON replied. He said he had purposely in his address avoided details of sanitary work, but had made his remarks as general as possible, so as to be adapted to all parts of the world. Many of the hindrances and difficulties to sanitary progress might be overcome by common-sense and tact. After Professor Simpson had replied, Dr. CHALMERS suggested that the Council of the Association should be asked to approach the Colonial Office requesting it to instruct its officers to investigate the sanitary condition of each colony, and to present a scheme for the improvement of existing insanitary conditions. After a brief discussion, in which Dr. CAMERON BLAIR, Dr. PROUT, and the PRESIDENT took part, Dr. CHALMERS withdrew his proposal, and the matter was postponed till the next meeting of the Section. When this had been agreed upon, Mr. JAMES CANTLIE (London) proposed that the Schools of Tropical Medicine should be asked to include in their course of teaching the instruction of certificated sanitary inspectors in work which would fit them to act in tropical countries. This proposal was seconded by Dr. PROUT, and among those who spoke upon the subject were Dr. K. S. WISE (British Guiana) and Dr. BALFOUR, the latter emphasising the great need for such trained inspectors in the colonies; though they might cost money, he said, their work would lead to a saving in the end, not only of money, but of life and of health. Finally this proposal, like the previous one, was postponed for consideration till the next meeting of the Section.

Dr. H. P. COLE (Alabama), of the United States Public Health and Marine Hospital Service, read a paper on

Transfusion in Pellagra.

Pellagra, he said, was a subtropical malady associated sometimes with acute or chronic disease. He then sketched out its geographical distribution in the United States, and briefly referred to the various forms in which the disease was met with. Some cases ran a rapidly fatal course. In these it had been thought that transfusion might be of service. Some of the cases brought to him for hospital treatment were quite beyond help, and in some instances the patient had died on his way to the hospital. The treatment by transfusion was only tried in severe cases, many of which from the nature of their attack were expected to die. He admitted that the method of treatment was as yet only in the experimental stage, but the results, so far, were very encouraging. Of 30 severe cases in which transfusion had been employed only 13 died, some of the latter being in a hopeless state when the treatment was undertaken. Excluding these cases, an astonishing improvement was noticed in the patients, a few days after the transfusion, in their mental condition and a

gradual increase in body-weight, one case indeed gaining 30 lb. in 11 weeks. Recovery was established in a period varying from one to four months. The results of the treatment compared very favourably with those obtained by other means, and should therefore receive a further extended trial.

After a few observations by Dr. F. M. SANDWITH (London) Dr. L. W. SAMBON (London) gave a *résumé* of his work on the etiology of pellagra, and the facts on which he based his theory that it was an insect-borne disease.

Mr. JAMES CANTLIE (London) took the opportunity of informing the Section that Dr. Sambon would shortly resume his inquiry into the etiology of pellagra in Italy, and Austria, and other parts of the European Continent, funds for the purpose having been generously provided, it was understood, by Mr. H. Wellcome.

Dr. W. YORKE, Director of the Runcorn Research Laboratory, read a paper on

The Mechanism of the Production of Suppression of Urine in Blackwater Fever.

Suppression of urine being a by no means infrequent sequel of blackwater fever, and the symptom being an extremely grave one, the mechanism of its production was a problem of considerable practical importance. Whether, on the one hand, the occurrence of hæmoglobin free in the blood plasma, and its subsequent elimination by the kidneys, are sufficient to produce suppression of urine through mechanical blocking of the renal tubules; or, on the other hand, whether a nephritis or nervous inhibition of glomerular secretion is to be regarded as the essential factor in the development of this condition in blackwater fever was a question which had not been definitely settled. With the object, therefore, of throwing further light on the subject Dr. Yorke undertook his investigations. For this purpose he carried out a number of experiments and observations on rabbits, the results of which may be summed up as follows. In certain circumstances the mere passage of hæmoglobin through the kidneys of a healthy animal is sufficient to cause suppression of urine owing to occlusion of the lumen of the renal tubules by plugs of granular material derived from the hæmoglobin. The process is considerably facilitated by any factor which tends to lower the blood pressure of the animal, and as a result the secretion of water by the Malpighian capsules. On the contrary, when the blood volume is sustained by the injection of saline solution and by feeding the animal on moist food a large amount of hæmoglobin (41 grammes) may be injected without any tendency to suppression of urine. It appears that Dr. Yorke's observations have an important bearing upon the treatment of suppression of urine in blackwater fever in man. He points out that on the earliest sign of any diminution in the volume of urine voided radical measures must be adopted. The patient should be given large quantities of fluid by the mouth if possible or by the rectum, and cardiac stimulants, such as digitalis and caffeine, administered. Should these not produce a copious flow of urine recourse ought at once to be had to large intravenous injections of normal saline solution. Dr. Yorke's experiments indicate that it is useless delaying the adoption of these measures until suppression has actually commenced. At this stage it is improbable that any procedure will be adequate to displace the casts. This is in agreement with clinical observation that late intravenous saline injections usually fail to relieve suppression. When suppression has once developed and continued, even for a short period, the injury done to the kidneys is such that the result must of necessity be almost invariably fatal. Dr. Yorke, during the reading of his paper, showed a number of lantern slides illustrating his microscopical preparations.

This paper, having concluded the business of the Section, Dr. PROUT proposed a vote of thanks to the President, and after Sir FRANCIS LOVELL had replied the meeting terminated.

THE PATHOLOGICAL MUSEUM.

THIS was no mere collection of isolated examples of morbid anatomy, for a real attempt had been made to represent the morbid changes illustrative of a few definite diseased states, and the attempt had materialised into *un fait accompli*. It is true that to a few the value of a museum specimen lies in the specimen itself as a piece of dead abnormal tissue, just as a rare stamp may be of interest to a philatelist, but to most practical workers it only becomes of value in association with the clinical history and other data. To these latter museum specimens are made to live again and teach important lessons, and to this group belong the organisers of the Birmingham Museum. It would be impossible to do justice to the entire collection, but we may discuss a few of the groups perhaps with advantage.

In the Section of Medicine there was a comprehensive series illustrating affections of the pancreas, for the most part the result of the work of the Leeds school. A specimen from a diabetic man, aged 46, was atrophied and fibrosed, and the ducts had been opened to expose numerous white calculi. Acute hæmorrhagic pancreatitis and fat-necrosis here became realities in the presence of so well preserved and lifelike specimens. One specimen of fat-necrosis was said to have been consequent on obstruction of Wirsung's duct by bile mud, in a case of suppurative cholecystitis and gall-stones, and several pieces of omentum were shown with typical fat-necrosis.

A satisfactory attempt had been made to illustrate visceral syphilis, and amongst this collection were two fine examples of the rarely seen condition—syphilis of the lung. These showed ulceration of the air passages and marked perivascular and peribronchial fibrosis of the pulmonary tissue and pleura, with occasional miliary gummata; the man died suddenly from hæmoptysis, and the nature of the disease might easily be overlooked in similar conditions. There was also an example of a fibrous stricture of the œsophagus, suggestively syphilitic, and numerous ulcerations of the intestines, not to forget a syphilitic stricture of the rectum in a man, aged 45, showing extreme fibrosis and thickening of the coat for some 3 inches. The man had died from rupture of the distended colon, and the only other case we recollect seeing also came from a man who died from traumatic rupture of the sigmoid (instrumental). Visceral syphilis of the less common types is an extremely difficult lesion to diagnose with certainty, but many of the chronic fibrotic lesions of syphilitic origin will be more easily distinguished in the future with the aid of Wassermann's reaction, which was readily obtained in the post-mortem blood of the rectal case mentioned above. Mention must be made of a piece of lung with a large honeycombed tumour of the size of an orange, which, though simulating actinomycosis, was actually tuberculous; and also an uncommon specimen of infective endocarditis from a woman, aged 25, in which the pulmonary orifice was the seat of an extensive mass of vegetations.

A magnificent collection had been loaned by the Cambridge committee for the study of special diseases consisting of specimens and skiagrams illustrating the morbid changes found in the joints of cases of "so-called rheumatoid or osteo-arthritis, and chronic gout." Skiagrams and casts and macerated specimens from individual cases enhanced the value of this exhibit, and though there is some difference of opinion as to nomenclature there can be none as to the anatomical changes. Here were to be seen exemplified the atrophic and hypertrophic varieties of rheumatoid arthritis in all stages—the early fibrillation, with velvety appearance of the cartilages, the lipping of the cartilages, the overgrowth of the synovial fringes—in one case so extensive as to recall the condition of tuberculous synovitis—the formation of osteophytes and the advanced condition of atrophy and ivory eburnation of the apposing surfaces of the joints with pseudo-ankylosis from the extreme osteophytic overgrowth. Also the less universally recognised condition of true bony ankylosis.

Some fine examples of gout, most of which seem to have arisen in the infirmaries of the metropolis, demonstrated the heavy deposits of urates in the synovial bursæ (prepatellar bursæ and those of the phalanges), and also the ankylosis sometimes associated therewith, and some kidneys had been preserved in gelatin in which the pyramids were permeated with white streaks of urates. A small granular kidney with streaks of urates in section was especially interesting, as was also a larynx showing a tophaceous deposit on a vocal cord. It must be remarked that gouty deposits are not uncommon in the joints of many people at autopsy in whom there have been no symptoms of such, but unfortunately the examination of joints is not part of the usual routine of an autopsy.

Several examples of Charcot's disease were to be found in the various sections described, showing by photographs, radiograms, and macerated specimens the hypertrophic variety with osteophytic overgrowth and enlargement occurring in the knee and elbow, and the atrophic destructive variety as exemplified in the shoulder.

In the section devoted to Diseases of Children some of the anatomical causes of jaundice were demonstrated. A specimen of congenital obliteration of the bile ducts had come from a child aged 6 months, and there were three examples of multilobular cirrhosis (the typical "hobnail" or "gin-drinker's" liver), the alcoholic etiology of which has been for some time now recognised as requiring revision, if not as entirely erroneous. The most typical specimens of this have been seen in very young children and in patients who have certainly never partaken of alcohol. The fatty degeneration of liver in acid intoxication was demonstrated and also the same process in delayed chloroform poisoning. An unusual type of tuberculoma of the liver and spleen was indistinguishable from the lymphomata found in Hodgkin's disease, though experimental proof was forthcoming in an adjoining exhibit of the viscera of the guinea-pig which had been inoculated with some of the diseased tissue and which died with typical tuberculosis.

The brain and heart of a girl who died from chorea showed extensive subarachnoid and ventricular hæmorrhages in the former, and a ring of fine and recent vegetations round the mitral valves, a condition often occurring, but seldom seen, in the post-mortem room. A rare complication of posterior basic meningitis (meningococcal) was shown in the form of pericarditis. Pericarditis of the tuberculous variety was illustrated by two specimens; one from a child aged 2, who died from tuberculous meningitis, showed universal adhesions of the pericardium. A rare specimen was a metastatic osteo-sarcoma of the heart secondary to growth of femur in a girl, aged 15; and as a curiosity was shown the hypertrophied heart of a child, aged 6, whose kidneys were typically granular and only weighed ¼ oz. each.

The hæmorrhages into the various viscera and beneath the dura occurring in acute leucocythæmia were represented in specimens from various cases.

There were many examples of the unusual condition of congenital fœtal goitre, and side by side with these some specimens of hygroma of the neck, and a unique specimen of a false aneurysm of the internal carotid artery in a boy, aged 5, which simulated retropharyngeal abscess with fatal results. The effects of inherited syphilis on a child, aged 9 months, was shown as multiple cerebral thrombosis with patches of softening.

In a series illustrating some of the typical forms of pulmonary tuberculosis in childhood we were pleased to note one specimen drawing attention to the tuberculous enlargement of the glands at the bifurcation of the trachea, which, according to the notes on this case, may sometimes be the primary seat of pulmonary tuberculosis. The importance of these glands, so often left inflamed after whooping-cough, measles, &c., is, we think, seldom sufficiently appreciated.

Pyelonephritis of childhood is little known, so it was clinically valuable to see two kidneys from children, aged 3½ months and 7½ months respectively, who had died from this condition, which is due to B. coli infection; the urine is in these cases acid, and it contains pus cells and B. coli, and the true diagnosis is often overlooked. The condition is so important and so much commoner than is supposed that we were pleased to see these specimens and have the account of the cases.

Finally, amongst the children's diseases we have to note the numerous examples of hypertrophic stenosis of the pylorus, and four examples of primary cancer of the suprarenal body with metastases in one case in the calvarium.

In the Surgical Section there was a collection of hypernephromata about 40 in number, forming a unique collection of that peculiar tumour which arises from the adrenal body itself or from adrenal rests in the kidney tissue and which presents the structure of the normal adrenal tissue. They were mostly from adults, though one had come from a child of 4; some were malignant and enormous and had invaded all the neighbouring viscera, even the inferior vena cava, and had fungated through the abdominal wall; others were benign and small and confined within the capsule of the kidney. One such small growth was found accidentally in a man who died from advanced carcinoma of the tongue, whilst another had been found in a man who died from carcinoma of the stomach—strange examples of multiple malignant growths in the same patients. Where symptoms had existed they included pain and hæmaturia, though often no symptoms are recorded. The exhibit showed the extraordinary malignancy manifested at times by such growths, and after seeing it their existence will always be borne in mind by the observer in diagnosing early renal disease.

Amongst some examples of general cystic disease were two from patients who had both reached the advanced age of 43 years.

An instructive exhibition was formed by a large collection of malignant growths of the alimentary tract which had been removed by operation, appended to most of which were the after-histories of the cases, showing that where the growths had been excised the patient was free from recurrences often to the time of recording (15 months in some). Cancers of the transverse colon were shown from several cases in which no recurrence had occurred in 15 months, and from one patient, aged 78, were obtained two separate growths (columnar-celled carcinomata) which had caused stricture of the transverse colon and which had not recurred six months after removal. In this group, for comparison, were placed three specimens of hyperplastic tuberculosis of the cæcum which simulated cancer. There were many specimens of gastric ulcers that had been successfully excised, and one extreme example of idiopathic dilatation of the colon in a boy aged 12. There was a carcinoma of the appendix from a man aged 40, and a sarcoma of the same tissues from a boy aged 17, who two and a half years after appendicectomy is still quite well. The diseases of the breast included many specimens of tuberculous mastitis and of Paget's disease, and one example of streptotrichosis from a girl aged 24. A hydatid cyst which was removed from its attachment to the transverse colon of a woman aged 27, where it formed a cystic and freely moveable tumour reaching from the pubis to above the umbilicus, is sufficiently interesting to be noted.

In the Obstetrical and Gynæcological Section there was, perhaps, the finest collection of fibromyoma ever collected in one spot. These were of all varieties, from all parts of the uterus, of all sizes, and in all stages of degeneration; fibroids associated with pregnancy, which in some cases had gone on to a normal termination, but in others had become impacted, and yet in others had undergone necrobiosis. Red degeneration was abundantly represented, and all other varieties of retrograde changes, including hyaline, mucoid, lymphangiectatic, œdematous and cystic changes, and many examples of true calcification, some specimens being of stony hardness, like the celebrated specimens said to be found in graveyards. A large myoma with lymphangiectatic cysts weighed 26 lb., and histologically was of that type which so simulates sarcoma that the question can only be determined by the after-history of the patient. Another myoma with cystic degeneration, weighing 56 lb., had been successfully removed from a woman aged 58. There were also fibroids undergoing a true sarcomatous change, and others associated with cancer of the uterus or with complications of the appendages. Examples of adenomyomata and sarcomata of the uterus were so numerous that one might have been misled into thinking the conditions were fairly common. The sarcomata had come from single and married females.

Pathological changes associated with pregnancy were represented by hydatidiform moles, in one case actually shown with the fœtus, and the malignant variation of this—the chorion-epithelioma—which latter were shown to the number of about a score. There were examples of early chorion epithelioma and of metastases, in one case in the thyroid gland. One case had come from a married woman who had had no children, and another from a woman in the early stages of her first pregnancy, though she had been married ten years; but the majority had come from multiparous women. A case of tuberculosis of the cervix, which produced a cauliflower-like mass, diagnosed from the curettings, was from a multipara aged 41, and another from a multipara aged 37 was associated with a doubtful carcinoma, though 18 months after hysterectomy the patient was quite well. An example of pyometra, associated with B. coli, was from a multipara aged 55. We can only mention the specimens illustrative of the pathology of tubal mole and of epithelioma of the vulva associated with leucoplakia, and the interesting medico-legal specimen of a pregnant uterus pierced with a crochet needle, which could not be felt on examination, but had been removed with the uterus and its three months' fœtus with satisfactory results. The possibilities of vaginal operations were illustrated by Professor Strassmann's specimens, which included some enormous tumours and some illustrations of a uterus bifidus which had been reduced to a single fundus by operation with subsequent pregnancy on

two occasions, though no data were forthcoming as to what would have happened had the original conditions remained.

The Dermatological Section was a veritable picture gallery, and here were collected some 200 beautiful wax models made by Dr. R. Cranston Low and Miss Rae of Edinburgh and Dr. G. G. Stopford-Taylor and Dr. R. W. MacKenna of Liverpool, which were life-like reproductions of many skin affections. Especially interesting was a cast of an arm showing sporotrichosis, a disease less heard of in this country than on the continent. This parasitic disease was fully illustrated by cultures and microscopical preparations of the sporothrix itself and by histological specimens from experimentally produced lesions in animals. It may be that with a widespread knowledge of this infection it will be more frequently recognised in our hospitals.

The Section of State Medicine was full of specimens of general interest. Tuberculosis was exemplified thoroughly both in man and animals. Tubercle bacilli were pictured in specimens of dust obtained from the Birmingham pavements; pure cultures of bovine and human tubercle bacilli were shown and numerous specimens from cattle, pigs, birds, and fish. Amongst a large collection of specimens of parasitic diseases of man and animals there were a hydatid cyst of the human ovary and a striking example of "gad-fly" larvæ attached in numbers to the mucosa of a horse's stomach. Also the heart of a pig with swine erysipelas showing valvular verrucose endocarditis and resembling the infective endocarditis of man. Fat necrosis occurring in the sheep and the mesentery of the pig were of much interest to the human pathologist, as were also the kidney of an ox with sarcomata therein and a leukæmic pig's spleen, but the most striking specimen of all was one of secondary chloroma on the surface of a pig's kidney, with the green colour of the growth well preserved.

In the Odontological Section were collected specimens to illustrate the pathology of retained teeth, microphotographs, and specimens illustrating that vexing condition pyorrhœa alveolaris, the etiology of which still leaves much to be desired. Mr. A. Hopewell-Smith had prepared an interesting exhibit showing the solubility, or, as it appeared, the insolubility, of the various commoner sweetmeats, including the common acid drop, chocolate, "bull's eyes," &c., and also plate cultures of the "caries" bacteria obtained from each of these, but it must be noted that solubility in saliva is a far different thing from solubility in water.

In the Section of Radiology and Radium Mr. J. Hall-Edwards had arranged a striking collection. The diagnosis of abnormal and pathological conditions of the abdominal viscera with the aid of X rays is now a routine procedure, and in the case of the hollow viscera bismuth is a valuable aid. Mr. Hall-Edwards had been conducting some experiments on kittens with bismuth meals, and some of his radiograms were shown. Dilatation of the œsophagus made a striking picture in comparison with malignant stricture. Hour-glass stomachs and dilated stomachs were numerous, and one example of a prolapsed transverse colon showed the bismuth shadow reaching down to the pubis in the erect position of the patient. An interesting series of plates illustrated the use of bismuth paste in mapping out psoas abscesses before and after treatment. Amongst numerous calculi in the urinary tract were some radiographs of calcareous glands and phleboliths resembling calculi, but distinguished from them by radiographing with a ureteral catheter in position so that the shadows were seen to be outside the ureters. One radiograph of osteomyelitis of humerus showing a distinct central rarefaction was prominent amongst a valuable collection of bone and joint lesions, as were an oxycephalic skull, and some examples of cervical ribs.

INTERNATIONAL DENTAL FEDERATION.

THE opening meeting of the Eleventh Annual Session of the International Dental Federation, or permanent bureau for the organisation of international dental congresses, was held on August 1st in the theatre of the Royal College of Surgeons of England, Lincoln's Inn-fields, under the honorary Presidency of Sir Henry Butlin.

Mr. W. B. PATERSON, the President of the Federation, delivered an address, in the course of which he referred to the work of the Federation in connexion with the public dental hygiene movement, mentioning the establishment in Germany of 120 school dental clinics, and instituting comparisons between the energy displayed in that country and the slowness shown in England in grasping the dental problem in its best, simplest, and most economical method of solution—viz., the school clinic; a slowness which he attributed entirely to different financial conditions and systems of control existing in the two countries. He was grateful to the Chancellor of the Exchequer for turning the minds of people to the financial aspects of the health question, even if he had borrowed from Germany his ideas on compulsory thrift, thus ably seconding the scope of the Medical Inspection Act of 1907, which was working a silent revolution throughout the country, and which in the end must result in the most beneficial effects upon the health of the people. On the subject of dental education Mr. Paterson explained that the methods of teaching operative dentistry was the question that would engage the attention of the delegates from the different leading dental schools throughout the world. Dental pedagogy was then introduced for the first time into the work of the education committee of the Federation. Referring to the exclusion of dentists not possessing medical qualifications in addition to their dental diplomas from meetings of the International Medical Congress in 1913, Mr. Paterson said that the Federation regretted the action of the Congress Executive Council at Budapest; but in view of the intimate relationship existing between dental affections and general systemic disease, he regarded the separation of dentistry from medicine as of a temporary character.

Mr. Paterson then introduced the leading delegates and the accredited representatives of foreign Governments to Sir Henry Butlin—viz., Dr. E. C. Kirk (Dean of the Dental Faculty of the University of Pennsylvania), Professor Jessen (Strassburg), Dr. Brophy (Chicago), Dr. Weiss (Habana), Dr. Etchepareborda (Buenos Aires), Dr. Aguilar (Madrid), Dr. Grevers (Utrecht), Mr. Van der Hoeven (Hague), Dr. Godon and M. Francis Jean (Paris), Dr. Rosenthal (Brussels), Chevalier Guérini (Naples), Dr. Daubry (St. Petersburg), Dr. Schaeffer Stuckert (Frankfort-on-Main), the Secretary-General, who presented the recently completed transactions of the International Dental Congress of 1909.

Mr. NORMAN G. BENNETT, honorary secretary of the British Dental Association, extended a welcome to the members of the Federation, and invited them to attend the association's annual meetings which followed immediately upon the Federation's.

Sir HENRY BUTLIN, in an eloquent speech, expressed the pleasure that he felt in presiding over the Federation's opening meeting within the walls of his College. Possessing such an admirable odontological museum as the College did, and so many interesting dental exhibits in the work of John Hunter, he could conceive no more fitting place for the meeting of such a body of dental experts. Sir Henry Butlin then proceeded to discuss cancerous affections of the tongue, with especial reference to possible predisposing dental causes. Of leucoplakia as a preceding local condition of cancer in persons predisposed by gout, rheumatism, or syphilis, he was quite certain. Of the exciting causes of leucoplakia, he placed tobacco smoking first. He asked the members present to recall frictional conditions resulting from rough metal stoppings, or edges of teeth leading to leucoplakic patches, and he asked for information respecting the qualities of red vulcanite, as used in plates, which might have a similar irritating tendency. In conclusion, Sir Henry Butlin showed the well-known and classical specimens of teeth prepared by John Hunter in illustration of transplantation, as also several examples of pathological neoplasms and affections of the dental periosteum.

At the conclusion of the honorary President's very interesting address a hearty vote of thanks was, on the motion of Mr. PATERSON, carried with acclamation by the largely attended meeting.

The succeeding meetings of the Federation and its committees on Hygiene, Education, Documentation and Bibliography, and Dental Terminology were held at the University of London.

A visit to the Barnet factory of the Dental Manufacturing Company was paid by the Federation for the purpose of witnessing, among other interesting demonstrations, the methods of preparing and mixing the ingredients of red vulcanite rubber.

THE LANCET.

LONDON: SATURDAY, AUGUST 19, 1911.

The Incidence of Anthrax.[1]

IT has long been a matter of comment by our continental critics that so small a proportion of the research work carried out in this country is directly done at the instigation of the State, and that the expenses incidental to such research are defrayed either by private enterprise or by large commercial undertakings. Whether this condition of affairs, leaving as it does individual workers wholly unfettered by red tape, tends to produce more valuable results or not is a matter upon which we do not feel called upon to pronounce an opinion; but the fact remains that many most valuable results have been, and are being, obtained by workers whose devotion to research has been rendered possible by the munificence of one or other of our great City companies. The Goldsmiths and the Grocers have for many years past expended large sums annually in the promotion of research, and at the present moment we have before us a report published by the Worshipful Company of Leathersellers on "The Incidence of Anthrax amongst those Engaged in the Hide, Skin, and Leather Industries, with an Inquiry into Certain Measures aiming at its Prevention." This report has been drawn up by Dr. CONSTANT PONDER, the bacteriologist to the Company's technical college, who has recently been engaged in investigating industrial anthrax, and its perusal satisfies us that considerable progress has been made in the attempt to render innocuous to the workman the infected hides which reach this country in such large numbers.

Dr. PONDER, in one of the opening passages of the report, refers to VIRGIL'S description of cattle anthrax in the Third Georgic, and points out that even in ancient times it was recognised that the incautious handling of infected hides might have terrible results:—

> "Ardentes papulæ atque immundus olentia sudor
> Membra sequebatur."

He proceeds to discuss fully such subjects as the animals that commonly suffer from anthrax, the localities in which the disease is commonest and the seasons in which it occurs, the symptoms of the disease in animals, and the conditions under which the infection is conveyed, together with the collection, cure, and shipment of hides and skins. From his multifarious investigations Dr. PONDER draws several interesting and important conclusions. Some 40 per cent. of all the cases of anthrax in British leatherworkers are due to handling Chinese or East India goods. The cutaneous infection is the most common, 82 per cent. of the cases exhibiting pustules on the head or neck. No case of pulmonary anthrax infection, such as occurs amongst the Bradford woolworkers, has been reported amongst those working in hides and skins, and only two cases of the intestinal form have occurred in the last seven years. Speaking generally, infection is contracted either at the wharf and dockyard or in the tannery, these two localities combined giving a percentage incidence of 50. The point in Dr. PONDER'S report which is well brought out, and upon which great stress is laid, is the fact that the infective material—i.e., the anthrax spore—is most likely to be found in discharges dried upon the fur, or in blood spilled when the animal was flayed and likewise dried upon the fur, and at the cut ends of subcutaneous capillaries; so that the most urgent economic problem that presents itself is how to destroy the anthrax spores when protected by a thin layer of blood, mucus, or fæcal material without at the same time destroying the commercial value of the hides in which the infection occurs. Having elicited these facts, the report next deals with the measures aiming at the prevention of industrial anthrax, and in this connexion Dr. PONDER has carefully studied the many and varied methods, having for their object the destruction of the infective material, which have been suggested from time to time by workers at home and abroad. Perhaps the most ingenious method is that suggested by BREKLE, which attempts to take advantage of the fact that at a temperature of 43° to 44° C. existing anthrax spores germinate, but no new ones are formed. BREKLE would expose the hides and skins to this temperature for 48 hours and then plunge them into a liming pit with sufficient milk of lime to destroy all the resulting vegetative forms. This method, however, would hardly commend itself to the leather trade, for if the disinfectant used is present in sufficient concentration to destroy the anthrax spores the hide itself is ruined for commercial purposes. More promising lines of inquiry are opened up when it is shown that no case of anthrax infection has ever been traced to wet, salted hides, and Dr. PONDER strongly recommends that all hides and skins should be imported into the country in the wet, salted state. This is a plan which has much to recommend it from the point of view not only of the leatherworkers themselves, but also of the brokers and even of the shippers, but pending the introduction of regulations enjoining this practice active disinfection would seem to be necessary. On a previous occasion[2] we have commented upon the work carried out by Dr. F. W. EURICH on behalf of the Anthrax Investigation Board in Bradford, and his attempts to render wool innocuous by steeping the bales before they are opened in formaldehyde solution, but when dealing with hides and skins the use of formaldehyde becomes impracticable, since it so injures the consignments as to prevent them being turned into good leather.

Dr. PONDER finally gives his support to the method suggested by Mr. SEYMOUR JONES, the chairman of the International Commission for the Preservation, Cure, and Disinfection of Hides and Skins. This method practically converts the goods into the "wet salted" state, and consists

[1] A Report to the Worshipful Company of Leathersellers on the Incidence of Anthrax amongst those Engaged in the Hide, Skin, and Leather Industries, with an Inquiry into Certain Measures aiming at its Prevention. By Constant Ponder, M.D. Cantab., D.P.H., Bacteriological Assistant at the Leatherseller's Company's Technical College, Bermondsey, London; Second Student, John Lucas Walker Trust. Published by the Worshipful Company of Leathersellers, London. 1911. Price 2s. 6d.

[2] See THE LANCET, Nov. 14th, 1908, p. 1453.

in treating the hides for 24 hours in a soak containing 1 per cent. of formic acid and 0·02 per cent. mercuric perchloride, and then transferring them to the ordinary brine pit. Under laboratory conditions this method is capable of destroying the infection on hides, and, equally important, does not interfere with the due action of the subsequent processes to which the hide is subjected in its transformation into leather. It is further pointed out that the method is so simple in application that it could readily be employed at the port of shipment.

Vaccine Therapy in Gynæcology.

THE treatment of puerperal septicæmia by means of antistreptococcic serum, from which so much was anticipated on its first introduction, must be held to have proved disappointing. A committee appointed by the American Gynecological Society reported upon 352 cases treated with serum among which the mortality was about 20 per cent., while among the cases treated in other ways the death-rate only amounted to some 5 per cent. It is difficult to believe that this conclusion really represents the truth of the matter, since it is probable that only the worst cases and those which failed to respond to other measures were treated by serum, but it serves to show how hopeless it is to attempt to prove the value of therapeutic measures of this kind by statistics. It is especially difficult when dealing with the many varying diseases which may result from the action of the streptococcus, since there is at the present time no agreement among writers on the subject as to how many varieties of this organism exist. Some maintain that they are all practically the same, while others have enumerated as many as 18 different species. It is obvious that statistical results, referring as they often must do to diseases not in reality due to the same organism, can have but little value. Not only may the diseases produced by streptococci be of very varying nature, but it is at the present time uncertain that the same strain of organism is always involved in the production of what appears to be the same disease. Possibly this is the explanation of the fact that one brand of serum may fail in any given case, while another of different origin may succeed. For this reason, if no result follows the use of a serum, another kind whenever possible should at once be tried. Further difficulty in carrying out this mode of treatment is offered by the fact that the serums keep very badly and therefore must be used freshly prepared. A fallacy only too often present in some, at any rate, of the recorded cases is the absence of proof that the streptococcus, and that organism alone, was the offending agent. Obviously, unless it is certain that the case is one actually due to the presence of the streptococcus in the blood or in the tissues, the use of an antistreptococcic serum can be of no avail, nor can any beneficial result which may be obtained be attributed with certainty to the action of the serum. It must be remembered, too, as Sir ALMROTH WRIGHT has pointed out, that the method of preparing many of these sera is far from perfect, and that the quantity of protective material which many of them possess is very problematical, while they may even contain bacterial products which may produce effects other than those desired.

The disappointing results following the use of antistreptococcic serum, more especially in cases of puerperal fever, led not unnaturally to the method of treatment by vaccines being received with a considerable amount of hopefulness. It is true that cases of generalised infection, such as occurs in general septicæmia, do not appear at first sight to belong to the class of case likely to be benefited by the use of a vaccine. Inasmuch as in these cases large numbers of bacteria must be already circulating in the blood, producing an intoxication, it would appear irrational to expect from the introduction of further bacteria anything more than an aggravation of the intoxication. The good results, however, which have in some cases followed their use appear to show that even in such instances they may prove of value. It must be remembered, too, that according to WRIGHT'S views the antibacterial elements, or so-called bacteriotropic substances, are manufactured in the tissues at the seat of inoculation. In the case of an inoculation, therefore, the vaccinating elements will come in contact with the tissues in a more concentrated form than if they were introduced into the blood stream and diluted by the whole volume of the circulating blood. It would, therefore, seem not irrational to assume that a patient, even when suffering from general septicæmia, might derive benefit from the use of a vaccine. In answer to the further objection that the degree of intoxication will be increased, may be urged the fact that the local toxic effect upon the tissues and the elaboration of antibacterial substances are inexplicable unless we assume that the toxic bodies are retained *in situ* at the seat of inoculation. The question seems, therefore, one which trial and experience alone can decide. The report of a committee appointed by the American Gynecological Society to investigate the results of vaccine-therapy in gynæcology was published in the last volume of its Transactions. The committee considered the whole matter very fully, and its report contains some valuable conclusions. In cases of chronic gonorrhœal infections it found that satisfactory results appear to follow this mode of treatment, and especially was this the experience in treating the vulvo-vaginitis of little girls. The committee endorses the view that vaccine-therapy has a definite place in the treatment of chronic gonorrhœal affections in the female, and states that in many cases it appears to be more efficient than local antiseptic treatment. While, as a general rule, in cases treated by vaccine-therapy the best results are obtained when the vaccine is prepared from the actual organism present in the body, in cases of gonorrhœa equally good results appear to be obtained by the use of a stock preparation comprising a dozen different strains. The practitioner will, however, be disappointed unless he remembers that in some cases of chronic discharge, produced primarily by the gonococcus, the organism has quite disappeared, and the persistence of the discharge is due to the presence of staphylococci, often of a low grade of virulence. In such cases naturally a gonococcal serum will prove of no avail. In the treatment of infections of the urinary tract, such as the pyelitis and pyelonephritis of pregnancy, useful results are obtained, but they appear to be much the same as those following ordinary symptomatic treatment—namely, the alleviation of the symptoms without the complete disappearance of the organism from the urine until

the termination of the pregnancy. Vaccine treatment has been carried out in some chronic infections of the generative tract by a few observers, but the results are too few to be of much value. In cases of local suppuration following on pelvic inflammation good results might be anticipated by the use of appropriate vaccines, and encouraging examples have been reported.

When we consider the circumstances existing in cases of acute generalised infection, which may be present in any case of puerperal septicæmia, it is obvious that the remedy must be capable of dealing with such conditions as general peritonitis or general blood infection. It is, therefore, not surprising that the results obtained are far from encouraging. Further, as there appear to be so many different varieties of streptococci it is necessary to use a vaccine prepared from the particular organism present; this requires time for its preparation, and time in such cases is a most important element in the success of the treatment. It may be said, then, that while cases in which the infection is in any way localised are likely to derive great benefit from vaccine-therapy, the outlook in cases of general infection is not nearly so hopeful. At the same time the question is one which still is open for solution, and it is one which can only be decided by continued and searching trials. It is possible that better results may be attained from a suggestion made by WRIGHT. As we have mentioned already, the rationale of vaccine-therapy is found in the exploitation of the unexercised immunising capacities of the uninfected tissues, the antibacterial substances being elaborated by the tissues into which the vaccine is injected. If this be so, may it not be possible to obtain a summation effect in cases of general infection by simultaneous inoculations at several different sites? The value of such a procedure is for the future to decide, but it would seem to hold out much promise, especially in cases where an immediate and rapid effect is required, as, for example, in cases of such general infection as occurs in puerperal septicæmia.

Fashion and Progress in Operative Surgery.

WE complete this week a comprehensive, though necessarily abbreviated, report of the scientific proceedings at the various sections of the recent meeting of the British Medical Association at Birmingham, and take the opportunity to refer in some detail to the Address in Surgery. This was delivered by Mr. JORDAN LLOYD, who took as his opening theme the changes which have occurred in the surgical outlook between the several occasions on which the Association has met in Birmingham. Each time that the annual meeting has been held in that city the surgical orator has dealt with some current questions. At the first meeting, in 1856, LANGSTON PARKER delivered the address, and dealt with the treatment of cancers with caustics, advocating this method of treatment, not merely for small and superficial cancers of the skin, but for all cancers, of whatever size and location. The great argument which he advanced in favour of this method was the inutility of operations with the knife performed for the removal of the disease. Although it cannot be denied that caustics can sometimes effectively remove small superficial cancers, especially some forms of rodent ulcer—and, indeed, the recent employment of carbonic acid snow shows that similar methods are considered trustworthy—yet few surgeons would now venture to treat a malignant growth of any size with caustics, and the method finds its chief exponents in the ranks of quacks. There are some who will still remember the lecture on Cancer Cures by SPENCER WELLS in the "sixties," and his exposure of the danger, pain, and uselessness of caustic methods. In the 55 years which have passed by since LANGSTON PARKER delivered his address operative surgery has made immense strides, and the extension of the operations performed for malignant disease has been followed by a greater percentage of recoveries, so that hardly anyone ventures to dispute the efficacy of operative surgery in cases which have not progressed too far, while no surgeon would consider that he had done his best for a cancerous case, unless the lesion were quite a superficial one, by trusting to a caustic application. We know more and we can do more.

Sixteen years elapsed before the Association met again in Birmingham, when OLIVER PEMBERTON, who delivered the Address in Surgery, selected for notice, as among the conditions which he regarded as of prime importance in surgery, surgical aneurysms and lateral lithotomy. Surgical aneurysms appear to have been more common at one time than at present, if we may judge by the attention paid to their treatment, though we know of no statistics which can fully decide the matter. At all events, at present in this country, aneurysms which may be called surgical are extremely rare, and their treatment is simple and well established, though much ingenuity has of recent years been displayed in devising new methods of dealing with them. It is, at all events, certain that no surgeon of to-day would consider surgical aneurysms as a subject suitable for a full dress oration to a large congress in plenary assembly. The condition does not play a sufficiently important part in ordinary life, while the opportunities for elaborate technique offered by its treatment are quite surpassed in the vast possibilities of modern operative procedure. PEMBERTON in his next subject, the performance of lateral lithotomy, dealt with an operation which has practically ceased to exist. At one time it was of immense importance; it was looked upon as the operation which best displayed the skill, the knowledge, and the dexterity of the surgeon, and the publication of a series of cases without a death was a legitimate source of pride to some surgeons. Yet now it is certain that a large majority of our younger surgeons, and even some who are approaching middle age, have never seen the operation performed. Some of the smaller text-books of operative surgery are omitting to describe it; for instance, it is not to be found in the last edition of TREVES and HUTCHINSON'S "Student's Handbook of Surgical Operations." Lateral lithotomy has had to give place partly to the suprapubic operation and still more to lithotrity as practised by BIGELOW. Lateral lithotomy was ingenious and effective; in skilled hands it gave remarkable results,

and the mortality from it was very small. Yet in spite of its merits, and in spite of its results, it is dead.

In 1830 LAWSON TAIT delivered the Address in Surgery at Birmingham. The more recent date makes the fact less obvious in his stirring words that fashions change as surgery progresses, but none the less some of TAIT'S most dogmatic teaching is now not acquiesced in. It is needless to follow Mr. JORDAN LLOYD through the other examples which he brought forward of operations and methods no longer in vogue that have had their day and ceased to be. We may feel sure that in their turn many of our operations and our methods on which we pride ourselves will be superseded and will pass into the realms of the forgotten. Some must survive, and amongst these we may with confidence place the modern treatment of wounds; the details will be modified, the methods will be changed, but the intention of excluding germs from the wound will still persist. This, however, will be rather the perpetuation of a principle than the maintenance of a technique. Few probably will be the exact methods now employed which will be able to withstand the gnawing tooth of time. Thus a survey of some of the successes of the past should arouse in us a feeling of humility and a feeling of pride. We recognise in the establishment of unchangeable principles the genius and industry of our forerunners; we perceive in the oblivion that has fallen upon the very exploits with which they were most well pleased the fact that some of our own finest technical work will die, or will at any rate be superseded by its legitimate developments. As the world progresses surgery will progress. New conditions must bring new problems to the surgeon, but new discoveries will furnish him with new weapons against them.

Annotations.

"Ne quid nimis."

THE SUN IN POISONOUS DOSE.

IT is not often in this country that sunshine becomes a monotony, but there is little doubt that a good many people, quite apart from any agricultural or industrial avocations, would just now regard with relief a cloudy and rainy day. Insolation has its glories for medical science, inasmuch as not all the carbolic acid in the world can furnish such a supply of germicidal power as does the sun. Sunlight completely destroys the vitality of most disease producing organisms. These intense chemical effects of sunshine cannot, however, be without great influence upon the human organism, the question of germs apart. Posology must play its part even with sunshine, and with overdoses bad effects may well be a probability. It is an interesting coincidence that labour troubles of no mean magnitude have broken out during an unwonted spell of sunshine. Of course, we are not regarding the strikes as caused by the heat, as the reasons for the prevailing unrest have many of them been obvious for many months. But it is not at all improbable that the heat has played its part in the form which the manifestations have taken. Let us remember that the failure of the white races to colonise certain tropical tracts has been attributed to the excess of light which there prevails, and not to the heat or humidity. The white man in the tropics gradually becomes disinclined to work under the influence of the actinic agencies of the sun; he grows neurasthenic, and finally breaks down. The widespread discontent of the labouring classes reached an acute stage during a period of excessive and intense light which promises to break all existing records. Have the forces of the potent sun, consequent upon a long period of chemically active sunshine, altered the energies of the body and mind of the worker, as in the case of the would-be coloniser in the unsuitable tropics? In an admittedly bad state of affairs, has an overdose of sun proved a poison? In other words, should sunshine, like so many good things, be doled out on posological lines, lest it poison the individual? When the dark days of winter come we shall yearn again for some of this "poison," knowing, however, full well that then the doses, even when continuous, are less potent; but it is quite possible that the instinct is a sound one which makes many of us, inhabitants of what should be a temperate zone, almost resent unbroken heat.

THE SCOPE OF A MEDICAL MAN'S AUTHORITY.

IN another column will be found a letter with this title, over the initials "M.D.," which describes how the writer, after being called in to attend a footman, treated him at the house of his mistress, as the man refused to be moved to the nearest infirmary. The somewhat unlooked-for circumstance connected with the case consists in the mistress being now disposed to criticise the medical man on the ground that he has instituted a precedent under which her servants, if they become ill, will in future insist upon being nursed in her house, to her inconvenience. The point has apparently been suggested to the lady by her friends, who can hardly have included a lawyer among them, or he would have been careful to explain to the mistress that the authority which she exercises over her domestics arises out of her contract with them. They are not the servants of the medical practitioner whom she calls in to attend them, or whom they may employ, and his authority over them is limited to recommendations which, so far as he is concerned, they are at liberty to disregard. In the case put forward by "M.D." we have no doubt that he gave sound advice to the footman when he told him that he "must" go into the nearest infirmary, and when he declined, as we understand, to sanction his taking a journey of 150 miles. The man, however, could have insisted upon going home, provided that he were capable of taking the necessary steps to do so, and his medical attendant could not have prevented him from going any more than he could lawfully have forced the infirmary upon him. The servant's employer is in a different position. As to the precise extent of the mistress's authority upon such an occasion we have no intention to advise, but, except that it should always be exercised with due regard to the dictates of humanity, we have no doubt that the lady could not be compelled to keep her footman in the house owing to the mere fact of his preferring to remain there. The absolutely forcible removal of a sick servant might be a step from which a master or mistress would shrink, but there are degrees of insistence open to them which go beyond any pressure that a medical attendant can exert or can be asked to attempt. The case described would seem to have been one for more or less authoritative persuasion on the part of the employer, and if we assume that the medical man was ready to take the responsibility of saying that treatment in the infirmary referred to would be adequate, and that removal to it would not entail risk or undue suffering to the patient, there is no reason why such persuasion should not have been exercised. After all, however, the prolonged illness of a servant such as

that described is not an incident of frequent occurrence even in large establishments, and the mistress referred to will probably have ample time to consider a course of procedure to meet the next occasion before it arises. Let us hope that the footman was duly grateful for the consideration accorded to him and that his mistress will have no reason to regret her kind treatment of him.

ARTERIAL LESIONS IN ANCIENT MAN AND THEIR LESSONS.

FEW pathological conditions have given rise, perhaps, to more diverse views as to their etiology and significance—and, as a consequence, to more conflicting rules of conduct—than arterio-sclerosis and allied arterial degenerations. This condition has been held up as the pathological "horrible example" by antitobacconists, total abstainers, diet faddists of all kinds, contemners of athletics and of the wear and tear of modern life. Apart, therefore, from its antiquarian interest, a paper by Dr. Marc Armand Ruffer describing his examinations of the Arterial Lesions found in Egyptian Mummies [1] deserves thoughtful consideration for the sidelight it throws on ultra-dogmatism in support of preconceived controversial theories. Dr. Ruffer first describes the procedure of dissection and the preparation of the specimens for the microscope. It appears that the embalmers of the twenty-first Dynasty removed not only the viscera but the aorta and most of the muscles of the body, packing the spaces thus created with mud, sand, or rags. Sometimes sawdust mixed with a resinous material of unknown nature (but certainly not bitumen) was used. It was only rarely that a portion of the aorta or one of the large arteries was left behind, but fortunately the posterior peroneal artery, owing to its deep situation, often escaped the embalmer. The isolating of the arteries is a very disagreeable process, for the hard black material lining the walls of the cavities after removal of the packing is not removable by water, but has to be taken away mechanically, thus creating an irritating dust. The packing does not appear to contain pathogenic microbes, for no inflammation ever followed the numerous cuts and scratches. The arteries, when dissected out, are placed for 24 hours in a solution containing carbonate of soda 1 per cent. and formol 0·5 to 1 per cent. They are then immersed for some weeks in glycerine, to which a few drops of formol have been added. Calcified artery is decalcified in Marchi's solution for 24 hours and cut in the usual manner. Dr. Ruffer gives a description of specimens from 24 subjects, consisting of aorta, brachial, anterior and posterior tibials, posterior peroneal, femoral, profunda, radial, ulnar, and palmar arch. The results of the examination are given and points of interest noted as follows: (1) that the muscular coat may be changed almost wholly by calcification, following on degeneration of the muscle fibre, into a magma of no particular structure; (2) that the disease very often seems to pick out the point of origin of the smaller arteries. Dr. Ruffer considers that there can be no doubt that the condition is exactly the same as is seen at the present day—namely, calcification following on atheroma, and that, in spite of the 3000 years that have elapsed since death, the lesions are still recognisable by their position and microscopical structure. "The earliest signs," he says, "of the disease are always seen in or close below the fenestrated membrane—that is, just in the position where early lesions are seen at the present time. The disease is characterised by a marked degeneration of the muscular coat and of the endothelium. These diseased patches, discrete at first, fuse together later, and finally form comparatively large areas of degenerated tissue, which may reach the surface and open out into the lumen of the tube." The correspondence of the disease to that recognised at the present time is obvious. In Dr. Ruffer's opinion, therefore, "the old Egyptians suffered as much as we do now from arterial lesions identical with those found in the present time. Moreover, when we consider that few of the arteries were quite healthy, it would appear that such lesions were as frequent 3000 years ago as they are to-day." As to causation, Dr. Ruffer considers that tobacco can certainly be eliminated, as this drug was not used in ancient Egypt. While alcoholic beverages played a part in Egyptian social life, Dr. Ruffer holds that it is clear that the Egyptians, as a race, are not, and never have been, habitual drunkards. Moreover, Dr. Ruffer has found the disease just as common in over 800 post mortems of Mussulmans who had certainly never touched alcohol in their lives. This fact has led him to call in question the importance of alcohol as a cause of arterial disease. As to the "increased wear-and-tear" theory of modern life, there is no evidence that old Egyptians worked too hard, either mentally or physically; the time tables of workmen which have been discovered show that the Egyptian navvies of ancient times toiled practically the same hours as the Egyptians do now. In Dr. Ruffer's opinion, too, the theory that the wear and tear of human life has increased is a myth, the fact being, he says, that our life is easier and that we work less than our ancestors did. Meat, too, is something of a luxury in Egypt, and Dr. Ruffer's experience in Egypt and the East has not strengthened the opinion that meat eating is a cause of arterial disease. Finally, he holds that strenuous muscular exercise can also be excluded as a cause, for there is no evidence that ancient Egyptians were greatly addicted to athletic sports, though they liked watching professional acrobats and dancers. In the case of the priests and priestesses of Deir-el-Bahari, which formed the greater proportion of those whose mummies were examined, it is highly improbable that they were addicted to much muscular exercise.

[1] Arterial Lesions found in Egyptian Mummies (1580 B.C.–525 A.D.). By Marc Armand Ruffer, Journal of Pathology and Bacteriology, Vol. XV., 1911.

THE CONDITIONING OF WINE.

ONE of the most delicate wines is claret, and it is its delicacy which, justly we think, has brought it the *sobriquet* of a temperance wine. It contains least alcohol, acidity, and sugar amongst wines, but it easily spoils, and according to recent researches the element which spoils it is oxygen. The quicker it spoils by this agency the more delicate as a rule is the wine, and a good claret is not a wine to be left more than many minutes exposed to the air before it is consumed. There are some people who do not understand this, or do not appreciate the horrid result of their action, for they will re-cork an unfinished bottle. If this were done under an atmosphere of nitrogen there would be no complaint, for if oxygen is carefully excluded the wine remains sound and palatable. When wine, in fact, is left in an inert atmosphere, and for choice nitrogen appears to be the best atmosphere for the purpose, clarification rapidly takes place and the wine soon begins to assume a character with which good bottling and long keeping endow it. Fermentation ceases, the organisms die and retire to the bottom with a sediment which is desirably eliminated. It is not improbable that the maturing process of a wine in bottle is due to the small quantity of oxygen in the air first being absorbed, leaving only inert nitrogen which fails to support the vitalities of the organisms normally present in the wine. When the activities of the organisms thus cease the wine assumes in a quite short time all the qualities of a matured sound article. This view is expressed with such

confidence that the proposal has seriously been made to pump an atmosphere of nitrogen over wine stored in bulk.

EPIDEMIC DROPSY IN CALCUTTA.

IN the latter part of 1909 and during 1910 a considerable outbreak of epidemic dropsy, or beri-beri, occurred in Calcutta. Major E. D. W. Greig, of the Indian Medical Service, was deputed to inquire into its causation, and has now furnished a first report.[1] The main conclusions arrived at are that no specific cause is to be found in the blood or œdematous fluid in cases of epidemic dropsy, which disease closely resembles "ship beri-beri," that it is not infectious, and that it is a disease of nutrition, being induced by a "one-sided dietary." During the investigation of the distribution of cases in Calcutta it was found that the better-class European quarter escaped altogether; it was also found that two populous wards inhabited by Hindus were but slightly affected in comparison with those around them. On further inquiry it appeared that these two wards were very largely inhabited by a community of Hindu merchants, known as Marwaris. These people consume much less rice than the Bengali population generally, taking wheat (*áta*) and pulse instead. On further inquiry it was found that the few cases of epidemic dropsy that did occur in these wards were among Bengalis (rice eaters), not among Marwaris. This was a very significant fact, as the sanitary conditions of both sets of people in these wards were similar, and were no better than in the native quarters of Calcutta generally. Chemical analysis and histological examination showed that in the process of "polishing" carried out in the mills at Calcutta and elsewhere certain constituents essential to nutrition are removed from the rice, and that the *áta* habitually eaten by Bengalis is also so finely sifted that it is deprived of these ingredients even more than rice itself. Pigeons were fed on "polished" rice, such as is consumed by the people affected, and were found to lose weight and to suffer from characteristic polyneuritis, while control pigeons fed on a mixture of wheat and pulses kept up their weight and remained in good health. Analyses have shown that the amount of phosphoric anhydride in unpolished rice is about twice as much as is present in polished samples. Further, the two severe outbreaks of epidemic dropsy in Calcutta that have occurred in 1877–79 and 1907–09 have synchronised with a high price of food grains, and with a fall in prices they have come to an end. It has to be remembered that the two prominent features of epidemic dropsy—viz., swelling of the feet and breathlessness—may be produced by ankylostomiasis and by over-indulgence in alcohol; to sustain the diagnosis of beri-beri, therefore, each case must be carefully examined. Also, the treatment of food grains by "polishing," and the removal thereby of portions containing physiologically important constituents of food, only forms part of a general problem, the "one-sidedness" of a dietary; this may be brought about in other ways—e.g., by an exclusive consumption of fine, starchy, wheat flour, such as fine *áta*. This inquiry substantiates the conclusion arrived at by Fraser and Stanton in their investigation of beri-beri causation in the Federated Malay States (1909), that the polishing of rice in steam mills removes substances essential for the nutrition of nervous tissue—viz., phosphorus compounds. Chemical analyses by Mr. D. Hooper, who was associated with Major Greig, showed that unpolished rice contained 0·6 to 0·8 per cent. phosphorus pentoxide, while the polished grains contained only 0·40 to 0·45 per cent., and the polishings (koorah) contained over 3 per cent. The phosphorus and the fat are concentrated in the outer layers, while the nitrogen is distributed throughout the grain; the same holds good in the case of wheat. This inquiry is still progressing, but that the phosphorus content of the dietary is the predominant factor in causation appears to be proved. Prevention would consist in improving the dietary value, either by using unpolished food grains, or by adding rice and wheat bran removed in the cleaning process, or by substituting for part of the rice consumed some other grain rich in phosphates, such as *mung dal* (*Phaseolus radiatus*); the addition of fresh meat would also be of value. Major Greig concludes by observing that the present mode of estimating diet values by determination of the quantities of protein, fat, and carbohydrate requires further investigation.

[1] Scientific Memoirs of Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 45. Epidemic Dropsy in Calcutta. First Report. By Major E. D. W. Greig, M.D., D.Sc., I.M.S. Calcutta, 1911. Price 2s.

BRUIT SYNCHRONOUS WITH THE HEART SOUNDS HEARD OVER A PULMONARY CAVITY.

AT a meeting of the Société Médicale des Hôpitaux of Paris on April 7th M. G. Variot and M. Henri Dumont showed a woman, aged 22 years, who had a very rare bruit. She was admitted into hospital for pulmonary tuberculosis. There was marked depression of the chest on the left side below the clavicle. In the first, second, and third intercostal spaces was a slight undulation corresponding to the pulsations of the heart. On percussion there was in front on the left side slight dulness at the apex, and below this more marked dulness which extended from the median line across the chest to merge into dulness at the base. On the left side behind there was slight dulness at the apex and dulness at the base below the inferior angle of the scapula. On the right side percussion was normal in front, but there was slight dulness at the apex behind. The apex beat was in the fourth intercostal space and above it a faint systolic murmur of variable intensity was heard. At the apex of the right lung, in front and behind, fine and crackling râles were heard. On the left side respiration was harsh and slightly blowing and there were some splashing sounds. A bruit of a metallic character, with its maximum at the inner border of the scapula behind and in the third intercostal space in front, was distinctly heard. It was also heard at a distance of three metres from the patient, but with a different timbre. It sounded like the "tic-tac" of a large watch or of a clock, and was synchronous with the pulsations of the heart. It was heard at night by the other patients in the ward. The bruit was very variable; the patient said that it was absent on certain days, but it rarely disappeared for an entire day; usually it reappeared after some moments. The patient said that it disappeared when she had palpitations of the heart and when she stopped breathing. On compressing the thorax with the hand at the level of the third intercostal space the bruit was modified and its rhythm was changed; on increasing the pressure it disappeared entirely. Its intensity varied from moment to moment; it was more distinct when the mouth was opened than when it was shut, as a result of resonance in the upper air passages. Finally, it varied in rhythm; sometimes it was simple "tic," but usually it was double—a "tic-tac"; several times it was observed to take the form of a long and two short sounds ("tic tac-tac"). There was abundant thick, greenish-yellow expectoration containing numerous tubercle bacilli, but there was no pyrexia. Radioscopy showed that the diaphragm was two or three centimetres higher and moved much less on inspiration on the left than on the right side. The greater part of the left lung, especially at the apex, was opaque; there was a clear zone only opposite the third intercostal space. The opacity was such that it was impossible to distinguish the

limits of the shadow of the heart which merged into that of the shadow of the lung. However, it could be stated that the heart had been dragged to the left by adhesions, for there was no shadow on the right of the spine corresponding to the right auricle. There were certain opacities on the right of the spine which seemed to correspond to swollen bronchial glands. On the right side the apex of the lung was opaque, but much less so than on the left side. Dr. Variot and Dr. Dumont suggested that the bruit was produced by the passage of air bubbles through a layer of fluid contained in a tuberculous cavity; hence its metallic character. They explained the synchronism with the heart by pleuro-pericardial adhesions by means of which the cardiac pulsations caused the pressure of the air in the cavity to vary so that air passed in and out. A somewhat analogous phenomenon has been described by Barth and Roger in their Traité d'Auscultation. They refer to a bruit heard at a distance from the patient which they compare to the quacking of a duck. They attribute it to an aneurysm projecting into a pulmonary cavity with a narrow orifice, and driving out air with each pulsation. Hence the bruit ceases when the patient stops breathing, as the air in the cavity is not renewed. However, this explanation was not applicable in the present case, for there was certainly no aneurysm. The physical signs heard over a large cavity which contains fluid and which communicates freely with a bronchus are capable of much variation. The murmur described above is rare, but is occasionlly heard when there is an extensive excavation on the left side. It has been attributed by some observers to conduction of the heart sounds through the cavity.

ALCOHOLISM, BIOMETRICS, AND DIALECTICS.

THE heated controversy provoked last year by the memoir of Professor Karl Pearson and Miss Ethel Elderton on "The Influence of Parental Alcoholism on the Offspring" has spent its energy. Professor Pearson, however, is too doughty a fighter to be silenced by the indifference of the spectators to the outcome of the contest, and, in default of other channels for giving publicity to his views, he has returned to the attack in a fresh pamphlet in the series of frankly polemical publications which he issues under the expressive title of "Questions of the Day and of the Fray." It is hardly necessary to say that Professor Pearson's treatment of his critics—Sir V. Horsley and Dr. Mary Sturge are the culprits—is vigorous, and it is only fair to admit that the passages which he quotes from his opponents show that they also have been able to contribute their share of strong language. In all controversy conducted in this spirit there is, of course, some risk that the cloud of invective may obscure the real issues, but in this particular instance the discussion has become so hopelessly befogged that such an explanation seems insufficient and we are forced to look for some deeper source of confusion. Professor Pearson's latest pamphlet may perhaps help us in this quest, for it brings out rather more clearly than has yet appeared the extraordinarily nebulous character of the data about which all this pother has been raised. To illustrate this point it is sufficient to take a single instance of the matters in dispute between the biometricians and Sir Victor Horsley. They fail to agree, it appears, about the "alcoholism" of a woman who figures in the report of the Edinburgh Charity Organisation Society, from which Professor Pearson obtained a large part of the material for the original memoir. In describing the habits of this interesting lady, Sir Victor Horsley, we learn, used the words "drinks but never seen to be drunk," whereas according to Professor Pearson the report had it "not teetotal but never seen the worse for drink." Professor Pearson sees in this change of terms a proof of Sir Victor Horsley's wickedness, but the ordinary person will perhaps be prepared to admit an alternative inference, and will see in the charge of perversion and in the facts that have given rise to it nothing more than a proof of the undesirability of making medical diagnoses on such remarkably slender evidence. It is to be feared, however, that this is not the sort of conclusion that some of our investigators are likely to admit. Biometricians—some at any rate—appear to be under the impression that data which imply medical diagnoses are better collected by people who are unbiased by medical knowledge. Professor Pearson himself would seem to lean to this view, for he thinks it worth his while in this pamphlet to retail a lurid story about a family of his acquaintance in which one member died from what "a most distinguished medical man" described on the death certificate as cancer of the stomach, and another was operated on by "a not less distinguished surgeon" for appendicitis, whereas, we are apparently to understand, a due appreciation of the family tradition would have shown that in both instances the trouble was due to a hereditary liability to have "something go wrong in the gall-bladder." It is a pity that a writer of Professor Pearson's eminence should use "arguments" of this kind, which can only discredit the scientific methods of which he is the recognised exponent.

CULTIVATION OF THE SPIROCHÆTA PALLIDA.

AN important advance in our knowledge of the bacteriology of syphilis is reported in the *Journal of the American Medical Association* of July 8th by Dr. Hideyo Noguchi, writing from the laboratories of the Rockefeller Institute for Medical Research, New York. He claims a success, which has hitherto been denied to investigators, in the discovery of a method for the pure cultivation of the treponema pallidum. Previous researches have, it is true, been partially successful, but in all these there has been some weak point in the chain of evidence. In some cases the micro-organisms cultivated have proved incapable of setting up characteristic lesions after inoculation into animals; in others a successful animal experiment has been performed, but with cultures which contained portions of the infected tissue with which they were inoculated, so that the lesions set up in the animal may possibly have been due to spirochætæ surviving in the human tissue used for inoculation of the culture media. Dr. Noguchi's method was to inoculate his media, not from human lesions, but from the artificially infected testicular tissue of the rabbit, which contains very many spirochætæ. The only medium which has proved suitable is serum water to which a piece of sterile rabbit tissue (preferably kidney or testicle) has been added. Liver tissue is not so good; it contains bacteria, and its large content of carbohydrate tends to rapid acidification of the cultures. The serum water, in test tubes, is rendered suitable for anaerobic cultivation by a layer of paraffin oil poured upon its surface. After the first cultivation strict anaerobiosis is not essential; and the organism can in subcultures be transferred to solid media such as gelatin or agar. The first growths are usually contaminated by other bacteria, but Dr. Noguchi has contrived two means of separating these from the spirochætæ. In the first the spirochætæ are grown through filters which retard the passage of other organisms, while the second method depends upon the fact that in stab cultures the spirochætæ grow away from the line of puncture into the surrounding medium while other bacteria fail to do so. Finally, there is the fact that the spirochætæ cultivated by these methods are pathogenic in so far that after inoculation into the rabbit's testicle they produce characteristic histological changes and are found growing freely in the infected tissue. It remains to be seen whether the same technique will enable bacteriologists to

grow the spirochæta pallida in pure culture when taken direct from suitable lesions in man; in these experiments the original spirochætæ were, as has been said, derived from experimentally infected rabbits.

THE HYGIENIC ASPECT OF PLAYGROUNDS.

THE President of the Board of Education has appointed a departmental committee to inquire and report (*a*) whether it would be consistent with due regard to educational and hygienic considerations that the minimum standard of playground accommodation for new public elementary schools prescribed in the building regulations of the Board of Education—viz., 30 feet per head of accommodation—should be modified or adjusted according to the size, design, or situation of schools, the proximity of recreation-grounds or open spaces, the density of population, the cost of land, or otherwise; (*b*) how far it is possible or desirable to define more precisely the standard of playground accommodation which the Board of Education will require under the code of regulations for public elementary schools in the case of existing schools or to regulate the practice of the Board of Education in dealing with cases in which the playground accommodation is considered to be insufficient. The committee will consist of Mr. L. A. Selby-Bigge, C.B., principal assistant secretary of the Elementary Education Branch of the Board of Education (chairman); Sir George Newman, chief medical officer of the Board of Education; Mr. J. C. Iles, H.M.I., divisional inspector for the North-Western Division; Mr. F. H. B. Dale, H.M.I., divisional inspector for the Metropolitan Division; Mr. A. B. McLachlan, of the Local Government Board; with Mr. L. J. Morison as secretary.

A NEW DIAGNOSTIC SIGN OF ORGANIC NERVOUS DISEASE.

IN the *Interstate Medical Journal* for July there is an article by Dr. Charles Gilbert Chaddock, of St. Louis, entitled "A Preliminary Communication concerning a New Diagnostic Nervous Sign." Dr. Chaddock has been struck by the ready occurrence of the Babinski phenomenon when the same form of irritation that has elicited it from the sole of the foot is applied to the skin just beneath the external malleolus, while no response can be obtained from other skin areas of the lower extremity. In cases, however, where irritation of almost any area of skin over the lower extremity calls forth the extensor toe response, the external inframalleolar area does not distinguish itself in any way. Impressed by these observations, Dr. Chaddock has been in the habit of commencing examination of the skin reflexes in patients by investigating the nature of the response from the above-mentioned region. His method is to scratch the skin with a moderately pointed nail-file. In some cases the merest touch is sufficient to excite the sign; in others, rather severe scratching may be required. He has found that the most sensitive point is usually over a slight depression just in front of the lower margin of the external malleolus. From an examination of a series of 245 cases, including normal individuals as well as a great number of all sorts of nervous cases, Dr. Chaddock is satisfied that irritation of the external malleolar area causes no reaction normally; in pathological cases extension of the great toe, or of all the toes, or fan-like separation of them, obtained from this area, is indicative of organic disease of the spino-cortical reflex paths. He concludes that the external malleolar sign is usually present when the ordinary Babinski toe response is present; that it is often present when the latter is absent; that it may precede, coexist with, or outlast, the latter, and that its presence or absence is of considerable help in the interpretation of doubtful movements obtained by stimulation of the sole of the foot. In his experience no case presenting an extensor response from the sole has failed to present also the external malleolar sign, but reference is made to a case where this occurred in the experience of a colleague. Dr. Chaddock adds in a footnote: "Subsequent observations show that even plantar flexion of the toes excited from the external malleolus is as significant as extension or fanning of them; that in cases of unilateral capsular lesions the external malleolar sign often occurs on both sides—on the paralysed side with Babinski, on the unparalysed side without Babinski (homologous motor fibres). It has been found pure and unilaterally in two cases of cerebro-spinal meningitis (epidemic) and in a case of tuberculous cerebro-spinal meningitis. It has been found in one case (no nervous lesion apparent) from the ankle where the foot had been dislocated forward creating an arthritis, which suggests some possible relation between this sign and arthritic ankle clonus." All who have had occasion to examine the skin reflexes of the lower extremity must have observed how frequently an extensor response is obtainable in pathological cases from other parts of the foot than the sole. Dr. Chaddock considers, however, that he has found a definite specificity in the external malleolar area, and the observation is peculiarly interesting and worthy of investigation. If it be shown, as the author thinks, that flexion of the toes from this area is "as significant as extension or fanning," then the "reflex" is not comparable to the toe phenomenon of Babinski. The significance of its unilateral occurrence in cerebro-spinal meningitis and bilateral occurrence in hemiplegia is not, perhaps, apparent; in the latter instance the homolateral pyramidal fibres are always a variable quantity. Whether the "reflex" bears any relation to stimulation of the extensor brevis digitorum muscle, direct or otherwise, is not referred to by Dr. Chaddock.

PROTEIN HYPERSENSITIVENESS.

AMONG the manifold phases of the problem of infection and morbidity in tuberculosis the phenomenon of protein hypersensitiveness is an interesting one. We have received a copy of a pamphlet of Dr. K. Krause containing the results of investigations which he has made in the Saranac Laboratory for the Study of Tuberculosis. He divides the inquiry into three parts. The first deals with "active sensitization." Dr. Krause concludes that practically any parenteral route by which a quantity of tuberculo-protein can be introduced into the guinea-pig will specifically sensitise the animal. Sensitisation may be obtained with equal facility by way of the peritoneal cavity, the skin, the subcutaneous tissue, the cerebral subdural space, and (although he did not try the method) possibly by intravenous injection. He found that sensitisation can be produced with an amount of tuberculo-protein that is represented by 0·00005 gramme dry weight. He gives details of his experiments which will prove interesting to those versed in laboratory methods. The second part of the investigation deals with the relation of tuberculo-protein hypersensitiveness to the tuberculin reaction and to tuberculin immunity. His experiments led him to two conclusions—(1) once sensitiveness to tuberculo-protein is acquired by a non-tuberculous animal the repeated absorption of more protein tends only to increase this condition; and (2) tolerance to tuberculo-protein cannot be attained in the non-tuberculous animal by gradually raising the dosage or diminishing the intervals of time between doses. Dr. Krause's remarks on these two points are involved, but, if they are followed, will prove of value to other observers. The third subject dealt with in this pamphlet is hypersensitiveness

to tuberculo-protein and immunity to infection. After giving details of the investigations the following conclusions are reached:—1. Sensitisation of non-tuberculous guinea-pigs with tuberculous protein does not alter their resistance to experimental tuberculous infection. 2. Sensitisation to tuberculo-protein and relative immunity (increased resistance) to infection can occur coincidently in the same animals. 3. Resistance to infection is markedly lowered during the period that a sensitised animal is suffering from symptoms of anaphylactic shock. In order to fully appreciate the value of these investigations a study of the whole of Dr. Krause's remarks are necessary, but we have sufficiently indicated the nature of the work he has accomplished. The treatment of tuberculosis by tuberculin and similar products has lately attracted much attention, and any fresh information is to be welcomed.

THE CHOLERA EPIDEMIC.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

SINCE the date of my last letter on this subject[1] there has been a considerable extension of the cholera epidemic. It is most seriously prevalent at this moment in various parts of the Turkish Empire and in southern Italy. Russia has so far not suffered to anything like the same extent as at a corresponding date in preceding years; indeed, the extent of the recrudescence of the disease there is almost insignificant. Sporadic cases of cholera are reported from Austria, Hungary, France, Bulgaria, Montenegro, and Persia, but in none of these countries is there any sign of an epidemic.

Cholera in Russia.

Between June 6th and 20th (Old Style) 14 cases of cholera with 1 death were reported to have occurred in the town of Nikolaievsk, in the Samara government; 1 death in the government of Vitebsk; and 1 case at Kozmodemiansk in that of Kazan. On June 25th there was a case in Baku; on the 26th 3 cases at Nikolaieff (apparently in the Kherson government); and between June 26th and July 1st (all these dates are Old Style) there were 17 cases of cholera and 5 deaths in the towns of Novorossiisk, Baku, Nikolaieff, Astrakhan, and Tsaritsyn. Finally, between July 3rd and 9th 18 cases and 5 deaths were recorded in the governments of Kherson, Samara and Astrakhan, and in the town of Saratof.

It would almost look as though the virulence of the cholera germ, which has caused such widespread havoc in Russia in the last few years, were becoming exhausted; but time alone can show whether this surmise is not too good to be true.

Cholera in the Turkish Empire.

Cholera reappeared in Samsoun, on the Black Sea (whence no cases had been reported since November last), on May 28th. Since then the returns have been as follows:—

From	May	28th	to	June	2nd	...	...	77	cases,	45 deaths.
,,	June	3rd	,,		10th	...	...	90	,,	112 ,,
,,	,,	11th	,,		18th	...	...	33	,,	30 ,,
,,	,,	19th	,,		25th	...	...	12	,,	8 ,,
,,	,,	26th	to	July	2nd	...	...	3	,,	3 ,,
,,	July	3rd	,,		9th	...	...	3	,,	1 ,,
,,	,,	10th	,,		16th	...	...	1	,,	1 ,,
,,	,,	17th	,,		23rd	...	...	4	,,	2 ,,
,,	,,	24th	,,		30th	...	...	2	,,	2 ,,

It is interesting to note that the earliest cases here occurred among labourers employed on the railway which is being constructed from Samsoun to Sivas. These men were encamped on a spot lying between the river Merd-Irmak and a canal, and between the latter and the aqueduct which carries the river water to be distributed to the town. They seem to have contaminated this water, and there was thus a sudden and general extension of the disease throughout the town. As soon as this water-supply was cut off and other measures taken to stamp out the disease among the labourers in question, the cases in the town fell suddenly from a maximum of 27 in one day to 2 or 3 per day.

On July 1st cholera reappeared in the neighbourhood of Zunguldak (near which are large and important coal mines); up to July 30th some 21 cases with 11 deaths have been recorded here. In Smyrna, where, it will be recalled, cholera reappeared on April 26th, the following cases and deaths have been registered:—

From	April	26th	to	May	14th	...	...	9	cases,	7 deaths.
,,	May	15th	,,		21st	...	...	2	,,	0 ,,
,,	,,	22nd	,,		28th	...	...	13	,,	7 ,,
,,	,,	29th	to	June	4th	...	...	11	,,	5 ,,
,,	June	5th	,,		12th	...	...	2	,,	2 ,,
,,	,,	12th	,,		18th	...	..	43	,,	18 ,,
,,	,,	19th	,,		25th	...	..	19	,,	16 ,,
,,	,,	26th	to	July	2nd	...	...	40	,,	22 ,,
,,	July	3rd	,,		9th	...	...	46	,,	39 ,,
,,	,,	10th	,,		16th	...	...	19	,,	7 ,,
,,	,,	17th	,,		23rd	...	...	20	,,	13 ,,
,,	,,	24th	,,		30th	...	...	27	,,	18 ,,

The totals here are placed at 251 cases, with 156 deaths.

Information respecting the epidemic in the interior of Asia Minor is lacking in completeness, but there have been outbreaks of greater or less severity in a large number of places. In the western portion of the peninsula the disease has been most active in various villages near the Dardanelles, at Kutaia, Broussa, Moudania, Panderma, Eski Shehir, Simav, Seraikeui, Merzifun, Denizli, and elsewhere. In the eastern portion it has been present in Sivas, Tokat, Yuzghat, and some other places. In none, however, does it appear to have caused, as yet, a very high mortality.

The disease has also spread to the vilayets of Bagdad and Basra. In the former there were 7 cases and 6 deaths in Bagdad itself between July 11th and 30th; 21 cases and 14 deaths at Amara between May 29th and July 25th; 2 cases in the neighbourhood of Amara between July 10th and 25th; 80 cases and 76 deaths at Medjri Kebir from July 3rd to 12th; 23 cases and 14 deaths at Medjri Saghir from July 3rd to 12th; 8 cases and 3 deaths at Kemit between July 10th and 17th; and 1 fatal case at Decas on July 12th. All these places are on or near the Tigris. The totals in the Bagdad vilayet are put at 142 cases, with 114 deaths. In the Basra vilayet 76 cases, with 49 deaths, were recorded between June 8th and July 29th; of these, 69 cases and 44 deaths occurred at Basra itself between July 17th and 29th, and 7 cases with 5 deaths at Ozeir between June 8th and 13th. Ozeir, it should be added, is a centre of pilgrimage for the Jewish inhabitants of Mesopotamia and elsewhere, as the prophet Ezra is buried here (whence the name of Ozeir). It was among such pilgrims that the cases of cholera occurred. There have been no further cases since the dates mentioned.

In European Turkey the revival of cholera has so far been almost confined to Constantinople itself. The principal exception, an important one in view of the actual situation on the Montenegrin border, is the appearance of the disease at Ipek, in northern Albania. Between July 10th and 13th 17 cases and 32 deaths were reported there; between the 14th and 16th there were 10 cases and 15 deaths; between the 16th and 18th 39 cases and 36 deaths; on the 20th 30 deaths; and on the 21st and 22nd 58 deaths. (These dates are Old Style dates.) There have also been several cases at Diakova in the same region.

In Constantinople itself cholera reappeared at the end of May. It seems to have been imported from the Black Sea coast, and some of the earliest cases occurred among persons who had arrived in the capital by steamers which had called at Samsoun, where, as shown above, cholera was already prevalent. The following official figures have since been published:—

From	May	21st	to	July	11th	...	...	21	cases,	13 deaths.
,,	July	11th	,,		17th	...	...	9	,,	4 ,,
,,	,,	18th	,,		24th	...	...	20	,,	7 ,,
,,	,,	25th	,,		31st	...	...	132	,,	69 ,,
,,	August	1st	to	August	7th	...	...	181	,,	100 ,,

A certain number of these cases have occurred among the troops garrisoning the capital; but the majority have been among the civil population. It will be recalled that the disease was largely spread last autumn by the movements of troops in different parts of the country; but greater precautions have been taken in the present outbreak. As was

[1] THE LANCET, May 27th, p. 1459.

the case last year, the infection seems to be widely spread in all parts of Constantinople and some of the neighbouring villages on the Bosphorus.

Cholera still prevails more or less in the Yemen, but it is difficult to obtain exact information as to its extent. It is certain that it was epidemic in several places in the interior in May and June; among others at Zeidieh, Badjil, Harounieh, Cournieh, &c. Some cases also occurred in June at Salif (nearly opposite to Camaran), where there are extensive salt works, the property of the Public Debt Administration. At Confudah, a port of some importance, 50 cases, with 39 deaths, were registered between May 21st and 25th. At Hodeidah, the principal port of the Yemen, the disease has prevailed intermittently. Early in June a regiment arrived here from Sanaa, the capital of the Yemen, and in the course of about ten days no less than 116 cases of cholera, with 63 deaths, are stated to have occurred among the men. The infection spread to some extent to the general population, but did not apparently cause an epidemic. Other infected regiments and transports have arrived at the Camaran lazaret, where they have undergone disinfection and quarantines of various lengths. In the village of Camaran itself a few cases have also occurred, but most of these seem to have been imported from the mainland. The pilgrim season has now begun, and pilgrim ships are constantly arriving at the Camaran lazaret. So far, fortunately, the pilgrims have escaped the disease here.

Cholera in Italy.

On June 9th the presence of cholera in Italy was first notified; 2 cases were then stated to have occurred at Serrastretta and 1 at Lungro between June 1st and 5th. It is said that the infection was imported to Italy by emigrants from Asia Minor and Constantinople, passing through Italy on their way to America. For some time before the official notification was made large numbers of cases of gastro-enteritis were observed at Naples and elsewhere, and the presence of cholera was widely rumoured before it was officially declared. In Naples 7 cases and 3 deaths from cholera were stated to have occurred between June 11th and 15th; the numbers rapidly rose, and early in July some 30 or 40 cases were being registered daily. In the province of Naples, also, the disease soon became epidemic, as also in those of Caserta, Salerno, and Palermo, while later cases in small numbers were reported from the provinces of Avellino, Campobasso, Caltanisetta, Messina, Livorno, Trapani, and Rome (1 case at Civita Vecchia). The town and province of Palermo, in Sicily, have also become infected, and the figures here have been considerable. At Palermo several cases occurred in the local lunatic asylum. The rumoured appearance of the disease at Venice was subsequently denied. This year's epidemic in Italy bears many points of resemblance to that of last year.

Cholera in Austria-Hungary.

In June an imported case of cholera was declared to have occurred at Graz (as already reported by your Vienna correspondent, THE LANCET, June 24th, p. 1735). On June 6th a suspected case was seen on a ship arriving at Trieste from Naples. On July 17th two suspected cases were reported from the provinces of Weissenberg and Abonj, but these were later stated not to have been cholera. On July 9th a clockmaker in Trieste died from Asiatic cholera, and several other cases subsequently occurred here. Early in July the disease appeared at Skaljari, near Cattaro, on the Adriatic. In an official statement issued by the Austrian Ministry of the Interior on July 24th it is declared that since May 24th (the date apparently of the first case in Graz) 17 cases of cholera with 10 deaths had occurred in Austria; of these, 2 occurred at Graz, 11 at Trieste, and 4 at Cattaro. The latest news from Trieste shows that fresh cases are still developing there.

Cholera in France.

Eight cases of cholera are reported to have occurred at Marseilles. Some of these were imported; but at least 4 appear to have been of indigenous origin. None have occurred since July 20th.

Cholera in Bulgaria.

So far as is known the only case of cholera that has been seen in Bulgaria was one which was reported on July 16th as having occurred in the village of Kaludjik, near to Shumna.

Cholera in Montenegro.

At the end of July the appearance of cholera in Cettinjé was officially reported. One confirmed case and one suspected case were observed there on July 29th.

Cholera in Persia.

Up to the present the only occurrence of cholera reported from Persian territory has been that of 2 fatal cases of the disease at Mohammerah, on the Shatt-el-Arab, below Basra. Both occurred in the week ending July 29th.

Constantinople, August 7th.

REPORT ON EGYPT AND THE SOUDAN IN 1910.[1]

THIS annual report takes up the parable of events in Egypt from the dastardly assassination of the Coptic Prime Minister, Boutros Pasha, and the strained relations which ensued between the Muhammedan and Coptic Egyptians. The ill-judged and obviously premature attempts to conciliate the Nationalist party by giving additional powers and responsibility to the native officials at the expense of the good government of the country led to much discontent among the European officials, and culminated in the official pronouncement in the House of Commons that there can be no hope of further progress in Egypt until the political agitation against the British occupation has ceased. Those who desire to see Egypt ruled by the Egyptians must be made to understand that that time has not yet arrived and is not within sight, for it is idle to talk of that country being governed by really representative institutions so long as only 600,000 of the population of 11,000,000 can read and write. The patriots who clamour unceasingly for the removal of English rule and profess that they themselves are competent to administer their country would do better to utilise their influence in the direction of extending the boon of education to their own brethren. In Egypt's long history there have been but few occasions when the natives of the land have not lived under foreign sway, but if now they are to rule themselves it is surely not too much to ask as a preliminary that the majority should be able to read and write their own tongue.

Among the increased ordinary expenditure of the current year there is a sum of rather more than £15,000 voted to the Public Health Department, chiefly due to the approaching completion of the new lunatic asylum at Khanka, near Cairo; this asylum will be opened this year with 240 beds and will be gradually extended to 1000 beds, thus providing eventually asylum accommodation for 2150 insane persons in the two institutions. A grant of £10,000 has also been made for the rebuilding of the Government hospital at Kena in Upper Egypt, for the present hospital is in unsuitable, insanitary premises above the elementary school, and reconstruction is badly needed. A grant of £15,000 has also been provided for an addition to the Cairo Infectious Hospital, well situated in the desert, so that in future paying patients may be admitted. Europeans and others suffering from small-pox, measles, diphtheria, or typhus have now to be nursed at home or are admitted to a small block attached to the German Hospital in the town.

During last year 57,000 cattle were treated with serum against cattle plague with a total death-rate of 1·8 per 1000; this measure is now popular among the peasants. The mortality among the average prison population of nearly 13,000 is only 1·4 per 1000, and there were during the year only 16 deaths from infectious diseases. It has been decided to substitute bread made from maize instead of wheaten bread in all the prisons, and so effect an economy of about £10,000 a year. Evidently there is no official belief in the view that this change of diet may increase the cases of pellagra among the prisoners.

The total number of Egyptian pilgrims who went to the Hedjaz amounted to 17,500, besides an almost equal number of foreigners who passed through Egypt on their way to Mecca. Of the Egyptian pilgrims, 45 contracted cholera and 32 died, but the disease was arrested at the quarantine stations and failed to get an entrance into Egypt, in spite of menace from Russia, Italy, Tripoli, Asia Minor, and the Red Sea. The long-deferred rebuilding of Kasr-el-Aini Hospital

[1] The late Sir E. Gorst's Report on Egypt and the Soudan in 1910. London. 1911. Pp. 96. Price 10d.

is definitely promised in this report "as soon as the necessary financial provision can be made." Every important medical visitor to Cairo of recent years has urged the need of this step, and it is to be hoped that the authorities will no longer delay. Bubonic plague in Lower Egypt and pneumonic plague in Upper Egypt have both established a firm foothold, so that in 1910 there were 1397 certified cases, compared with 522 cases during the year 1909.

The dispensaries and societies which are trying to combat infant mortality are continuing to instil into the poorest mothers some of the elementary principles of care and cleanliness, and are beset with crowds of patients both in Cairo and in Minia.

The School of Medicine continues to flourish, and now includes 220 students, having quadrupled its numbers during the last 12 years. Several junior posts on the teaching staff have recently been filled by Egyptians who were sent to England to complete their education. There are now 59 students training in various subjects in Europe, mostly in England, besides a considerable number of others who migrate on their own account, for whom the Egyptian Government is in no way responsible.

The Egyptian army was called upon on no less than 15 occasions to operate against tribal foes in the Soudan or to support the civil power. The patrols called out had to fight in desert, mountain, bush, and high grass against fanatical Arabs, savages armed only with spear and bow, and sometimes Nubia billmen, furnished with firearms, which they use with dangerous precision. It is satisfactory to note that malaria has claimed fewer deaths among the soldiers, and that two malarious districts, Kassala and El Obeid, are markedly healthier. The latter ought to be reached next year by the railway, which is being laid south of Khartum, and has already justified its existence financially, while the Abyssinians have expressed a desire for improved telegraphic and trade communications on their frontier. With internal peace, an increasing population, satisfactory public health, and promising trade the Soudan now seems to stand at the threshold of a new era. On the other hand, the telegraph department complains pathetically that communication was interrupted 30 times during the year by elephants, giraffes, and hippopotami!

With the exception of a small outbreak of diphtheria south of Dueim, there was no epidemic of infectious disease in the Soudan during the year. The most important event of 1910 was the re-occupation of the Lado Enclave by the Soudan Government on the death of King Leopold II. of Belgium. This has thrown on the Government the responsibility of administering an area of 17,000 square miles, or about twice the size of Lower Egypt, with a population, mostly of savage tribes, estimated at 50,000. The new territory is well stocked with elephants, but the country is not yet open to shooting parties, partly because of the sleeping sickness, which is a portion of our inheritance from the Belgians. Prompt measures have already been taken to confine this scourge to certain districts of the Lado Enclave, and to prevent its spreading to other parts. During 1910 sleeping sickness made its first appearance in the Soudan, two cases being discovered at Raga and one doubtful case at Wau, among natives who had recently arrived from the French Congo.

Two British medical officers have been detailed to study kala-azar in the Eastern Soudan, where they find that most of the cases are sporadic and occur in males under 20 years of age. The work of Dr. A. Balfour and his colleagues at Gordon College is hardly mentioned in this report, on the grounds that their fourth report is now forthcoming, for which the world of medical science is again indebted to the generosity of Mr. H. S. Wellcome.

It is difficult to close this appreciation without recording our hope that the new Agent and Consul-General in Egypt, Viscount Kitchener, who goes to his task next month in closer touch with scientific and bacteriological knowledge than any of his predecessors, will add fresh lustre to his name by supporting endeavours to rid Egypt and the Soudan from many forms of epidemic and endemic disease.

THE Archbishop of York has accepted the office of President of the Twenty-seventh Congress of the Royal Sanitary Institute, which will be held in York in July, 1912.

ASYLUM REPORTS.

Norfolk County Asylum (Annual Report for the Year 1910).—The chief event of the year in the history of this asylum has been the opening of the nurses' home. The home has been erected at a cost of £134 per bed and has the commendation of the Commissioners in Lunacy. It is entirely separate from the asylum and is of different architecture, the idea being that nurses when off duty should enjoy surroundings altogether different from those of their work. To judge from the description of the home, from an accompanying illustration, and from its plans the nurses should be very comfortable in their new quarters. The daily average number resident at the asylum was 1017. The total admissions for the year were 236, of which number 107 were men and 129 women. This is a record number in the history of the asylum. Hereditary defect was ascertained in 40 per cent. of the cases, mental stress in 22 per cent., and intemperance in 4 per cent. There were discharged 100 persons, and of these 68 were recoveries, a rate of 30 per cent. on the admissions. Deaths numbered 117, being 11·50 per cent. on the daily average number resident. Deaths from consumption and senile decay each gave a percentage of 17 of the total number of deaths, while general paralysis accounted for 9·4 per cent. Post-mortem examinations were made in 76 per cent. of the deaths.

County Borough of Leicester Asylum at West Humberstone (Annual Report for the Year 1910).—At this asylum the average number resident was 727. The admissions numbered 191, and among these 24 were ascribed to heredity, 23 to intemperance, and 42 to mental stress. The discharges numbered 49, the percentage of recoveries on the admissions being 32·28. There were 65 deaths, the rate of mortality estimated upon the average number resident being 8·9. Of the 788 patients remaining in the asylum at the end of the year only 29 were deemed curable.

Kesteven (Lincolnshire) County Asylum (Annual Report for the Year 1910).—The average daily number on the registers of this asylum was 430. There were admitted 78 cases; of these, 18 only were in a good state of bodily health, while 34 were considered in fair health and 26 as feeble or much run down. In 50 per cent. of those admitted a hereditary predisposition was ascertained, and in 20 per cent. some stress, either sudden or prolonged, was given as the cause of the attack. Twenty-four patients were discharged, of whom 18 had recovered. Twenty-nine patients died, giving a rate calculated on the average number resident of 6·74 per cent. Post-mortem examinations were held in 80 per cent. of the deaths. The Commissioners report that on inquiring into the temperature of the water in which patients are bathed one attendant informed them that he bathed his patients in water at 94°, another at 60°, and a third at 100°. The Commissioners draw the moral that bathing regulations should be framed and hung up in every bathroom.

Sunderland Borough Asylum (Annual Report for the Year 1910).—The average number resident at this asylum was 400, or 14 more than in the previous year. 111 patients were admitted. Among the exciting causes of mental breakdown alcohol still keeps its place. Another exciting cause which figures high in the list is adolescence. Dr. J. Middlemass, the medical superintendent, points out the extreme risk which the children of recovered patients of this latter class run. He is of opinion that in at least half the cases sent to the asylum there is an inherited constitutional tendency to an attack of insanity. While much can be done by care to avoid those causes which are known to operate towards developing the latent weakness, it is becoming recognised that something potent in the form of enlarging the present powers of detention will have to be adopted. It is reasonable to suppose that if the causal factor of heredity could be arrested the amount of insanity would in a generation or two be reduced to much smaller proportions. Sixty-five patients were discharged, and of these 50 had recovered, the rate being 45 per cent. on those admitted. The deaths numbered 36, the percentage of deaths on the admissions was 32·4, on the average number resident 9·0, and on the total number under treatment 7 1. In every case a post-mortem examination was held. A verandah for treatment has been erected and has been found

useful for mental symptoms as well as for those of pulmonary tuberculosis.

Royal Edinburgh Asylum at Morningside (Annual Report for the Year 1910).—The average number resident during the year at this asylum was 752. The total number of admissions was 195. Alcoholic excess appears to have existed as an etiological factor in 12·3 per cent. of the admissions. Among males the percentage of so-called alcoholic insanity was less than it has ever been before, although among females it has steadily risen during the last three years, and last year was 11·2 of the total admissions of women. Dr. G. M. Robertson, the physician-superintendent, notes that, in spite of the acute political excitement of recent years, no cases can be attributed to it. "Judging by their effects on the brain of the ordinary man, the interest taken in politics, and the disturbance it produces, must both be of the most shallow and superficial nature." Seventy patients were discharged recovered and 59 unrecovered, the recovery rate being 36 per cent. of the total number of admissions. The deaths numbered 60, which is 8 per cent. of the average number resident. Post-mortem examinations were made in 36 instances. In administrative matters Dr. Robertson has endeavoured to remove all features peculiar to asylums and to convert the institution into a hospital for the treatment of a special disease. Insanity is very frequently associated with physical exhaustion, and its treatment should therefore be conducted by a staff and by methods similar to those employed for the treatment of other diseases.

Brighton County Borough Asylum at Haywards Heath (Annual Report for the Year 1910).—The average daily number resident was 842. Admissions numbered 259, of whom 117 were males and 142 were females. Ninety persons were discharged, of whom 35 were males and 55 were females. Of the males 17 had recovered, being a percentage of 30·4 on the admissions. Of the females 26 had recovered, being a percentage of 31·7 on the admissions. The deaths numbered 51, the rate on the average daily number resident being 6·1 per cent. The mean age at death for both sexes was 58·7 years—for males 55·0, and for females 61·8. In only 50 per cent. of the deaths were post-mortem examinations held.

Cumberland and Westmorland Lunatic Asylum (Annual Report for the Year 1910).—The daily average number of patients resident at this asylum during 1910 was 853. 179 patients were admitted, of whom 174 were direct admissions. Twenty-eight of those admitted had been previously treated in the asylum, and 24 of these had recovered at the time of their last discharge. The average time these had remained away from the asylum was 4 years 11½ months. In causation, heredity was the commonest factor and was ascertained in 38 cases, or, including epileptic heredity, in 41 cases. Alcoholic excess was a factor in 21 cases, and mental stress preceded the attack in 16 cases. Discharges numbered 105, there being 68 recovered, 20 relieved, and 17 not improved. The recovery rate on the direct admissions was 39·1 per cent. Of the recovered, 17 were at the asylum for less than three months, 23 from three to six months, 6 from six to nine months, and 11 for more than a year. Fifty-three of those who recovered were brought to the asylum within three months of the onset of the attack. Dr. W. F. Farquharson, the medical superintendent, points out that the earlier a patient is brought under treatment, removed to a new environment where he can have the services of specially trained nurses, and withdrawn from the well-meant attention of relatives and neighbours, the more speedily does recovery take place. Seventy-eight patients died during the year and the rate, calculated on the daily average number of patients resident, was 9·1 per cent. In every case a post-mortem examination was made.

THE BRITISH FIRE PREVENTION COMMITTEE.—A special commission of officers of this committee has left London for Paris to study the fire preventive and fire service arrangements of the French capital and its suburbs. The commission, for whom an extensive programme of work has been prepared by the French Government, comprises the chairman, Mr. Edwin O. Sachs, Mr. Ellis Marsland (honorary secretary), Mr. Horace Folker (honorary treasurer), Lord Londesborough, Mr. H. Dyer, Mr. Percy Collins, Lieutenant Spencer, R.N., and Mr. Boyce-Podmore.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bombay.—According to the report on public health administration in Bombay for 1910, presented by Dr. J. A. Turner, the executive health officer, there has been a notable improvement in respect to the mortality from plague, cholera, and phthisis, though a slight increase has occurred in the number of deaths under the heads of small-pox, measles, fevers, diarrhœal and respiratory diseases. The total number of deaths was 34,933, giving a death-rate of 35·72 per 1000 on a population of 977,822; this was the number of inhabitants as determined by the census of 1906, and no correction has been applied for any increase in the five years that have since elapsed. After deducting deaths of new arrivals, and adding deaths in sanatoriums outside the city of persons belonging to Bombay, the corrected death-rate is 35·13 per 1000. The actual number of deaths is, indeed, smaller than in any year during the past decade, with one exception, the main cause being decrease in plague mortality. Out of the total ratio of 35·72, the most important item is that of respiratory diseases, causing 8·39, compared with a ratio of 10·30 for 1900–1909; plague caused 3·73, a notable reduction on 14·17, the decennial average; fevers accounted for only 3·18, also a satisfactory figure compared with 5·37 for the decennium; phthisis (2·33) and diarrhœa (2·20) were also less fatal. The zymotic death-rate of 9·89 compares favourably with that of the preceding three years (11·90), and still more with that of the decennium (24·33). There was a considerable increase in small-pox and measles over the preceding year, but variations from year to year are of small consequence unless maintained. Amongst the variety of races inhabiting Bombay a considerable difference exists in regard to mortality ratios; compared with the general rate of 35·72, we find for Mussulmans it was 51·10, for native Christians 48·73, and for Jews 36 33; while for Eurasians it was 32·47, Buddhists 31 69, Hindus 32·41, and for Parsis only 27·30. The European ratio of 18 50 is obviously hardly comparable, as the conditions of life here are so different. The high mortality among Mussulmans (chiefly from phthisis, respiratory and nervous diseases) is ascribed to their density of population, their ill-ventilated houses, and the *purdah* system of seclusion for their women. Native Christians suffered especially from fevers, diarrhœal and respiratory diseases, and small-pox. The most noticeable feature of the public health during the year was the reduction of plague mortality to 3·73 per 1000, the lowest ratio since 1896; the disease has not decreased in virulence, as the case-mortality stands at 88·52 per cent., a figure exceeded in three years only since 1896. March, April, and May were the months of chief incidence (915 deaths in April); in December there were only 32 deaths. Small-pox was epidemic from February to May, its spread as usual having been aided by continual importations from outside, especially by pilgrims returning from Jeddah. Arrangements have now been made to vaccinate pilgrims, when possible, before leaving India for Mecca, and a specially trained nurse has been deputed to vaccinate females. Great benefit will doubtless result from this important step in advance. A great deal of anti-malarial work has been carried out, in the way of inspection of wells, applying pesterine, and in some instances filling in or closing them; stocking with small fish to eat the larvæ has been tried, but without success, though further trials are to be made. The matter is a difficult one to deal with as religious prejudices in many cases come in the way. Malarial fever accounted for 293 deaths, a ratio of 0·29 per 1000, being slightly in excess of the quinquennial average (0·26).[1] Among the chief administrative measures undertaken were anti-plague inoculations, of which 5043 were performed; the destruction of more than half a million rats; and the formation of semi-permanent health camps. Dr. Turner advises the municipality to erect suitable refuse destructors; the rapid disposal of town sweepings is of the greatest importance in eastern cities, and there can be no doubt that Bombay would be well advised to adopt this method. Motor vans for the removal of town refuse

[1] In addition 2630 deaths are returned under "Ague and Remittent Fever." What are these, if not malarial? And what does "malarial fever" include without them?

have been introduced with satisfactory results, being actually less expensive to work than the old bullock carts. We regret to learn that, in spite of all that has been written and said within the last few years about town planning, great numbers of new buildings are being erected in the northern part of Bombay in a crowded and insanitary manner, and without proper means of access. No protest has been made apparently against the erection of such buildings on land which is not properly laid out. Bombay is now the third city under British rule in point of population; its health conditions are a matter of imperial interest. Dr. Turner has a very difficult task, and we wish every success to his strenuous efforts for the public good.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7072 births and 5770 deaths were registered during the week ending August 12th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been increased from 11·8 to 15·9 per 1000 in the four preceding weeks, further rose to 18 6 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 14 0 per 1000, while in London during the same period the mean annual death-rate did not exceed 13·6 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 7·3 in Barrow-in-Furness, 8·0 in Stockton-on-Tees, 8 9 in King's Norton, and 9·2 in Bournemouth, to 26·4 in Aston Manor, 28·0 in Stoke-on-Trent and in St. Helens, 29·7 in West Bromwich, and 38·1 in Dewsbury. The 5770 deaths from all causes in the 77 towns last week exceeded the number recorded in the previous week by no fewer than 830, and with one exception was the highest number recorded in any week during the current year. These 5770 deaths from all causes included 2103 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 1340 in the six preceding weeks, and included no fewer than 1927 from infantile diarrhœa, 60 from whooping-cough, 50 from measles, 24 from diphtheria, 23 from scarlet fever, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 6·8 per 1000, against 2·3 and 4·3 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 1168 in the six preceding weeks, further rose last week to 1927, and caused the highest annual rates of 11·7 in Wigan and in Dewsbury, 12·2 in West Bromwich, 12·4 in West Ham, 13·1 in Stoke-on-Trent, 14·0 in St. Helens, and 16·0 in Aston Manor. The deaths referred to whooping-cough, which had increased from 43 to 57 in the four preceding weeks, further rose last week to 60; 26 deaths were registered in London and its suburban districts, 4 in Liverpool, 3 in Leeds, and 3 in Cardiff. The fatal cases of measles numbered 50, and were 3 less than the number returned in the previous week; 15 deaths were recorded in London and its suburban districts, 4 in Liverpool, and 3 each in Wolverhampton, Nottingham, Manchester, and Salford. The deaths from diphtheria, which averaged 41 in the three preceding weeks, declined last week to 24, and included 9 in London and its suburban districts, 3 in Sheffield, and 2 each in Stoke-on-Trent, Salford, and Bradford. The 23 deaths referred to scarlet fever were 9 in excess of the number in the preceding week, and included 7 in London and its suburban districts, 5 in Liverpool, 2 in Birmingham, and 2 in Coventry. The deaths attributed to enteric fever, which had been 11, 11, and 8 in the three preceding weeks, rose to 19 last week, and included 5 in London, 2 in Bradford, and 2 in Leeds. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1433 in the 17 preceding weeks, had further increased to 1442 on Saturday last; 159 new cases of this disease were admitted to these hospitals during the week, against 199, 209, and 191 in the three previous weeks. These hospitals also contained at the end of last week 823 cases of diphtheria, 256 of whooping-cough, 238 of measles, and 38 of enteric fever, but not one of small-pox. The 1619 deaths from all causes in London last week showed an increase of 275 upon the number returned in the previous week, and included 90 which were referred to diseases of the respiratory system, against 115 and 91 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 173 and 223 in the two preceding weeks, declined to 162 last week, and 373 inquest cases were registered. The causes of 26, or 0 5 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner. All the causes of death last week were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, and in 52 other smaller towns; the 26 uncertified causes of death last week included 6 in Birmingham, 4 in Liverpool, and 2 in Grimsby.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 793 births and 471 deaths were registered during the week ending August 12th. The annual rate of mortality in these towns, which had been equal to 14 9 and 13·8 per 1000 in the two preceding weeks, rose to 14 4 last week, and was equal to the mean rate in these towns during the first six weeks of the current quarter, but was 0 4 per 1000 above the mean death-rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 12·2 and 12·5 in Edinburgh and Aberdeen to 16·0 in Perth and 21·5 in Greenock. The 471 deaths from all causes in the eight towns last week were 19 in excess of the number in the previous week, and included 99 which were referred to the principal epidemic diseases, against 73 and 62 in the two preceding weeks; of these 99 deaths, 70 resulted from diarrhœa, 11 from measles, 9 from whooping-cough, 5 from diphtheria, 2 from enteric fever, 1 from scarlet fever, and 1 from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 3·0 per 1000, the mean rate last week from the same diseases in the 77 English towns having been 6·8. The deaths from diarrhœa, which had been 40 and 33 in the two preceding weeks, rose last week to 70, and included 59 of infants under two years of age; 49 deaths occurred in Glasgow, 6 in Edinburgh, and 6 in Greenock. The 11 deaths referred to measles were equal to the number in the previous week, and included 4 in Glasgow, 3 in Aberdeen, and 3 in Leith. The 9 fatal cases of whooping-cough were 2 in excess of the number returned in the preceding week, and included 5 in Glasgow and 3 in Paisley. The 5 deaths attributed to diphtheria were equal to the average in the three preceding weeks, and included 2 in Glasgow. The fatal cases of enteric fever were registered in Glasgow and Edinburgh, that of scarlet fever in Glasgow, and that of small-pox in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had been 48 and 32 in the two preceding weeks, rose to 39 last week, but was 8 below the number in the corresponding week of last year. Of the 471 deaths from all causes in the eight towns last week, 143, or 30 per cent., were recorded in public institutions, and 22 were attributed to different forms of violence. The causes of 13, or 2·8 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0 5 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 595 births and 377 deaths were registered during the week ending August 12th. The annual rate of mortality in these towns, which had been 16·8, 16 4, and 16·8 per 1000 in the three preceding weeks, rose to 17·1 per 1000 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 16·3, whilst the mean rate during the same period did not

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,522,628	—	857	550	—	57	—	16	271	6	1757	5·1	—	71	16	37	36	4	276	440	1·3	4105	12·4
West Districts.																							
Paddington	142,541	—	13	12	—	3	—	1	10	—	39	3·6	—		—	1	—	2	4	8	0·7	130	12·7
Kensington	172,296	—	25	19	—	1	—	1	8	—	54	4·1	—	1	—	—	2	—	7	10	0·8	149	12·2
Hammersmith	121,837	—	18	16	—	2	—	—	11	—	47	5·0	—	—	—	1	2	—	4	7	0·7	106	11·8
Fulham	153,726	—	39	18	—	5	—	—	2	—	64	5·4	—	—	1	1	1	1	10	14	1·2	136	12·0
Chelsea	66,218	—	12	10	—	1	—	1	2	—	26	5·1	—	3	—	—	—	—	4	7	1·4	61	12·4
City of Westminster	159,709	—	27	11	—	4	—	—	4	—	46	3·8	—	2	—	—	3	—	4	9	0·7	143	13·1
North Districts.																							
St. Marylebone	117,844	—	22	9	—	—	—		9	—	41	4·5	—	—	1	—	2	—	3	6	0·7	101	11·9
Hampstead	85,599	—	7	15	—	1	—	—	3	—	26	4·0	—	3	—	4	—	—	2	9	1·4	58	9·9
St. Pancras	218,031	—	31	50	—	5	—	—	6	—	92	5·5	—	1	—	5	1	—	22	29	1·7	196	12·2
Islington	327,234	—	63	29	—	3	—	—	19	1	115	4·6	—	4	2	3	2	—	14	25	1·0	279	11·5
Stoke Newington	50,669	—	7	2	—	—	—	—	—	—	9	2·3	—	1	1	—	—	—	2	4	1·0	33	8·9
Hackney	222,674	—	37	25	—	—	—	1	28	—	91	5·3	—	2	—	2	4	—	7	15	0·9	171	10·4
Central Districts.																							
Holborn	49,084	—	30	12	—	1	—	—	4	—	47	12·5	—	—	—	—	—	—	3	3	0·8	47	13·5
Finsbury	87,639	—	17	13	—	1	—	—	14	—	45	6·7	—	1	2	1	—	—	20	24	3·6	123	18·9
City of London	19,475	—	1	1	—	—	—	—	3	—	5	3·3	—	—	—	—	—	—	—	—	—	22	16·2
East Districts.																							
Shoreditch	111,284	—	16	14	—	—	—	1	5	—	36	4·2	—	5	—	1	—	—	18	24	2·8	134	16·5
Bethnal Green	128,247	—	21	14	—	1	—	1	14	—	51	5·2	—	6	—	1	1	—	11	19	1·9	135	13·8
Stepney	279,560	—	42	40	—	1	—	—	32	—	115	5·4	—	17	—	—	2	—	38	57	2·7	338	16·5
Poplar	162,290	—	45	16	—	5	—	1	14	1	82	6·6	—	2	2	3	1	—	13	21	1·7	159	13·2
South Districts.																							
Southwark	191,595	—	57	38	—	—	—	—	14	1	110	7·5	—	5	1	3	2	—	16	27	1·8	206	14·6
Bermondsey	125,840	—	21	22	—	2	—	—	5	—	50	5·2	—	3	1	1	3	—	9	17	1·8	150	15·9
Lambeth	298,032	—	37	26	—	6	—	1	5	—	75	3·3	—	4	—	2	2	1	21	30	1·3	279	12·6
Battersea	167,765	—	13	9	—	3	—	—	8	—	33	2·6	—	4	—	—	3	—	9	16	1·2	128	10·6
Wandsworth	313,389	—	60	34	—	4	—	2	13	1	114	4·7	—	1	2	1	1	—	7	12	0·5	204	9·0
Camberwell	261,407	—	86	27	—	2	—	2	14	2	133	6·6	—	—	1	1	2	—	7	11	0·5	224	11·6
Deptford	109,475	—	17	16	—	4	—	—	8	—	45	5·4	—	—	1	2	1	—	5	9	1·1	102	12·7
Greenwich	95,982	—	44	20	—	—	—	1	7	—	72	9·8	—	2	—	1	1	—	10	14	1·9	97	13·5
Lewisham	161,677	—	15	19	—	1	—	1	5	—	41	3·3	—	1	—	3	—	—	2	6	0·5	100	8·4
Woolwich	121,509	—	34	13	—	1	—	1	3	—	52	5·6	—	2	1	—	—	—	4	7	0·8	94	10·8
Port of London	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

exceed 14·0 per 1000 in the 77 English towns, and was equal to 14·4 in the eight Scotch towns. The annual death-rate last week was equal to 20·7 in Dublin (against 18·7 in London), 16·3 in Belfast, 9·5 in Cork, 11·5 in Londonderry, 13·6 in Limerick, and 20·9 in Waterford; whilst in the 16 smallest of these Irish towns the mean annual death-rate did not exceed 15·4 per 1000. The 377 deaths from all causes in the 22 Irish towns last week showed an increase of 6 upon the number returned in the previous week, and included 117 which were referred to the principal epidemic diseases, against 87 and 83 in the two preceding weeks; of these 117 deaths, 106 resulted from diarrhœal diseases, 4 from scarlet fever, 3 from enteric fever, 2 from measles, and 2 from whooping-cough, but not one from small-pox or from diphtheria. These 117 deaths from the principal epidemic diseases were equal to an annual death-rate of 5·4 per 1000, the mean rate from the same diseases in the 77 English towns was equal to 6·8 per 1000, whilst in the eight Scotch towns it did not exceed 3·0. The deaths attributed to diarrhœal diseases, which had been 70 and 66 in the two preceding weeks, rose to 106 last week and included 94 of infants under two years of age; 47 deaths were registered in Dublin, 42 in Belfast, and 3 in Cork. The 4 deaths attributed to scarlet fever were 3 in excess of the number in the previous week, and included 3 in Dublin and 1 in Belfast. Of the 3 fatal cases of enteric fever, 2 occurred in Dublin and 1 in Belfast. The 2 fatal cases of measles were recorded in Dublin and Newtonards, and those from whooping-cough in Dublin and Belfast. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 44 and 20 in the two preceding weeks, rose last week to 38. Of the 377 deaths from all causes in the 22 town districts last week, 85, or 23 per cent., of the deaths occurred in public institutions, and 4 deaths were attributed to different forms of violence. The causes of 14, or 3·7 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·5 per cent. in the 77 large English towns, and was equal to 2·8 in the eight Scotch towns.

VITAL STATISTICS OF LONDON DURING JULY, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·1 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·1, 4·3, and 4·4 per 1000 respectively. The lowest rates last month were recorded in Paddington, Stoke Newington, the City of London, Lambeth, Battersea, and Lewisham; and the highest rates in Holborn, Finsbury, Poplar, Southwark, Camberwell, and Greenwich. The prevalence of scarlet fever showed a marked increase over that recorded in either of the two preceding months; the greatest proportional prevalence of this disease was recorded in Fulham, Holborn, Poplar, Southwark, Camberwell, Greenwich, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1018, 1128, and 1206 at the end of the three preceding months, had further risen to 1400 at the end of July; the weekly admissions averaged 200, against 127, 160, and 162 in the three preceding months. Diphtheria also was considerably more prevalent than in any other recent month; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Holborn, Southwark, Bermondsey, and Greenwich. There were 839 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 801 and 771 at the end of the two preceding months; the weekly admissions averaged 120, against 97, 100, and 102 in the three preceding months. The prevalence of enteric fever showed a slight increase over that recorded in either of the two preceding months; the greatest proportional prevalence of this disease was recorded in Paddington, Fulham, the City of Westminster, St. Pancras, Poplar, and Deptford. The Metropolitan Asylums Hospitals contained 47 enteric fever patients at the end of July, against 22, 35, and 33 at the end of the three preceding months; the weekly admissions averaged 9, against 5 and 6 in the two preceding months. Erysipelas was proportionally most prevalent in Hammersmith, Hackney, Finsbury, the City of London, Bethnal Green, and Stepney. The 16 cases of puerperal fever notified during the month included 2 in Wandsworth and 2 in Camberwell. Of the 6 cases notified as cerebro-spinal meningitis, 2 belonged to Camberwell and 1 each to Islington, Poplar, Southwark, and Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending July 29th the deaths of 4105 London residents were registered, equal to a corrected annual rate of 12·4 per 1000, against 16·7, 13·2, and 11·7 per 1000 in the three preceding months. The death-rates last month ranged from 8·4 in Lewisham, 8·9 in Stoke Newington, 9·0 in Wandsworth, 9·9 in Hampstead, 10·4 in Hackney, and 10·6 in Battersea, to 14·6 in Southwark, 15·9 in Bermondsey, 16·2 in the City of London, 16·5 in Shoreditch and in Stepney, and 18·9 in Finsbury. The 4105 deaths from all causes included 71 from measles, 16 from scarlet fever, 37 from diphtheria, 36 from whooping-cough, 4 from enteric fever, and 276 (among children under two years of age) from diarrhœa and enteritis. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Paddington, Hammersmith, the City of Westminster, St. Marylebone, Wandsworth, Camberwell, and Lewisham; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, Bermondsey, and Greenwich. The 71 deaths from measles were 54 fewer than the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Chelsea, Hampstead, Shoreditch, Bethnal Green, and Stepney. The 16 fatal cases of scarlet fever were less than one-half the corrected average number; of these 16 deaths 2 belonged to Islington, 2 to Finsbury, 2 to Poplar, and 2 to Wandsworth. The 37 deaths from diphtheria were slightly in excess of the corrected average for the corresponding weeks of the five preceding years; the greatest proportional mortality from this disease was recorded in Hampstead, St. Pancras, Poplar, Southwark, Deptford, and Lewisham. The 36 fatal cases of whooping-cough were 45 below the corrected average number; this disease was proportionally most fatal in Hammersmith, the City of Westminster, St. Marylebone, Hackney, Bermondsey, and Battersea. The 4 deaths from enteric fever were 7 fewer than the average, and included 2 in Paddington, 1 in Fulham, and 1 in Lambeth. The deaths from diarrhœa and enteritis among children under two years of age caused the highest death-rates in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Stepney, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 42·3 per cent. below the average.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant (on probation) Hugh G. Monteith, from the seconded list, is restored to the establishment (dated July 29th, 1911).

Colonel F. J. Jencken, administrative medical officer of the Colchester District, has been selected as Administrative Medical Officer of the Fourth Division at Army Manœuvres. Colonel T. M. Corker, principal medical officer of the British forces in Egypt, has arrived home on leave of absence. Lieutenant-Colonel J. F. Donegan, in medical charge of the Military Hospital at Parkhurst, Isle of Wight, has been transferred from the Southern to the Eastern Command. Major E. M. Morphew, commanding the

Station Hospital at Roorkee, Meerut Division, has arrived home on leave of absence from India. Captain R. N. Hunt, in medical charge of the effective troops at Bordon, has embarked for a tour of service at Cairo. Captain J. W. West has been transferred from the Military Hospital at Rawal Pindi to the Murree Cantonment. Captain J. E. Hoar, on return home from a tour of service in the Madras Presidency, has been placed in Medical Charge at Ballykinler Camp. Captain W. R. Galwey, from the Station Hospital, Lahore, has taken up duty at Dalhousie. Captain G. G. Tabuteau, from Jhansi, has been selected to command the Station Hospital at Jutogh, Simla District. Captain A. C. Osburn, in medical charge at Bedford, has joined for duty at the Military Hospital, Colchester, on relief by Lieutenant-Colonel J. Poynder. Captain J. H. Spencer, from Ambala, has been appointed to the Station Hospital at Kasauli.

INDIAN MEDICAL SERVICE.

Colonel H. Hendley, principal medical officer of the Sirhind and Jullundur Brigades, has been selected to succeed Colonel D. ffrench-Mullen as Deputy Principal Medical Officer of His Majesty's Forces in India, with effect from August 7th. Lieutenant-Colonel A. H. Nott has been granted six months' leave of absence home from India by the Home Department. Major P. Dee has been permitted by the Secretary of State for India to return to duty within the period of his leave. Major G. McI. C. Smith has been appointed Civil Surgeon of Ludhiana. Major N. P. O'G. Lalor, Deputy Sanitary Commissioner in Burma, has been placed on special duty by the Government of India in connexion with the investigation and prevention of malarial fevers. Major G. H. Stewart has been transferred from Taunggyi to Rangoon, and appointed to officiate as Sanitary Commissioner of Burma, in succession to Major N. P. O'G. Lalor. Captain A. G. Coullie has been appointed Specialist in Advanced Operative Surgery to the Third (Lahore) Division. Captain J. Proctor has taken up civil medical employment in Bengal Presidency and has been appointed to the Medical College Hospital at Calcutta. Captain A. E. J. Lister, surgeon to His Excellency the Commander-in-Chief of India, has arrived home on leave of absence. The services of Captain R. D. Saigol have been placed permanently at the disposal of the Government of India. Captain G. F. I. Harkness, civil surgeon at Wana, has been granted two months' privilege leave of absence. Captain J. Anderson has been appointed to officiate as an Agency Surgeon of the Second Class nd posted as Civil Surgeon of Dera Ismail Khan. Lieutenant A. McD. Dick has been appointed Specialist in Advanced Operative Surgery in the Burma Division.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Major George R. Swinhoe, whose resignation has been anounced, is granted permission to retain his rank and to wear the prescribed uniform.

Attached to Units other than Medical Units.—Lieutenant Charles J. I. Krumbholz to be Captain (dated April 21st, 1911). Robert Donald to be appointed Lieutenant (dated July 28th, 1911).

By the permission of the Officer Commanding Royal Army Medical Corps depot at Aldershot the sports of the 1st London Division, Royal Army Medical Corps, Territorial Force, were held on the Queen's ground, Aldershot, on August 12th, when the following units competed: 1st, 2nd, and 3rd City of London Field Ambulances, 1st General Hospital, and 1st City of London Sanitary Company. Amongst those present were: Surgeon-General G. W. Robinson, C.B., P.M.O.; Colonel P. B. Giles, C.B., A.M.O., 1st London Division; Lieutenant-Colonel J. Harper, Lieutenant-Colonel R. R. Sleman, Lieutenant-Colonel J. Norwood Brown, and Colonel C. E. Harrison, C.V.O The Miles Challenge Cup, presented by Major E. Miles, is awarded to the Field Ambulance scoring the most points in certain events at these annual sports. The 3rd Field Ambulance were the holders of the cup. When the sports started it seemed likely that the 1st Field Ambulance would not be able to attend, as owing to the exigencies of military service they had been kept at work until the afternoon, greatly to the disappointment of the men, who had only lost the cup last vear by the narrow margin of five points. But instead of giving up they started, under the hot sun, on their long march from Frith Hill, and arrived with their tents and baggage late in the afternoon, by which time seven of the events which counted for the challenge cup had already been decided, but there were seven events left for competition, including the more important and technical competitions requiring knowledge of the special work of the Royal Army Medical Corps. The aspect of the competition changed as soon as the 1st Field Ambulance, under Lieutenant-Colonel Sleman, arrived, as this unit succeeded in securing the cup by a considerable margin, winning in succession the tug of war, the operating tent and bell tent pitching, the harnessing competition, and gaining second place in the riding and driving, being only half a point behind the 2nd Field Ambulance. The 2nd Field Ambulance, commanded by Lieutenant-Colonel Norwood Brown, and the 3rd Field Ambulance, commanded by Lieutenant-Colonel Harper, were second and third respectively in order of merit. Great credit is due to Staff-Sergeant E. May, the sports secretary, for the admirable arrangements made, and the success of the afternoon is largely due to him.

Correspondence.

"Audi alteram partem."

THE INCIDENCE OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—The data appearing over the signature of J. Tertius Clarke, M.R.C.S. Eng., medical officer, Lower Perak, F.M.S., in your issue of July 15th (p. 187) are presented at a very opportune moment. They are of distinct value in connexion with the unification of our knowledge of tuberculosis and its varied manifestations among men and animals. We have much to learn concerning the ubiquity of the tubercle bacillus, and I am looking forward with pleasure to the perusal of the appendices to the report of the Royal Commission on Tuberculosis which you also announce. I am confident from the interim reports of this Commission that their data will give us many details to fill some of the broad gaps found in articles dealing with the intercommunicability of the disease and the variations in type of the causative organism.

The results of Park and Krumweide, as reported in the *Journal of Medical Research* for October, 1910, give us much information, although they drew no conclusions from the data which they presented. Upon analysis we find that of the 1042 cases which they tabulate (436 of which are reported for the first time) 26·8 per cent. of the children dying from tuberculosis under 5 years of age yield an organism of the bovine type, while children from 5 to 16 years of age yield the bovine organism in 25 per cent. of the cases. The percentage of cases giving the bovine type of organism after 16 years of age would indicate that a change in type may, and probably does, occur from the bovine to the human type, through residence in the human system in from 18 to 20 per cent. of the fatal human cases.

Is it not possible that the tubercle bacillus has a mean temperature and environment in which it attains its highest virulence, while any variation above or below this mean, or any variation unfavourable to its growth, leads to a certain attenuation, and this degree of attenuation is maintained so long as the new conditions are constant? A parallel condition is observed with anthrax vaccine and is the basis upon which the protective inoculation of animals is founded.

I am of the opinion that the mean temperature and environment giving the greatest virulence to the tubercle bacillus is found in the bovine. When the temperature is increased above or below this mean we have an attenuation—e.g., in birds (temperature 108° F.) and in the human being (temperature 98½° F.). (The bovine temperature varies from 101 to 103° F.) Some of my experiments have confirmed the transmutation of the organism from one type to another but have not been conducted in sufficient numbers to warrant their publication at this time. I anticipate being able to

devote more attention to this phase of the tuberculosis problem in the near future.

I am, Sir, yours faithfully,

CHAS. H. HIGGINS, Pathologist.

Biological Laboratory, Ottawa, August 1st, 1911.

THE NEED FOR INTERNATIONAL MEDICO-POLITICAL CONFERENCES.

To the Editor of THE LANCET.

SIR,—I venture to believe that the time has come when British medicine has much to gain from conference on medico-political matters with its brethren of other nationalities—much, perhaps, to lose for want of such conference. The likeness of the present crises in Germany and England, and theal ready expressed wish of some French medical men for a meeting of representatives of the French and English professions to discuss the legislative proposals now made in this country, taken in conjunction with such considerations as the community of interest and responsibility of all national branches of the profession, their broad national humanitarian rather than merely national outlook, the similarity of interference by various Governments with professional affairs, the obvious danger to all of mischievous limitations of the liberty of one, and the consequent necessity for community of action, not only in their own interests, but in the interests of mankind in general, point clearly, it seems to me, to the above conclusion. On the wider and more remote advantages of such meetings I do not dwell. In practical politics the "dreamer of dreams" is generally a dangerous man. But it can scarcely be doubted that the closer union of policies, the more intimate association of interests by all the national divisions of a calling, essentially one increasingly pre-eminently intellectual, and therefore increasingly pre-eminently influential, must in the long run tend to promote a better world-wide international feeling—to foster the growing desire for international peace.

A more immediately important consideration, however, of such remote policy is the avoidance of anything which could ultimately lead to undesirable results. There seem to me to be sound historical reasons against "an international medical association" on the lines indicated for "Labour" by certain Socialistic propagandists. Such associations tend to become "antinational," and have, indeed, been advocated with that very idea in view. Each nation in medicine should preserve intact its own laws and customs specially adapted to its own public, without international trammels to limit its liberty and progress. What is wanted is a committee of representatives, not too numerous, from all the civilised nations, of medicine, embodying the best brains of the profession throughout the world—a body, in fact, not very unlike the committee which constitutes the Peace Conference at the Hague. By means of such a body all important medico-political problems arising in one country could be submitted for consideration and advice to the world-wide experience of the profession. It can scarcely be doubted that the result would be of value. Advice so obtained need by no means necessarily be acted on, but could scarcely fail to beneficially affect action or to add immense weight to action taken in accordance with it. Possibly the International Medical Congresses held annually in different countries might afford the most convenient occasions.

The idea seems to me at least one which is well worth considering. Some day or other such conferences will almost certainly take place. Why not soon? The occasion seems to ask for them.

I do not suppose that many people are making the profound mistake of thinking the present crisis is a merely passing incident. It is only a beginning. No one who reflects reasonably upon the vast powers which a century of medical labour has built up in all lands will imagine that vote-needy politicians are going to pass it by with eulogistic indifference. As well expect a signed blank cheque safe during the evening visit of a burglar. The profession, I believe, has got to put its bolts and bars in order, and the sooner it does so the better, and not in one country only but in all. It is perhaps amusing, but it is scarcely reassuring, to see democracy stepping eastwards to take tips from autocracy, for the tips are not likely to be favourable to individual rights. Let those who prize liberty take all possible steps to protect it.

I am, Sir, yours faithfully,

Exeter, August 6th, 1911. W. GORDON.

SMALL-POX IN THE UNITED STATES: A DANGEROUS DOCTRINE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 22nd, on p. 236, you discussed an article on "Small-pox in the United States" published in the Public Health Reports of June 23rd. In the discussion you quoted the sentence, "That the community is protected by vaccination may be true for certain localities, but that the protection thus afforded is general can hardly be maintained," and construed it to be an assertion that it cannot be maintained that the protection afforded by vaccination is of general application.

You misconstrued the meaning of the author. The intended meaning was that, while vaccination had been practised in certain localities in the United States, and the people in these localities, therefore, possessed the protection which vaccination affords, the practice of vaccination had not been sufficiently general throughout the country as a whole to warrant the assumption that the community at large enjoyed this protection. The community at large could not be said to be protected by vaccination, not because vaccination did not protect, but because a large proportion of the people had never been vaccinated.

I shall be glad if you will publish this letter.

I am, Sir, yours faithfully,

Washington, D.C., August 7th, 1911. JOHN W. TRASK.

RUBELLA OR MEASLES?

To the Editor of THE LANCET.

SIR,—I am glad to see that my friend, Dr. Donald Hood, from his own wide experience has independently reached the same conclusion I announced some years ago—that rubella and ordinary measles are identical diseases. In my book on School Hygiene, published in 1885, I wrote, pp. 259-60: "Under the name of roseola, rubella, or rose rash, a form of disease has been described which is believed by some to be specific in nature, and by others is apparently confused with that rather mysterious disorder known as rötheln, or German measles. I have had the opportunity of studying one or two epidemics, and am thoroughly satisfied that we have merely to deal with a miniature or aberrant type of measles, as the following evidence will prove. Whilst nearly all the 30 cases which came under my observation on one occasion at Rugby School were most insignificant in character, a few ran gradually up to the type of true measles, which was reached in absolute perfection in two instances. These patients presented all the usual symptoms attendant on true measles in rather aggravated degree; there were copious eruption, high fever, and troublesome bronchial irritation, resulting, so far as careful inquiry could make out, from precisely the same infection which had barely disturbed the constitutional equanimity of the other victims of the epidemic."

I am, Sir, yours faithfully,

ROBERT FARQUHARSON, P.C., M.D.

Aboyne, N.B., August 7th, 1911.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—Does not Dr. Robert Jones in his letter of August 3rd confuse vasectomy with castration? The case he quotes was probably one of the latter, for the former has not the baleful effects Dr. Jones describes. Eugenists are agreed that castration for purposes of sterilisation is inadmissible. Dr. Jones's other contentions, in which he appears to take up the disastrously selfish position of the individual against the race, are sufficiently replied to by Dr. C. T. Ewart in the same issue.—I am, Sir, yours faithfully,

MACLEOD YEARSLEY, F.R.C.S. Eng.

Queen Anne-street, W., August 14th, 1911.

ANTISEPSIS AND ASEPSIS.

To the Editor of THE LANCET.

SIR,—"There is no such thing as an aseptic method; it is the result which should be aseptic." So says Mr. H. Alexis Thomson (THE LANCET, August 12th, p. 441), and so have I been saying for more years than I care to count.

Is it not high time that men should show some common sense in this matter and cast off prejudice?

I am, Sir, yours faithfully,

GEORGE GRANVILLE BANTOCK.

Pinner, Middlesex, August 11th, 1911.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—Since I am not writing over my signature I must refrain from any comment on the recent discussion in your paper. It has been marked on both sides by general and sweeping statements. My object in writing is to call attention to a particularly curious assertion by Mr. H. W. Bayly in your issue of August 12th. Talking of the Wassermann reaction, he says: "Probably ..... and myself have greater opportunities for extended investigations on this subject than other workers in this country." That is hardly fair on the other workers. If Mr. Bayly had investigated *this* subject he would have found that his statement was inexact; surely if he looks about the country Mr. Bayly will find people who have actually tested more cases than he has and have even had longer experience in the bacteriological study of syphilis.

I am, Sir, yours faithfully,

August 16th, 1911. BLANK.

THE SCOPE OF A MEDICAL MAN'S AUTHORITY.

To the Editor of THE LANCET.

SIR,—I am at present attending a footman with subacute rheumatism at his mistress's house. Owing to pericardial complication he has been in bed for five weeks, and is slowly convalescing. At the outset I told him he must go into the nearest infirmary, some ten miles away, and he flatly refused. I could not with his then inflamed joints send him to his home 150 miles away, with the result that his mother was wired for, and she (a monthly nurse) has nursed him all through. His mistress told me yesterday I had created a precedent, and now whenever her servants became ill they would just insist on remaining for treatment at her house. Some friends staying with her have just raised this point. Can I, the medical attendant, *enforce* the removal of this patient (or that of any other servant under similar circumstances) to a neighbouring hospital against their will? I was under the impression I could not, and I presume I was justified in the course I took. If the point is of sufficient importance would you kindly insert this letter in your correspondence columns? Thanking you in anticipation,

I am, Sir, yours faithfully,

August 5th, 1911. M.D.

*** We deal with the points in an annotation.—ED. L.

REPORT ON BREAD VALUES.—Dr. J. M. Hamill's report to the Local Government Board on the nutritive value of bread made from different varieties of wheat flour has been issued. He states that the records of experimental work consulted and of other writings do not permit any conclusive statements to be made regarding the exact relative value in nutrition of different varieties of flour. He says, however, "the notion, for example, that ordinary high grade and naturally white 'patent' flour is practically devoid of protein or nitrogenous constituents, whereas the latter are abundantly present in bread made from wholemeal and 'entire' wheat flours is erroneous." He adds that the differences are relatively of no great magnitude, and may be neutralised by imperfect absorption from the digestive tract, and that "there are commonly wider differences in protein content and energy value between 'patent' flours obtained from different wheats than between the 'patent' flour of a given wheat and the corresponding wholemeal."

THE INTERNATIONAL EXHIBITION OF HYGIENE AT DRESDEN.

(BY A SPECIAL CORRESPONDENT.)

EVERYONE who is working to diffuse amongst the people a knowledge of hygiene is offered a magnificent opportunity this year of seeing with his own eyes how attention to the laws of health can improve the physique of the individual and consequently of the nation, and of learning how to bring this knowledge of the usefulness of hygiene clearly, attractively, intelligently, and convincingly before the minds of the layman and the unlearned. For in the Dresden exhibition, which remains open till the middle of October, these things are all set out as never before, with a profusion of beautiful and well-chosen casts, models, pictures, diagrams, and preparations intended to popularise the knowledge of the foundations of health, and to convince everyone that attention to the laws of hygiene will increase his or her children's growth and regularise their development. While the prevention of disease, particularly tropical and infectious disease, is lavishly demonstrated, the keynote of the exhibition is the awakening of the people to the measures they can usefully take in their everyday life to raise their standard of ordinary health, and so to strengthen their physical frames and increase their daily output of work, not without thought for the greater combined power (as the Romans said "corroboration") that their individual improvement will give their nation, and the more numerous posterity their thus enhanced vitality will leave behind them.

Such statements are best explained by concrete examples. In the section for care of the teeth are two pictures, one a slightly altered replica of the other. In the first a charming lady with a friendly smile and beautiful teeth wins your regard; the other is like unto it, but, alas! two of her front teeth are black, and the charm has gone. I should think no girl, and hardly any boy, who passes it will forget the lesson. In the section dealing with the effects of alcohol the experience of a large insurance company is quoted. The company found that amongst a thousand teetotallers the regular number sick was two, as against five for every thousand who took alcohol, a result not quite so conclusive as it sounds. The diagram, or something like it, we have all seen before. But it became much more impressive when beside it was shown a nice coloured picture of two hospital wards, in one of which were merely the two sick teetotallers, and in the other the five alcoholics. It is quite well to tell us that houses should be properly lighted and that streets should therefore not be too narrow for the heights of the houses. It is more striking when you see, as here, good pictures emphasising the darkness of the lower rooms in the high and narrow streets of old Dresden, and the brightness of all the dwellings in the wide streets of new suburbs. This lesson is accentuated by a neighbouring exhibit of the same plants in the same soil in the three divisions of a glass case, one shielded from light by black curtains, one by white calico blinds, and the third open to sunlight. We have all seen tables of the relative fertility of families of men in different employments, but when you are shown that from 20 fathers who are farmers or foresters 25 rifles come to the country's army, but from 20 fathers who are living on their means or are well-to-do only 15 rifles are pictured, the statistics seem to acquire a far more real importance.

These examples come from the popular section called "Der Mensch," "Man," which is the *clou* of the whole exhibition. That it is so one recognises at once in the preface to the catalogue, written by the president of the directors, Geheimer Kommerzienrat K. A. Lingner—an appreciation of the relation of hygiene to the life of the State, than which I have never read a better. If one may judge from the numbers of the throng which is always packing this pavilion the lesson is being absorbed. Here I may say that the average number of visitors to the exhibition for the first two months was 30,000 per day, though the school holidays had not yet commenced. The plan of this section is particularly well thought out and complete. First the simple cell. Forty microscopes show unicellular organisms and the building up of cells into simple tissues and complex structures. Then the development of bones in the fœtus is

shown, and then the skeleton—the muscles, not in mere lecture diagrams as we know them, but in pictures. Respiration, digestion, excretion, the nervous system, the ear, the nose, the eye—each has its roomy subsection. There are machines that work and show the range of sounds a man can hear, the blending of red, blue, and green light into white, binocular vision, and so on. Then the foods a man uses are shown, the plants from which they come, their proximate principles, the relation of price and energy value of each, and the adulterations. Then we have displayed clothing, said to begin with the need for protecting the organs of generation from flies and insects—a thing like a finger of a glove from one savage nation, a fly-mat for a woman from another; then the materials of clothing, their origin (silk-worms, &c.) and their manufacture (tanning and weaving); then we see the damage that may be done by badly devised clothing, and here the exhibition of the corset was a specially thronged subsection, containing plaster casts of a woman who has worn no stays, of another who tight-laces, and of others with the anterior thoracic and abdominal walls removed. In this section are shown on a model the contraction of toes by tight boots, and varicose veins from garters. Next come houses—how to build, warm, light, and ventilate them; and beds, how to make and how not to make them, all in models, among which can be seen the old press bedstead. Alcohol and tobacco and the harm they do are illustrated by pictures of drunkards from the great painters, while the reduction of offspring in families of drunkards, the higher proportion of epileptics among them, and the lessened food value of barley when made into beer instead of being eaten are all illustrated.

Then come important diseases. One is met by "the English disease," which turns out to be rickets. There is a room for tubercle, where are found statistical statements of death-rates, pictures of the bacillus and massive cultures thereof, spitting-pots, preparations of tuberculous organs, and pictures of sanatorium life; another room is used to illustrate small-pox and vaccination; another shows venereal diseases, with many wax models of specific skin eruptions. Then follow plague, typhoid, and other acute infectious diseases. Another gallery shows the care of infants—how to hold and how not to hold them in their baths, and how to feed and clothe them. Here we have a plaster cast to show spinal curvature in a girl carrying her school books in her hand. Wax models of anthrax lesions, of washerwomen's eczema, and of "phossy jaw," bring home the realities of diseases of occupation.

The grounds are about 60 acres, there are numerous cafés and restaurants, and many bands play. There is a "stadium" for physical drill displays and athletic competitions, a swimming bath, an Abyssinian village, Moorish dancing, and a panorama of the Bavarian Highlands. So that it is quite possible to spend the whole day in the exhibition without any chance of being bored. The cost is from £8 to £10 to get to Dresden, and 25*s.* or 30*s.* a day when there, and I cannot recommend to any medical officer of health a more profitable holiday for a week. But there is so much to see that it will mean hard work, and a fortnight would be better.

The outline I have drawn gives little idea of the fulness and detail of this comprehensive exhibition.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

No Fee, No Evidence.

A CASE of some interest to medical men occurred recently in the Manchester County Court. An injured workman was seeking compensation from his employers, and counsel stated that the man's case depended on the evidence of a medical man who had been subpœnaed to attend the court. The medical man attended, but he refused to give evidence until his fee of 4 guineas was forthcoming. The counsel stated that as the workman was not able to pay the fee he would withdraw the proceedings and leave the court to deal with the case. The judge said that although the medical man could be brought into court by subpœna he was entitled to his fee, and until he was paid the court could not compel him to give evidence. The employers called several medical men on their behalf, and on their evidence the judge decided that the claim could not succeed.

Hospital Sunday Fund.

The total sum raised was £3500, which has been distributed amongst the medical charities as follows:—Royal Infirmary, £875; Children's Hospital, £456 11*s.* 4*d.*; Sick Poor and Private Nursing Institution, £302 10*s.* 8*d.*; Ancoats Hospital, £282 17*s.* 7*d.*; St. Mary's, £265 13*s.* 5*d.*; Hospital for Consumption, £247 13*s.* 3*d.*; Salford Royal, £204 17*s.* 11*d.*; Hospital for Incurables, £180 2*s.* 10*d.*; Royal Eye, £180 0*s.* 7*d.*; Northern, £153 17*s.* 10*d.*; Victoria Memorial Jewish, £95 17*s.*; Hospital for Skin Diseases, £88 4*s.* 7*d.*; Ear Hospital, £44 12*s.* 6*d.*; Christie, £32 6*s.*; Dental, £28 19*s.*; Greengate Dispensary, £23 19*s.* 1*d.*; Hulme Dispensary, £23 5*s.* 2*d.*; Chorlton-on-Medlock Dispensary, £12 1*s.* 4*d.*; and Lock Hospital, £1 9*s.* 11*d.*

Salford School Children.

At its last meeting the Salford education committee was called on to consider a report on the appointment of an additional medical officer for the examination of school children. In consequence of the large number of re-examinations which have become necessary it is impossible for the medical officer to carry out the ordinary examinations at the schools in accordance with the requirements of the Board of Education. The work is increasing greatly. The opinion was expressed that the extra responsibilities should not be placed on the shoulders of the education authorities unless it were the intention of the Board of Education to give them extra financial assistance. It was agreed that the health and cleanliness of the children had improved considerably since the examinations had taken place. Ultimately, the question was referred back to the elementary education sub-committee.

Report on the Outbreak of Ptomaine Poisoning at Bacup.

A full report has now been issued by Mr. E. Sergeant, county medical officer of health of Lancashire, on the occurrence of the serious outbreak of ptomaine poisoning in the Borough of Bacup which I referred to in my letter in your issue of August 5th. Of the total attacks in the administrative county—205 in number (males 98, females 107)—175 were found to be due to potted meat and 30 to roast pork. Of these cases 188 occurred within the Borough of Bacup. In every case the suspected food came originally from the same source in Bacup. The infected food was remarkably virulent, for of the 207 persons known to have partaken of it only 2 escaped illness, and cases appeared in 96 households. The time which elapsed before the first appearance of illness after the consumption of either potted meat or roast pork varied from half an hour to 65 hours, and even the consumption of less than an ounce in weight gave rise to the characteristic symptoms: severe abdominal pain, vomiting, and profuse diarrhœa, and in some cases great prostration. Of the five deaths all were due to potted meat. Examination of fatal cases showed that the blood and organs in each case contained the bacillus of the Gärtner type usually recognised under such circumstances. The cause of the food infection has not so far been satisfactorily elucidated, but one condition set out in the report must be viewed with suspicion. "It appears that the shopkeeper, in order to provide a cooling place for his cooked food, made an entrance from his cookhouse into an adjoining stable by breaking through a portion of the partition wall, and in this place, which had a loft above containing pigeons and was only separated by a wooden partition from another part of the premises used as a stable for one horse, all the suspected food in question was cooled, excepting the roast pork which, it is stated, was stored in the cookhouse, and therefore partially under the influence of the stable air, until removed to the shop next day. Several samples of air, &c., from this unique storehouse have been examined bacteriologically, but up to the present time no bacteria of the Gärtner type have been found."

Women and Inebriate Homes.

At the meeting of the Lancashire Inebriates Board, held at Preston, the chairman of the Langho Inebriates Home gave instances of the irreformable character of some of the women committed to this institution. This shows the futility of existing legislation, which requires that such a

person must again "qualify" for admission to such a home by undergoing three short terms of imprisonment before she can be re-committed. London, it seems, sends women to the homes earlier in their decadent career, with a better chance of recovery. The chairman expressed the wish that Lancashire would do likewise. Of the 210 women committed to the home, 64 came from Manchester and 50 from Liverpool.

Rochdale and Compulsory Notification of Phthisis.

The local health authorities at Rochdale have proposed that phthisis should be made a compulsorily notifiable disease. The Local Government Board held an inquiry in Rochdale on July 18th, at which the town clerk stated that one of the reasons which had led to the proposition was that voluntary notification had broken down. In 1905 37 cases were notified voluntarily, 11 were notified in 1909, and 20 in 1910. It is proposed to form a joint committee of the health authorities and the Rochdale board of guardians. Nurses are to visit the cases notified and the authorities to contribute to the cost according to the rateable value.

August 15th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENT.)

The Pecuniary Position of Cardiff Infirmary.

IN addition to the National Memorial to King Edward VII., which is taking the form of a complete scheme for the prevention and treatment of tuberculosis in the Principality, there is being raised in Cardiff a memorial fund, the proceeds of which are to be given to the Cardiff Infirmary. Seven successive years in which the expenditure of the institution has exceeded the income has resulted in a debt of about £20,000, upon which sum interest has to be paid. There has already been subscribed to the memorial fund over £19,000, so that the current indebtedness of the governors has practically been wiped out. The average yearly expenditure is about £15,000, and when the new wings now in course of erection are completed with their additional 82 beds, it is expected that that amount will be increased to £20,000. It is proposed, therefore, that the memorial funds shall be applied to augment the capital which is already invested by the governors. In recent years the contributions of workpeople, both in Cardiff and in the adjoining districts, have been collected under an organised system, and in 1910 they yielded £4700. The general subscriptions amounted to £2900, or nearly £150 less than the sum derived from the same source in 1900, although between the two dates named the population of Cardiff has increased by nearly 20,000 persons. When it is remembered that the infirmary serves not only the inhabitants of Cardiff, who numbered at the last census 182,000, but a population in the colliery districts of Pontypridd and the Rhondda valleys of over 200,000 persons, it is difficult to understand why there should be such a comparatively small subscription list.

Medical Treatment of School Children in Cardiff.

In the annual report of the Cardiff school medical officer, Dr. E. Walford, an account is given of some of the methods by which children found defective on medical inspection receive treatment. Many of them attend the out-patient department of the infirmary, where they are attended free by the ophthalmic surgeons and dentists. In other cases they are attended by dentists, with seven of whom arrangements have been made to attend school children at reduced fees, extractions being performed for 6*d.*, and stoppings for 2*s.* each tooth in cases where only one visit is necessary, and 2*s.* 6*d.* where more than one visit is required. In April, 1910, Dr. Walford wrote to the ophthalmic surgeons in the town, asking them if they would be willing to attend the school children who were found to have defective vision. Two of the surgeons agreed to attend such children at a reduced fee of 7*s.* per consultation and prescription. Arrangements have also been made with opticians to supply spectacles at a reduced rate. All these charges are apparently paid by the parents and not by the education authority, although the report is not very clear on this point. Minor ailments are treated by the school nurses at the City Hall under the direction of the medical inspectors. This arrangement has been sanctioned by the Board of Education, and presumably is acquiesced in by the practitioners of the town. There is at present no special provision in Cardiff for carrying out the cleansing section of the Children Act, but this defect is to be remedied by the erection of a cleansing and disinfecting station.

The Sanitation of Pembrokeshire Schools.

The sanitary authorities in the western counties of Wales have notoriously neglected their duties in so far as the inspection of dwelling houses are concerned, and the remedying of unsatisfactory conditions that have been brought to their notice. That they have paid little or no attention to the sanitary condition of the elementary schools is apparent from the report of Dr. Thomas Evans, formerly school medical officer of Pembrokeshire and now medical officer of health for the county borough of Swansea. In no less than 40 of the Pembrokeshire schools there is no supply of water, either for cleansing or for drinking purposes, and in 83 there is none for drinking. The sanitary conveniences in many schools are very unsatisfactory, and altogether there is ample evidence of the need for a thorough inspection of the school buildings in the county.

Spotted Fever in the West of England.

At the last meeting of the Holsworthy (North Devon) urban district council a resolution was passed by the casting vote of the chairman: "That an emergency is caused by an epidemic of cerebro-spinal fever and poliomyelitis (anterior) and this disease shall be notified in the district for six months from August 19th." The Stratton and Bude urban district council, the Stratton rural district council, and the Holsworthy rural district council have also made the disease notifiable for six months. Dr. R. J. Reece, of the Local Government Board, in addressing the Holsworthy rural district council, stated that there were probably about 30 cases in that district. Some of the cases have proved fatal, and it is stated that two deaths occurred in adults.

A Double Tragedy.

Mr. C. W. Young died at his residence, Newcomin Cottage, Dartmouth, on August 7th, after an operation for appendicitis. His widow, who had been so anxious for her husband's recovery as to be not always rational in her actions, took hydrocyanic acid and died a few hours after her husband. A verdict to the effect that "Death was due to prussic acid whilst temporarily insane" was returned by the coroner's jury. Mr. Young, who received his medical education at Charing Cross Hospital, qualified as L.R.C.P. Lond. and M.R.C.S. Eng. in 1895, taking the D.P.H. of Cambridge in 1899. After holding resident appointments at Charing Cross Hospital and the Stockton and Thornaby Hospital Mr. Young practised at Luton (Beds) and was on the honorary staff of the Bute Hospital, Luton. He afterwards went to Dartmouth and was appointed an honorary surgeon to the Dartmouth (Devon) Cottage Hospital. Mr. Young was very popular in Dartmouth, and much regret is felt there at his death and at the tragic decease of Mrs. Young. Both bodies were interred at Luton.

August 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Lochee, Dundee.

THE medical officer of health of Dundee, Dr. Charles Templeman, gave a report of the outbreak of small-pox in Lochee at a meeting of the public health committee on August 1st. The first cases occurred in a family of perfectly cleanly habits, residing in an isolated tenement, but the father had only been imperfectly vaccinated and two of the children not at all. The father, mother, and these two children were attacked. The father died in hospital two hours after admission. Three other children who had been properly vaccinated were not attacked. On the following day two women who resided in the same tenement and had visited the infected family were found to be suffering from small-pox and were removed to hospital, where one of them died. On July 28th another case occurred in a tenement in the same street of a young girl who had visited a relative in the first infected tenement. There are at present six cases in hospital and 23 persons in the reception-house. Dr. Templeman

remarked that during the outbreak his experience had been that the early cases were always regarded as chicken-pox, and as the season was approaching at which small-pox was most apt to appear in epidemic form he suggested that the committee should recommend the town council for the following year to add chicken-pox to the list of diseases which were compulsorily notifiable. He had not been able to ascertain where the infection primarily came from, but this confirmed his suspicion that the disease was being spread by mild cases which had been missed, probably regarded as chicken-pox. It was agreed to recommend that chicken-pox should be made compulsorily notifiable for the next twelve months.

Increase of Tuberculosis in Aberdeen.

Dr. Matthew Hay, medical officer of health of Aberdeen, says that during the quarter 29 tuberculous cases were admitted to the City Hospital. The pavilion for tuberculous cases has been constantly full, and there has always been a large number in waiting. The erection of a new shelter in connexion with the pavilion will provide for an additional 45 male cases and for 8 or 10 female cases, increasing the accommodation for tuberculous cases by one-half.

Inadequate Accommodation at Kingseat Asylum Hospital.

In his report to the asylum committee of Aberdeen district lunacy board Dr. John Macpherson, Commissioner in Lunacy, says that the hospital accommodation at Kingseat Asylum is unfortunately proving too limited and will become more so as time goes on. Excluding the isolation wards, 90 of the 93 beds in the building were occupied, and several patients who would otherwise have been in hospital were being treated in villas. In bringing this question of accommodation to the consideration of the district board, it was necessary to explain that within recent years a perceptible change had taken place in the type of patients admitted to all the asylums in the country. Persons in weakly physical health and those suffering from the infirmities of old age were now being sent to asylums in proportionately larger numbers than formerly, and the strain upon the hospital section of asylums was universally felt. It was evident therefore that the district board must sooner or later face the necessity of erecting hospital accommodation for the institution. The asylum committee also considered the question of the assistant medical officership at Kingseat, and reported that it had before it two applications for the vacant post from lady graduates in medicine. The committee resolved again to advertise the post at a salary of £120 per annum, with board, as formerly offered, and suggested that in the meantime the medical superintendent should engage a locum tenens.

Typhus Fever in Lewis.

At a meeting of the Lewis district committee, held at Stornaway on August 7th, the report of Dr. D. Murray, district medical officer of health, on the recent outbreak of typhus fever in the township of Borve, was submitted. Eighteen cases were notified, occurring in six families, and there were three deaths. The report states: "There is no cause for surprise in this epidemic; the strange element in the situation is that typhus fever should ever be absent from Borve. The village is an exaggerated microcosm of the worst sanitary features of the Island of Lewis—a congeries of the blackest of black houses, huddled together in a manure-laden swamp. In many cases the sleeping apartment of one house is cheek-by-jowl with the byre end of the next, the manure in the latter at a much higher level than the bedroom. In Borve—as elsewhere—there is some evidence of progress in the building of a better class of house; but the great majority of the dwellings outrage the most elementary sanitary principles." They are built on sites which are impossible to drain, and are consequently sodden and reeking with the products of the byre—a most fertile breeding-ground for fever and other diseases. "The remedy can be briefly stated. The great majority of the present houses should be condemned and a better class built on healthier sites." It appears that sites for crofters could be got on the common grazings, but not for cottars. Typhus fever, however, has no respect for persons, be they crofters, cottars, or squatters, and unless the inhabitants are all removed to healthier sites—which are plentiful in the neighbourhood—we may be sure, as Dr. Murray says, that outbreaks of virulent infectious diseases, perhaps in a more extensive and aggravated form, will recur from time to time. The chairman of the Lewis district committee remarked that some years ago negotiations for better housing had fallen through, owing to the fact that, in addition to the crofters' houses, there were also houses occupied by squatters, who are not tenants of the estate, and have no legal standing in the community; and to provide sites for them would be to give them a recognition which the proprietor, in view of the provisions of the Crofter's Act, did not feel justified in giving them. On the occasion of one of his visits to Lewis, Lord Pentland visited Borve and saw for himself the sad condition of affairs there, and on a later occasion he (the chairman) accompanied Mr. Coles, of the Congested Districts Board, to Borve and had a conference with the people. He had no doubt that if new sites were offered, and a little financial assistance given, there would be no difficulty in getting the public to erect new houses. It was agreed to send a copy of Dr. Murray's report to the Scotch Office and to the Local Government Board, in the hope that they will see their way to assist the local authority in carrying out some improvements.

August 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in Dublin.

A FEW months ago a committee was appointed at a public meeting in the Mansion House, Dublin, to attempt to reduce the high rate of infant mortality in Dublin. It is reported that there are now 35 voluntary health visitors working under the committee, while some 20 more are being trained for the work. Over 100 nursing mothers are visited on an average each month. The Countess of Aberdeen has offered to supply pasteurised milk free in suitable cases to mothers and babies. Diarrhœal diseases are very prevalent in Dublin this year, probably as a result of the unusually hot weather. In the three weeks ending August 5th the deaths of children under one year of age were respectively 31, 46, and 53. The Women's National Health Association has employed eight nurses temporarily to assist the Poor-law medical officers in dealing with disease in children.

The Dublin Hospitals and the Insurance Bill.

The Board of Superintendence of Dublin Hospitals, a body which supervises the work of those hospitals in Dublin that are in receipt of Government grants, in its annual report presented last week takes occasion to remark on the effect the Insurance Bill, if passed, may be expected to have on the finances of the Dublin hospitals:—

> Hitherto (the report states) the public have looked on the labouring man disabled for work as a fit object for charity. They have subscribed and left legacies to hospitals because it was known that through the wards of the hospital and the special dispensaries attached to them lay the smoothest, shortest, and most economical road to recovery. It is unlikely, should the State arrange for the care of the labouring classes when incapacitated by sickness, that the charitably inclined will continue to subscribe to the same extent. ..... It is not too much to say that a club doctor, responsible for the health of a large number of workpeople, will, in a great majority of the cases, have to call on the hospitals or their dispensaries for help. On what terms will this be given? If the voluntary aid system is abolished, it must mean a suitable remuneration for all medical service. We are of opinion that a system on such a foundation would not work as well or as economically as does the present one.

Royal Institute of Public Health.

The Congress of the Royal Institute of Public Health was opened on August 15th in Trinity College, Dublin, when a reception was held by the President, Lady Aberdeen. The presidential address followed. There was a fairly large attendance. The Congress meets every day until August 21st.

The Lane-ways of Dublin.

A potent source of disease in the poorer parts of Dublin is to be found in lanes and courts. There are some 894 streets, alleys, courts, lanes, and roads in the city of Dublin, which are not under the charge of the corporation, and in these refuse collects in great quantities. The corporation apparently has no power to spend money in removing such material, though it has power to compel the owners of these properties to keep their premises in such condition that they should not be a source of disease. The nuisance, however, is

by no means confined to lanes not in charge of the corporation, for the public streets in the poorer quarters are little better kept, in spite of the fact that some £50,000 a year is spent in the cleansing of the streets of Dublin.

Appointment of a City Bacteriologist for Dublin.

Matters have come to a deadlock as regards the appointment of a city bacteriologist for Dublin, as the Local Government Board persists in its refusal to sanction the appointment of the gentleman elected by the corporation. At a meeting of the corporation a few days ago the town clerk read a letter from the Local Government Board stating that they could hold out no hope that they would alter their decision in refusing to regard Dr. Russell as a person possessing the proper qualifications for the post of city bacteriologist. The letter added that the fact that Dr. Russell had passed the examination for a Diploma in Public Health could not in itself be taken as entitling him to be regarded as a bacteriologist under Section 15 of the Prevention of Tuberculosis (Ireland) Act. In a previous letter the Local Government Board had given as a reason for refusing its sanction that Dr. Russell, being a dispensary medical officer, had his time already fully occupied. The corporation has now decided to make no appointment.

The Apothecaries' Hall of Ireland.

The annual meeting of the members of the Apothecaries' Hall of Ireland took place on August 1st. The Governor, Dr. Caleb J. Powell, occupied the chair. The meeting was the largest that has taken place for many years, and the greatest interest was taken in all matters discussed. After the annual report had been read the following appointments were made:—Governor: Dr. Edward Magennis. Deputy-Governor: Dr. J. C. McWalter. Representative on the General Medical Council: Lieutenant-Colonel F. G. Adye-Curran, A.M.S. Registrar: Mr. H. W. Mason. The following were elected Directors: Lieutenant-Colonel Adye-Curran, retired. J. D. Crinion, O'C. J. Delahoyde, B. B. Kennedy, T. G. McGrath, R. P. McDonnell, H. W. Mason, J. J. O'Sullivan, C. J. Powell, J. Shaw, G. S. Stritch, J. A. Whelan.

Sanitation of Portadown.

At a meeting of the Portadown town council held on August 8th a letter was read from the Castleisland Linen Company, calling the attention of the council to the fact that it was discharging sewage into the Garvaghy river, which was causing the company great loss and was also a serious menace to the health of their workers. The water now coming down the river Bann at Portadown was practically undiluted sewage, and it was alleged that the council had filled the wharf of the company with sewage matter. The water in the river was at present in such a state as to be not only a danger to the health of the company's employees, but worse than useless for business purposes. The medical officer of health (Mr. J. L. Rowlett), who was present, said it was a shame and a disgrace that there should be four deaths of children within the week which could have been prevented by proper sanitary accommodation. The matter was referred to the sanitary committee. Portadown has recently and wisely obtained a good water-supply, but it will need to undertake a sewerage scheme as well.

Monaghan and Cavan Asylum Board.

The question of asylum accommodation in Ireland is rapidly becoming a serious one. When an institution is common to two adjacent counties there is apt to be a decided difference of opinion how to provide for an increasing number of lunatics. In the asylum common to Monaghan and Cavan there are at present 920 inmates, of whom 505 are chargeable to county Cavan and 415 to county Monaghan. The board met on August 10th to decide how additional accommodation could be provided to relieve the present congested state of the asylum. The representatives of county Cavan proposed that steps should be taken at once to supply additional accommodation, provided, however, that if any definite proposal were brought before the joint committee by the Cavan representatives at the September meeting it should receive consideration before proceeding further. The Cavan representatives proposed as an amendment that, in the event of no guarantee being forthcoming at the September meeting, an inquiry should be held by the inspectors or some other governing body, who should then proceed to consider the adjourned question of providing such additional accommodation. On a division the seven Cavan members voted for the amendment and the eight Monaghan representatives for the motion, which was carried, and a committee was appointed to make inquiries with regard to the building best suited to the purpose.

Sad Death of a Belfast Practitioner's Son.

Very wide sympathy is felt for Dr. T. K. Wheeler at the drowning, on August 12th, of his eldest son, Mr. T. K. Wheeler, a medical student of very great promise of the Queen's University of Belfast. Mr. Wheeler, who was spending his holidays at Islandmagee on the county Antrim coast, was bathing, when his strength gave way and he sank, despite the heroic efforts of Dr. Charles Dickson to save him. Mr. Wheeler was not only an excellent scholar, but a good cricketer and footballer, and he was a member of the Belfast University contingent of the Officers' Training Corps.

August 15ht.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Preventive Measures Against Cholera.

THE appearance of cholera in Italy has for some weeks given rise to fears as to the possibility of its extension in epidemic form to France. As a matter of fact this has not as yet occurred; most of the cases announced by the press—at Marseilles, at Paris, at Montpellier, at Armentières—are proving to be cases of cholera nostras or cholerine, such as are observed every year about this time. But there are cases of cholera at Marseilles and Montpellier which, it must be admitted, do resemble true cholera in that they have occurred in subjects coming from Italy, and consequently suspects. Bacteriological examination of the stools has given suspicious, though not absolutely conclusive, results. Nevertheless, the most careful precautions have been taken; all the sanitary posts are watchful and the Pasteur Institute has just sent to Marseilles a supply of Dr. Salembéni's anticholera serum, of which Dr Döpfer and Dr. Salembéni himself will supervise the application. The lazaret of Frioul has been got ready to receive travellers in cases where quarantine is deemed necessary. The system of surveillance adopted by the authorities—both French and Italian—is based on the principle of minimising the restraint imposed on travellers. Only actual experience can determine whether it is adequate. At Ventimiglia and at Modane the traveller coming from Italy into France is not subjected to any inquisition; his name is taken and also his destination as shown by his railway tickets. The mayor of that place is then advised by telegram, and immediately on the traveller's arrival he is visited by the district physician, who subjects him to a discreet examination, and on the occurrence of the first alarming symptom makes a bacteriological examination of the stools. If cholera is officially recognised the subject is at once isolated, and those of his entourage are placed under supervision. If experience proves that this procedure is adequate it must be admitted that it is the most humane method and the least vexatious one for the public, but it needs for its perfect execution the goodwill of both traveller and medical man, two human factors upon which it is impossible always to count. The traveller who may happen to resent as unjustifiable and vexatious the supervision to be exercised over him on his arrival at his destination can very easily elude it when he has learnt the *modus operandi* of the system, by taking, before reaching the frontier, a ticket for some place other than his actual destination, since it is the ticket that gives him away. For instance, he can take a ticket for Toulon, and on his arrival in the station there can immediately book for Paris, where there will be no advice of his coming. It is essential, therefore, that the surveillance to which the traveller will be subjected on his arrival at his destination shall not be such as to inspire opposition, and that there shall be no fear that he will be exposed to unnecessary and vexatious examinations and to circumstances that will subject him to the annoying curiosity and the distrust of the inhabitants. It is to be hoped, then, that no medical man on whom this duty shall fall, perhaps a simple country general practitioner appointed by the mayor, will succumb to the temptation to be over-zealous, which would cause travellers to resent his interference and elude the system by

a false declaration. It is easy to see that this method, excellent as are the sentiments that have inspired it, rests on a very fragile foundation. Further, it fails to entail a proper disinfection of baggage and merchandise. The principle of allowing the possible cholera subject to pass and of immediately confining each case as soon as it declares itself is evidently one for the success of which hygienists and sociologists, not to say merchants, ought to hope. But if epidemic cases should break out suddenly in several localities at the same time it is likely enough that the old system of tightly barring the frontiers would be returned to.

Paving and Pastry.

The wood pavements of the streets of Paris are very strongly impregnated with tar, so that while they are being laid or repaired a strong odour of tar pervades the streets. This odour persists for some time after paving operations are finished, especially if the temperature is at all high and the street narrow and confined by tall houses. These facts have given rise to a peculiar action at law which has just come to a serious if satisfactory conclusion. A pastrycook whose shop is situated in the Rue de Buci became a victim last year of the tarred pavement when the authorities ordered the repairing of the street in front of his shop. It was in June, so that the windows were kept open, and all the cakes that were exposed on his counter contracted a disagreeable savour of tar, which aroused considerable discontent among his *clientèle*, who stopped dealing with him. The pastrycook, having thus suffered considerable loss, brought an action against the administration of the city of Paris to recover damages for the injury inflicted on him. The city refused to recompense him, so he summoned the administration before the Conseil d'État, which, after many months of thought and experiment (since the decision would create a precedent that would impose in the future on the city the burden of very heavy charges in similar cases), nevertheless upheld the pastrycook and ordered the city to pay him an indemnity of 1760 francs. The judgment points out that the pastry had really been rendered uneatable by the tar emanations, thus creating an individual injury in excess of the proportion that every individual is called on to suffer in the public interest. The experiments demonstrated that the fatty matters and the butter entering into the composition of the pastry had strongly absorbed the vapour of naphthalene, creasote, and tar disengaged from the street pavement. The injury resulted, therefore, as much from the emanation of vapours as from the dissemination of dust. This faculty of fatty matters, and of objects that contain them in any great proportion, to absorb and retain the most diverse odours, good or bad, with great tenacity, is of course a well-known fact, and is frequently observed in butter and eggs; on the other hand, it is taken advantage of by the manufacturers of perfumes, who use for their extraction from plants lard and the oils. This decision is of considerable interest, small though the incident is that served as its starting point, for every time that wood paving is under operation in Paris the amounts to be claimed by the neighbouring shopkeepers may materially raise the cost of wood-paving. Paris may even have to seek, if not another mode of paving, at least some other means of obviating the rotting of the wood, which is the sole purpose of the use of tar. Possibly the impregnation of the wood with mere dehydrating substances might be worth experimenting with. These facts will be of interest to all cities where wood-paving is employed. The session of the court at which the judges were called on to taste the cakes and decide whether or not they were agreeable to taste must have been a curious tea party.

August 14th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Question of Nursing.

THE question has been lately much discussed whether there is a decreasing ability of mothers to suckle, and before the Berlin Medical Society Professor Frantz read a paper on the subject. He said that many practitioners believe that a great many mothers are unable to suckle their infants; these views are, according to the author, erroneous. There may be some difficulties in certain cases, but a physiological inability to suckle does not exist. It is always possible to overcome these difficulties by patience, and to produce a sufficient lactation. In the lying-in hospital of the University of Berlin, of which Professor Frantz is the director, the infants are given the breast, as a rule 20 hours after birth, five times daily for ten minutes, but not during the night. For lactation the form of the breast and of the nipple is without importance; suckling is possible with every form of breast. It is essential that the puerpera should receive from the first day nutritious food and be allowed to move in bed. Only tuberculosis is a contra-indication against suckling, but not merely a passing feverish state. In Professor Frantz's hospital in Berlin and formerly in Kiel 100 per cent. of the mothers were able to suckle their infants. Professor Heubner stated that in the infants' asylum under his care 83 per cent. of the mothers were able to suckle till the end of the third month, the time when they must leave according to the rules of the institution. Of the remainder, 17 per cent., in some cases the secretion by-and-by completely ceased; in some cases the lactation was at first very satisfactory, but became after some weeks rather scanty; in another series only 300–400 grammes of milk were secreted from the beginning and no increase could be obtained, so that cow's milk must be added; in the last series the secretion was at first insufficient, but later increased, sometimes only in the third month, so that the cow's milk could then be dispensed with. Professor Heubner was also of opinion that, apart from some exceptions, a physiological inability to suckle does not exist. Dr. Finkelstein said that in private practice the conditions differed from those in public lying-in hospitals or infants' asylums. It would, of course, be of the utmost importance if the necessity for wet-nurses could be done away with, as syphilis is more often conveyed by them than is generally believed. It is, however, often impossible for the practitioner to induce mothers to nurse, and if he insists he would certainly often lose his patient and be replaced by a more complaisant medical man. Also a certain number of infants can by no means be induced to take the breast. In private practice mastitis is more frequent than in asylums, the reason being that the infants are given the breast too often and that the nipples are irritated by a too violent mechanical disinfection. Dr. Kassel and Dr. Keller stated that in their asylums nearly all the mothers were able to nurse, but that sometimes the milk became deficient in the third or fourth week. Dr. Aschoff said that it was, of course, possible for every mother to secrete a certain quantity of milk within the first days, but he did not believe that every woman could nurse her infant, if nursing means providing a sufficient secretion for at least five to six months. In asylums, as stated by Professor Heubner, when the secretion of the mother is so small, they make the infant take the breast of another woman too, but this is, of course, not available in private practice, and a wet-nurse is then required. In his experience 20 per cent. of mothers are unable to produce a sufficient quantity of milk. He wished to draw attention to the erroneous opinion that the quantity of milk is alone of importance. Sometimes infants do not get on even when an abundance of milk is produced, but do so at once when there is a change of wet-nurses, showing that the difference in the quality is also a factor.

Operation for Fat Abdomen.

Dr. Jolly, assistant surgeon to the gynæcological clinic of the University of Berlin, writing to the *Berliner Klinische Wochenschrift*, gives a description of an operation for fat abdomen. He said that this condition must be distinguished from pendulous abdomen, the difference being that in the former there is only an abnormal accumulation of fat in the abdominal wall, but that the fascia and the abdominal muscles are intact, whilst in the latter there is an atony of the abdominal walls so that the intestines are in an abnormal position. The diagnosis is made with the patient in a standing position, when it is possible to see whether the abdominal walls are thin and relaxed or whether there is only a pendulous mass of fat hanging as an apron before the firm abdominal wall. The fat-apron must then be lifted up to see how great a quantity may be removed. A circular and transverse incision is then made on the upper part of the fat-apron and a second on the lower part of it, both circles being convex below. The incision must go down to the fascia, the mass of fat between both incisions being extirpated, and the edges of the large wound sutured with

catgut. The above operation was performed on two women who suffered very much from an enormous accumulation of fat. They were both relieved, the wounds healing by primary union. There are only two instances in international medical literature of similar operations, the one concerning a man operated upon by Dr. Demars and Dr. Marx of Paris, and the other by Dr. Schulz, a Russian surgeon.

Death of Profesor Senator.

The Berlin Medical Society and the profession in general have sustained a heavy loss by the death of Professor Senator, late ordinary professor of clinical medicine at the University and honorary President of the Berlin Medical Society. Professor Senator was born in Gnesen, Province of Posen, in 1834, and after having passed through the curriculum in Berlin became qualified in 1858. On account of his financial position he was compelled to settle at once as a general practitioner in Berlin. But although he soon obtained a rather extensive *clientèle* he used his leisure hours for scientific study, so that in 1868 he was recognised as *privat-docent* for clinical medicine. He served in the German-French war in 1870–71, when he was made chief medical officer to a military hospital. He became in this position a favourite of the late Empress Augusta, who caused him to be appointed chief physician to the Augusta Hospital in Berlin, of which she was the patroness, an appointment held by him until 1888, when he was made director of the medical polyclinic of the University and later of the third medical clinic. Reasons of health compelled him to retire a year ago from active duties and also from the presidency of the Berlin Medical Society, of which, however, he remained honorary president. The career of Professor Senator differs from that of the majority of the members of the medical faculty in that he never was an assistant to any clinical or other university institution, but beginning as a general practitioner became one of the leading men of the Berlin medical faculty. His work concerned especially the diseases of the kidneys and metabolism generally; the number of his essays, books, and other communications is so great that space would not permit of mentioning even the titles here. His handbook on the diseases of the kidneys has become a standard work of German medical literature, and his monograph on diabetes in Ziemssen's handbook is also well known to the profession. On the occasion of his 70th birthday his assistants edited a "Festschrift," where a detailed report of his work was given; there were no less than 185 works mentioned and they have certainly increased to 200 since that time. Since June, 1910, on the occasion of the 50th anniversary of the Medical Society, when he was 76 years old, he dedicated to the society a recently written book on "Polycythæmia and Plethora," and he was indeed busy until recently, when symptoms of cardiac failure developed. He was an excellent clinical teacher, generally liked by the students, and as a chairman of the Medical Society presided over the meetings in an accomplished manner. The number of his patients was enormous, especially from Russia. He was one of the attending physicians to the late Emperor Frederick during his fatal illness.

August 5th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Illness of the Pope.

SINCE July 27th, when I briefly referred to the Holy Father's illness as dating from his exertions, on a day of stifling heat, in celebrating the anniversary of his predecessor's death, the lay press, particularly that of Germany, has been prolific in reporting further complications, till the world has been impressed with the fear that the said illness is of the gravest kind. The facts, derived from a trustworthy source, are these: On the day in question His Holiness was suffering from a slight laryngo-pharyngeal congestion, causing hoarseness and partial aphonia, but he persevered in carrying out the function, till, at its close, he was visibly exhausted, mentally and physically. In the evening the temperature had risen, the cough, previously slight, had become harassing, and the night's rest was broken in consequence. Next morning his body physician, Dr. Petucci, in consultation with Dr. Marchiafava, found the upper bronchi involved, with slightly increased febricula and accelerated respiration. Absolute rest and abstention from "audiences" of every kind kept the symptoms stationary till, on August 6th, an attack of gout in the knee called for immediate treatment. Relief was obtained accordingly, but the august patient found the heat so oppressive that it was thought necessary to change his dormitory to a less sunny exposure. This was done on August 9th with manifest benefit. On the following day, the anniversary of his coronation, the Holy Father had to delegate its celebration to Cardinal Merry del Val, and remained in bed, receiving no visits but those, in the morning and evening, of his physicians. On the morning of June 11th he was quite free from pain in the affected knee; the swelling had diminished; he was able to get out of bed and to make a promenade across the room without support. The othe symptoms, bronchial and laryngo-pharyngeal, had responded satisfactorily to the prescriptions; and nourishment, with a little wine (barolo, to wit, known as the "Piedmontese burgundy"), had been taken with relish. There are no complications of any significance, and the heart has recovered its tone. The one consideration pre-occupying his physicians is the Holy Father's sense of confinement, missing, as he does, the "life on the lagoons" and the fresh breezes which alternate between the Alps and the Adriatic. From year to year his rôle of "prisoner with doors locked on the inside" becomes more irksome; he is getting obese, in spite of exercise in the Vatican gardens or (in unfavourable weather) along one or other of the miles of passages in the Apostolic palace; and his resisting power to occasional illness or to mental fatigue is gradually lessening. For this state of things the remedy is not medical but political; and it remains to be seen whether the *modus vivendi* which appeared on the point of being effected between Leo XIII. and King Humbert may not be brought about between Pius X. and Victor Emanuel III., so that the Holy Father can avail himself of his summer resort on the Alban Hills, or even go farther afield and get rehabilitation, physical and mental, from the "Queen of the Adriatic" herself! As I write the *Osservatore Romano*, the official organ of the Vatican, closes its bulletin with the announcement: "Oggi le condizioni di Sua Santità possono dirsi veramente soddisfacenti." ("To-day the condition of His Holiness may be said to be truly satisfactory.")

The National Monument to Cesare Lombroso.

Verona, it is well known, has been contemplating a monument in commemoration of her distinguished son, the founder of criminal anthropology, the commission for which has been entrusted to one of Italy's best sculptors, Leonardo Bistolfi. All Europe has cordially associated itself with the undertaking, and in its principal nationalities ten committees have been organised to collect subscriptions, while from America, North and South, a similar movement is announced. Japan is the latest accession to the object in contemplation, having formed a committee *ad hoc* consisting of the professor of criminal law in the University of Tokyo, the professor of psychiatry in the same seat of learning, the professor of penal law in the University of Kyoto, the director of the school of foreign languages at Tokyo, and the professor of anthropology at the same University. The Japanese committee, as a first subscription, has collected 1236 francs, the Minister of Justice heading the list with 200 yen (400 francs). Other subscribers are the Minister of the Interior, the Minister of Public Instruction, and the Minister of War.

August 12th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Paratyphoid Infections.

AT the symposium on typhoid fever and water-supplies held in the section of Preventive Medicine of the Canadian Medical Association, which took place recently in Montreal, the typhoid-like infections were discussed at considerable length. Mr. T. A. Starkey, M.B. Lond., professor of hygiene at the McGill University and chairman of the section, has during several years insisted that in all the epidemics of typhoid fever which have come under his observation in Canada the typhoid-like infections have been prevalent and in some instances predominant. Attention

was directed to Professor Starkey's views on this matter in an article dealing with the typhoid epidemic in Montreal which appeared in THE LANCET of April 23rd, 1910. As a matter of fact, Professor Starkey has emphasised this phase of the situation in Canada on several occasions during the past few years. The paratyphoid infections are at the present time being subjected to close investigation by bacteriologists and there is some difference of opinion as to the differentiation of the same. In Canada opportunities for studying the question under favourable circumstances occur frequently, epidemics of typhoid fever are common, the paratyphoid infections appearing to play a prominent part. Owing to the opinions expressed by the members of the Canadian Medical Association with regard to the paratyphoid infections, following the lead of Professor Starkey, it appears certain that more attention will be paid to them.

Antivaccination Movement in Montreal.

There have been some cases of small-pox in Montreal and neighbourhood during the past five or six weeks. Vaccination has not been strictly enforced in the Province of Quebec, and steps have been taken to render the operation obligatory in Montreal and its neighbourhood. These steps have met with strenuous opposition on the part of the antivaccinationists of Montreal, who base their objections on personal right.

Gift to McGill University.

Sir William Macdonald, of Montreal, has made another magnificient gift to McGill University, in presenting to it a large area of land at the back of what is known as the McGill Campus, adjoining the grounds of the Royal Victoria Hospital. The city of Montreal had made an unsuccessful offer for the property, in order to add it to Mount Royal Park. Sir William Macdonald's action has removed a fear that this land might be acquired by speculators for building purposes, and has, furthermore, ensured to McGill University space which is now needed, and which in course of time would have become absolutely necessary for expansion. It is stated that Sir William gave more than $1,000,000 (£200,000) for the property, which, with what he has already given to McGill University, makes up a total of about $5,500,000 (£1,100,000).

The Heat Wave in Canada.

An exceptional heat wave has swept over the United States and Canada. In Toronto, where temperature records have been kept for the past 57 years, the temperature was two degrees higher on July 3rd than had ever been known before. In the afternoon on that day the officially recorded temperature was over 103° F. in the shade. Many persons were prostrated by the heat in Toronto, and the death-rate of young children was greatly increased. In Montreal on July 3rd the highest officially recorded temperature was nearly 95°. Montreal has long had an unenviable reputation for an excessive infantile mortality, and the extreme heat of the week beginning July 2nd greatly intensified it. On July 2nd and 3rd no fewer than 146 children under five years of age died out of a population of 430,000 or thereabouts, an appallingly large proportion. During the same 48 hours 49 adults died, some of them certainly owing to weather conditions.

The Maritime Provinces Medical Association.

Owing to the fact that no matter where the annual meeting of the Maritime Provinces Medical Association takes place, whether in Nova Scotia, New Brunswick, or Prince Edward Island, the attendance is principally composed of Nova Scotia medical men, the President of the Association, in his opening address on July 5th, at Halifax, N.S., suggested that the Association should disband. The committee, on the President's motion, have therefore recommended that the Maritime Medical Association cease to exist after the present session, and that the funds in hand, after paying the expenses of this year's meeting, be divided equally between the Nova Scotia, New Brunswick, and Prince Edward Island medical societies. The result of this action is the better support of the Canadian Medical Association.

Free Advertising for Antituberculosis Society.

The Bill Posters' Association of Canada at its annual convention in Ottawa decided to grant the Anti-tuberculosis Society $25,000 (£5000) worth of advertising space throughout Canada. Consequently the posters of the society will be posted free in all cities and towns of Canada represented in the association.

August 7th.

Obituary.

SAMUEL JONES GEE, M.D. LOND., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

WE have already announced the regretted death of Dr. Samuel Jones Gee, which occurred at Keswick, where he was staying with his daughter, on August 3rd. He had gone to bed in his usual health, but was taken suddenly ill about 4 A.M. He was able to attract the attention of his daughter who slept in an adjoining room, but he died almost directly. Subsequent examination showed extensive atheromatous degeneration of the aorta and its valves. He was cremated by his own request at Golder's Hill on August 8th. There were present at the cremation Sir Thomas Barlow, representing the Royal College of Physicians of London, Sir William S. Church, Sir Richard Douglas Powell, Dr. Norman Moore, representing the staff of St. Bartholomew's Hospital, Mr. W. Bruce Clarke, and Mr. D'Arcy Power.

Dr. Gee was born on Sept. 13th, 1839. He was educated at Enfield, joining University College, London, in 1854. In 1857 he entered the medical school of University College Hospital. At the intermediate examination in medicine for the M.B. degree at London University Dr. Gee was bracketed with Dr. Charles Hilton Fagge, the well-known obstetrician, as university scholar and gold medalist in chemistry, and he also took honours in anatomy and physiology. This distinguished record was continued in 1861, when he was again bracketed with Dr. Fagge as university scholar and gold medalist in medicine in the final examination for M.B. In 1863 Dr. Gee became a Member of the Royal College of Surgeons of England, and in 1865 proceeded to the M.D. degree at London University, becoming also a Member of the Royal College of Physicians of London in the same year. In 1868 he was appointed assistant physician to St. Bartholomew's Hospital. When the skin department was opened at that hospital in 1869 Dr. Gee was appointed to the post, but in the following year he resigned it to become demonstrator of pathology and morbid anatomy. He was elected to the Fellowship of the Royal College of Physicians of London in that year. In 1871 he was appointed lecturer on pathological anatomy at his hospital. He became lecturer on medicine in 1878 and in the following year was appointed full physician and lecturer on clinical medicine, holding these appointments for 26 years—viz., until 1905—when he passed on to the consulting staff. He was Censor of the Royal College of Physicians from 1893 to 1897.

Dr. Gee was not a prolific writer; solidity rather than ephemeral attraction was his aim. He published two books. The first, on "Auscultation and Percussion," attained the dignity of its sixth edition in 1908. The second, "Medical Lectures and Aphorisms," reached its third edition in 1907. In 1871 Dr. Gee delivered the Goulstonian lectures at the Royal College of Physicans of London, in 1892 the Bradshaw lectures on Signs of Acute Peritoneal Diseases, and in 1899 the Lumleian lectures on Bronchitis, Pulmonary Emphysema, and Asthma. The last two were published in THE LANCET.

Mr. D'Arcy Power writes: "The death of Dr. Gee removes a remarkable personality from the medical profession. Naturally shy and reserved, with no advantages of rank or fortune, and without any marked social qualities, he raised himself almost to the top by the sheer force of intellect. His mind was clear and logical. It worked slowly, but the results at which he arrived were so correct that he was looked upon as a safe guide by all who asked his advice. He was well read in the writings of the Greek physicians of classical times, and although he would have been the first to disclaim any right to the title of a learned physician in the sense that Dr. Greenhill and Dr. Frank Payne were learned, there is little doubt that he moulded his teaching on classical lines. He tried, often very successfully, to put the largest amount of knowledge into the fewest possible words. Both the knowledge and the words were of his own gathering, and they were usually seasoned with a

sparkle of humour which was so subtle that the ordinary student lost it, though it was a source of lasting enjoyment to the university man and to the numerous medical practitioners who accompanied him round the wards. Amongst his colleagues he was held in high esteem for his courtesy, gravity, and the general soundness of his judgment, but he was essentially a lonely man; never very robust, he had no hobbies to bring him into familiar contact with his fellow men; happy in his domestic life and with his books, he preferred to remain at home when each day's work was done."

In 1870 Dr. Gee married Miss Sarah Cooper, a daughter of Mr. Emanuel Cooper, by whom he had two daughters, one of whom survives him. He died, as he would have wished, at a moment's notice, and he left directions that the urn containing his ashes should be placed between those of his wife and elder daughter.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Siegbert Marcuse, a Berlin practitioner who has played an important part in the organisation of professional opinion on the subject of contract practice. He had previously been awarded the Iron Cross when in charge of a field hospital before Metz. Dr. Walter Hesse of Dresden, a well-known hygienist and bacteriologist. Dr. Charpy, professor of anatomy in the Toulouse Medical Faculty. Dr. J. Elvin Courtney, lecturer on neurology in the Denver and Gross College of Medicine. Dr. P. Funaioli, professor of neurology in the Sienna Medical School.

Medical News.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—The Broderip scholarships have been awarded to E. L. P. Gould and H. Rowntree; the Lyell medal and scholarship to E. L. P. Gould; the Freeman scholarship to H. J. B. Heelas; the Hetley clinical prize to E. W. Hall; the Second Year's Exhibition to T. B. Paul; the Leopold Hudson prize to T. L. Hardy. Prizes have also been awarded as follows: Surgery, W. V. T. Stiles; practical surgery, T. L. Hardy; practical medicine, F. W. Browne; midwifery, A. O. Gray; practical midwifery, P. N. Button; anatomy, T. C. Kidner; physiology, T. C. Kidner; practical anatomy, T. C. Kidner; biology, R. P. S. Mason; embryology, S. W. M. Jones; pathology, O. C. Morphy; bacteriology, T. L. Hardy; forensic medicine, H. J. Shields; practical pharmacy, H. J. B. Hellas; organic chemistry, S. W. M. Jones; inorganic chemistry, A. Selby; physics, J. W. Edgar; histology, S. W. M. Jones; mental diseases, A. Juett; pharmacology, H. A. Lucas.

VISIT TO THE CLAYBURY ASYLUM BY FRENCH MEDICAL MEN.—By arrangement with Dr. F. W. Mott and Dr. Robert Jones, the members of the Twenty-first Annual Congress of Neurologists and Psychiatrists in France and French-speaking countries which met at Amiens last week visited the Claybury Asylum on August 9th and were received by Sir John MacDougall and Mr. T. Chapman, chairman of the Claybury Asylum. They inspected the pathological laboratory of the London County Asylums and made a tour of the wards and grounds of the asylum, accompanied by the officials. At luncheon they were welcomed by Mr. Chapman, who felicitously referred to the advantage of professional interchange of views in regard to the general treatment of the insane and to the friendly feeling obtaining between two great nations. Dr. Charron, the general secretary of the Congress, replied and expressed much satisfaction with the care and treatment of the mentally afflicted by English public authorities. After lunch several interesting cases were demonstrated and discussed, and opinions as to diagnosis, prognosis, and treatment were given by the visitors which should prove helpful. Cases of gross brain disease, of cerebral tumours, lateral sclerosis, anomalous cases of general paralysis, obscure nervous affections, and osteitis deformans associated with mental symptoms were discussed and views exchanged as to the diagnostic value of cyto-diagnosis, the Wassermann reaction, and "606," which had been used in Claybury for general paralysis. The visitors spent a very pleasant day, and such friendly international conferences, arranged informally, tend to help the medical interest in our asylums and must be of advantage to patients placed in these institutions.

A new patent medicine stamp has been issued by Somerset House, designed to make clear that the stamp implies no Government guarantee of any kind. This step has been rendered necessary by the action of certain manufacturers in making it appear that the stamp was a Government guarantee for the nature or value of the patent medicine.

THE NIGHTINGALE NURSING HOME AT DERBY.—Extension buildings to the Nightingale Nursing Home at Derby, costing £10,000, have been opened by the Duke of Devonshire, president of the Royal Derbyshire Nursing Association. The awards gained by members of the nursing staff were distributed at the same time by the Duchess of Devonshire.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—Entrance scholarships of the value of £60 for three or five years, and £30 for one year, will be awarded on the result of an examination to be held on Sept. 19th and following days. Forms of entry and all particulars can be obtained on application to the secretary, 8, Hunter-street, Brunswick-square, London, W.C., before Sept. 12th. The session will begin on Monday, Oct. 2nd, when Sir Henry Butlin, P.R.C.S., will deliver the inaugural address at 4 P.M. Mrs. Garrett Anderson, M.D., president of the school, will take the chair. The Fishmongers' Company have awarded an exhibition of the value of £60 for three years to J. E. Hart, a student of the school.

MEMORIAL TO THE LATE PROFESSOR CUNNINGHAM.—The bronze medallion to be erected in memory of the late Professor D. J. Cunningham has now arrived in the School of Physic, Trinity College, Dublin, and will be in its place before the winter session begins. It bears a profile portrait of Cunningham, and the words, "Daniel Johannes Cunningham, Defunctus Adhuc Loquitur." In addition a bronze medal has been struck, bearing a similar design on the obverse, and on the reverse a reproduction of the chimpanzee's brain prepared by Cunningham. The medal will be for competition in the anatomy class of Dublin University each year. The memorials established in Edinburgh are of similar nature. The medallion and medal are designed by Mr. Oliver Sheppard, an Irish sculptor, whose designs for the Bennett and Banks medals received the highest praise some years ago.

THE DISEASES OF ANIMALS ACTS.—The annual reports of proceedings under the Diseases of Animals Acts for 1910 have been issued. The chief veterinary officer, Mr. Stewart Stockman, deals with foot and mouth disease, swine fever, glanders, anthrax, and sheep scab. The laboratory report contains a note on A Trypanosome of British Cattle, which, however, it is not considered probable, gives rise of itself to any serious illness among domesticated animals; also a note on Bracken Poisoning in cattle. Warbles and ticks are also dealt with. The report of the assistant secretary (animals division), Mr. A. W. Anstruther, discusses the geographical distribution of foot and mouth disease, swine fever, sheep scab, glanders and farcy, anthrax, and the measures taken in regard thereto; also the exportation and shipment of horses and regulations as to dogs, and matters relating to the movement of domestic animals generally.

NAIRN TOWN AND COUNTY HOSPITAL.—The medical report of Dr. B. Cruickshank, submitted to the annual general meeting of the Nairn Town and County Hospital on August 3rd, stated that at the date of the last report 9 cases remained in the hospital and 129 were admitted during the year, making 138 cases under treatment. Of these, 88 were cured, 29 relieved, 8 died, and 12 remain in the hospital. Sixty-two cases might be classified as medical and 76 as surgical. Twenty-two surgical operations were performed, and 33 cases were attended as out-patients for dressing, &c. The average number of days in hospital for each patient was 25. The secretary and treasurer submitted his report, which showed that the income amounted to £605 13*s.* 4½*d.*, as against £607 18*s.* 0½*d.* for the previous year. The expenditure was £654 11*s.* 0½*d.*, as against £622 4*s.* 1*d.* The increase in expenditure was due to the salary of the increased staff, expenses connected with the appointment of the new

matron, and repairs to the hospital. Mr. W. Wilton Johns of Nairn was appointed on the medical staff of the hospital.

THE INVESTIGATION OF PELLAGRA.—A Second Field Commission, consisting of Dr. Louis Sambon and Dr. Albert J. Chalmers, has left London for the study of the epidemiology and etiology of pellagra in Hungary, the Austrian Tyrol, Spain, and Southern France. Professor Haase of Memphis, Tenn., U.S.A., Dr. Cole of Atalanta, Ga., U.S.A., and Dr. Martinez of Yucatan, Central America, will join the Commission *en route*. The fullest facilities for the investigation have been granted by the Governments of Austria, Hungary, and Spain. The expense will be generously borne by Mr. H. S. Wellcome, whose name is already honourably identified with the support of physiological research in its relation to the advancement of medical science.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

University of Wales Bill.

THE University of Wales No. 2 Bill has passed through a Standing Committee of the House of Commons and been ordered to be reported to the House. This is the Bill which Sir D. BRYNMOR JONES, with the support of Welsh Members in all quarters of the House, introduced for the purpose of making the medical degrees of the University of Wales registrable under the Medical Acts, and also of giving to the University the right to send a representative to the General Medical Council.

The Nutritive Value of Bread.

The report which Dr. J. M. HAMILL has made to the Local Government Board on the nutritive value of bread made from different varieties of wheat flour has been laid on the table of the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 9TH.

Importation of Chinese Pork.

Mr. FELL asked the President of the Local Government Board whether he had received the report from his representatives in China on the conditions under which the Chinese pork was produced and packed before shipment to this country.—Mr. BURNS replied: Dr. Farrar has recently returned from China, and his report is in preparation.

THURSDAY, AUGUST 10TH.

Experiments on Living Animals.

Mr. CHANCELLOR asked the Secretary of State for the Home Department how many visits were paid during 1910 to laboratories registered for experiments on living animals by Dr. Thane and Sir James Russell respectively; and how many of the 4939 experiments mentioned in Table IV. A, and how many of the 90,753 experiments mentioned in Table IV. B, were actually witnessed by Dr. Thane and Sir James Russell respectively.—Mr. CHURCHILL answered: During 1910 Dr. Thane paid 153 visits to registered premises and Sir James Russell 141. In addition to these 15 visits were paid by Dr. Whitaker, who was appointed as temporary inspector during the absence of Sir James Russell through illness. Of the experiments mentioned in Table IV. A of the return, Dr. Thane witnessed 30 and Sir James Russell 20. Of the experiments in Table IV. B, Dr. Thane saw 20 and Sir James Russell 59.

The Vaccination of Soldiers' Children.

Mr. W. THORNE asked the Under Secretary of State for War whether he would draw the attention of the officials of the Army Medical Department to the immunity from small-pox enjoyed by children in England and Wales who had been legally exempted from vaccination under the Vaccination Acts, 1898 and 1907, and in Scotland under the Act of 1907; and whether he would issue a new regulation to such officials instructing them to respect the conscientious objections of soldiers in barracks in respect to the vaccination of their children.—Colonel SEELEY replied: As regards the first part of the question, I am not aware of any official statistics on the subject. As regards the second part of the question, the reply is in the negative.

MONDAY, AUGUST 14TH.

National Insurance and Syphilis.

Sir HENRY KIMBER asked the Chancellor of the Exchequer whether, under Section 13, Subsection 4, of the National Insurance Bill, an approved society would be allowed to refuse sickness benefit to insured persons suffering from tertiary syphilis which appeared 20 or even 40 years after infection—e.g., a gumma of cheek appearing after a lapse of 40 years, and tabes or locomotor ataxy appearing after a lapse of 20 years.—Mr. LLOYD GEORGE replied: Matters of this kind will be dealt with in the rules of the society, which will, of course, be framed by the society with the consent of its members, and will have to be approved by the Insurance Commissioners.

Impending Vacancy in the Scotch Prison Commission.

Sir HENRY CRAIK asked the Lord Advocate whether, in view of the impending vacancy amongst the Prison Commissioners in Scotland, steps would be taken to carry into effect the recommendations of various committees, including the Scottish Departmental Committee in 1902, that there should be a medical member on the Board of the Prison Commissioners.—Mr. URE replied: It would be premature to make any statement on the subject. I am aware of the recommendation referred to by the honourable Member, which was made by the Departmental Committee on Scottish Prisons in 1900.

Dairies and Milkshops Orders in Scotland.

Mr. WATT asked the Lord Advocate whether there was now any burghal local authority in Scotland which had not yet appointed one or more veterinary surgeons for the purpose of the Public Health (Scotland) Act, 1897, and the Dairies, Cowsheds, and Milkshops Orders; and, if not, would he say when a veterinary surgeon would be appointed to the staff of the Local Government Board, so that a uniform system and standard of meat inspection might exist throughout Scotland.—Mr. URE wrote in reply: There is not any burghal local authority in Scotland which has not yet appointed one or more veterinary surgeons for the purpose of the Act and Orders referred to by my honourable friend. It is not proposed meantime to appoint a veterinary surgeon to the staff of the Local Government Board for Scotland.

TUESDAY, AUGUST 15TH.

Sanitary Commissioner to the Indian Government.

Mr. MACPHERSON asked the Under Secretary of State for India whether the office of Sanitary Commissioner to the Government of India was established on the recommendation of the Plague Commission; whether that office was now vacant; and whether, in view of the prevalence of plague, cholera, malaria, and small-pox, he would see that this office was not abolished and that an appointment was made to it at once.—Mr. MONTAGU said in reply: The vacancy in the office of Sanitary Commissioner with the Government of India caused by the death of the late incumbent has not yet been filled, and the duties of the post are at present discharged by the Director-General of the Indian Medical Department. The Government of India are disposed to think that the creation of a separate Sanitary Commissioner in 1904 has not fulfilled expectations, and are inclined to revert to the arrangement previously existing. The Secretary of State must reserve his decision until the full statement of the views which the Government of India have promised is before him. The Sanitary Commissioner is merely an advising officer to the Government of India. The responsibility for sanitation in the several provinces rests with the local governments. The office was not created in 1904 on the recommendation of the Plague Commission of 1898. The Plague Commission's scheme was not accepted.

Local Health Committees and Medical Benefit.

Colonel RAWSON asked the Chancellor of the Exchequer to state how present members of Friendly Societies who were over 65, or who were in receipt of medical benefit from their society, and did not become insured persons under the National Insurance Bill, would be able to continue to receive medical attendance after the Bill had passed, seeing that the arrangements with the doctors would now be made by the Health Committees and not by the societies on whom the liability for their sick members rested.—Mr. LLOYD GEORGE wrote in reply: The Local Health Committees will only intervene in the administration of medical benefit so far as persons insured under the Bill are concerned. Those who are insured, but not under the Bill, in societies which become approved societies will not be affected.

Cancer amongst Pitch-workers.

Mr. PERKINS asked the Secretary of State for the Home Department whether, in view of the fact that the spread of cancer among workers with pitch was attributed to the anthracine contained in tar and pitch derived from gas-works, in that tar and pitch derived from blast furnaces was free from anthracine, he would take this fact into consideration in the new Home Office regulations.—Mr. CHURCHILL furnished the following written reply: The fact that blast-furnace pitch is much less liable to give rise to cancer is already recognised in the draft regulations, which have been issued by the Home Office, for the manufacture of patent fuel (briquettes) with the addition of pitch. Factories and workshops in which no pitch other than blast-furnace pitch is used are specifically exempted from the regulations. It is not, however, certain that anthracine is the constituent of ordinary pitch to which the prevalence of cancer in the industry is due.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND COMPANY, LIMITED, Ruskin House, 44-45, Rathbone-place, London, W.

Voice and its Natural Development. By Herbert Jennings, Author of "The Preventive and Remedial Treatment of Stammering," &c. Price 3*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Album of Photographs issued by the South Indian Branch of the British Medical Association. Price 10*s.* 6*d.* net.

The Essentials of Food. By Donald Stewart, M.D. Price 3*s.* 6*d.* net.

The Mental Effects of a Child's Environment. By T. S. Clouston, M.D., LL.D., F.R.C.P.E. (Reprinted from "The Child," May and June, 1911.) Price 6*d.*

CHURCHILL, J. AND A., London.

Dental Materia Medica, Pharmacology, and Therapeutics. By Charles W. Glassington, M.R.C.S., L.D.S. Edin. Second edition. Price 6*s.* net.

DENTAL RECORD, THE, Office of, Alston House, Newman-street, London, W.

The Prevention of Dental Caries. By J. Sim Wallace, D.Sc., M.D., L.D.S., Hon. Dental Surgeon to the West-End Hospital for Nervous Diseases. Price 1*s.* 6*d.* net.

The Prevention of Dental Caries. By Stanley Colyer, M.D. Lond., M.R.C.P. Price 6*d.* net.

FISCHER, VICTOR, Budapest.

Surgical Stitching Instrument for the Suture of the Stomach and Intestines according to Dr. Hültl, Principal of the IV. Surgical Department in the Metropolitan St. Stephen's Hospital, Budapest. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BUTLER, THOMAS HARRISON, M.D. Oxon., has been appointed Oculist to the Coventry School Clinic.

EMRYS-JONES, FRANKLIN, L.M.S.S.A., has been appointed X Ray Expert to the Coventry School Clinic.

HALL-EDWARDS, JOHN, L.R.C.P. Edin., has been appointed X Ray Expert to the Coventry School Clinic.

HALPIN, R. EDGAR, L.D.S. Glasg., has been appointed Dentist to the Coventry School Clinic.

HAWKS, F. S., L.M.S.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wigton District of the county of Cumberland.

LAWRIE, D., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Glastonbury District of the county of Somerset.

MACLENNAN, ALEX., M.B., C.M. Glasg., has been appointed Consulting Surgeon to the East Coast Railway Company for the Glasgow District.

MANNING, HERBERT CAMPBELL, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant School Medical Officer for the County of Dorset.

MARTIN, MARY EDITH, L.R.C.P. & S. Edin., L.F.P.S. Glasg., L.S.A., has been appointed Assistant Medical Officer at Bailbrook House, Batheaston, Bath.

MELROSE, M. M., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Miller General Hospital for South-East London, Greenwich.

ROBERTSON, WILLIAM, M.B., Ch.B. Glasg., has been appointed District Medical Officer by the Stroud (Gloucestershire) Board of Guardians.

ROBINSON, JOHN ELLIOTT, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed School Medical Officer for the County of Dorset.

SYMONS, WILLIAM HENRY, M.D Brux., M.R.C.S., L.R.C.P., L.S.A., D.P.H., has been reappointed Medical Officer of Health of Bath.

THOMAS, FRANK LESLIE, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Pathologist to the North Devon Infirmary, Barnstaple.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHLEM HOSPITAL.—Locum Tenens as House Physician. Salary at rate of 4 guineas a week, with apartments, board, and washing.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with board, lodging, and washing.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL,—Junior House Surgeon. Salary £70, with board and residence.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with apartments, board, and laundry.

BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £60, with board, residence, &c.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments (not board).

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at rate of £80 for first six months and £100 for second six months, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Also House Surgeon. Salary in each case £80 per annum, with board, washing, and residence.

CROYDON GENERAL HOSPITAL.—Senior and Junior House Surgeons. Salaries £105 and £60 respectively, with board, laundry, and residence.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

ESSEX EDUCATION COMMITTEE, Chelmsford.—Medical Inspector (female) for six months. Salary £125, and necessary travelling expenses.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HALIFAX, ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £120, with board, &c.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.

LIVERPOOL, UNIVERSITY OF.—Chair of Pathology. Salary not less than £600 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Salary £100 per annum. Also Resident Medical Officer for six months. Salary £40.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with apartments, board, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

ORKNEY, PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £71 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

PRESCOT UNION WORKHOUSE AND INFIRMARY, Whiston.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Salary £60 per annum, with board, residence, and washing.

QUEEN CHARLOTTE'S LYING IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—House Surgeon. Salary £110 per annum, with board and residence.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £125 per annum.

ST. PANCRAS (SOUTH) INFIRMARY AND WORKHOUSE.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer. Salary at rate of £135 per annum with residential allowances.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £60, with board, lodging, and washing.

SHEFFIELD, UNIVERSITY OF.—Junior Demonstrator in Pathology. Salary £150 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician for six months. Salary £80 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY.—Senior House Surgeon. Salary £120 per annum, with board, washing, and apartments.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer, unmarried. Salary £150 per annum and all found.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Act at Montgomery, in the county of Montgomery.

Births, Marriages, and Deaths.

BIRTHS.

PAIN.—On August 13th, at Montagu House, Leatherhead, the wife of Basil H. Pain, M.B., M.R.C.S., of a daughter.

WYSARD.—On August 6th, at Ellerker-gardens, Richmond Hill, the wife of Staff-Surgeon A. T. Wysard, R.N. (retired), of San Paulo, Brazil, of a daughter.

DEATHS.

ARCHIBALD.—On June 23rd, 1911, at East Farleigh, Kent, suddenly, of heart failure, W. F. Archibald, M.B., Ch.B. Edin., Surgeon, Royal Navy, aged 28.

EVANS.—On August 10th, John Evans, M.R.C.S., L.D.S., aged 82.

SCANLAN.—On August 12th, at Kerswell, Broadclyst, Exeter, Lieutenant-Colonel James Scanlan, retired, Army Medical Staff, aged 64.

YOUNG.—On August 12th, at Atherstone, Charles Albert Young, M.R.C.S., L.R.C.P., aged 46.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

BASEMENTS AND THE LAW.

THE Housing and Town Planning Act, 1909, now regulates the sanitary conditions under which the use of underground rooms for sleeping purposes may be permitted by local authorities. It deals in terms which are explicit and reasonable with a topic not altogether new, and which is of considerable importance in the eyes of those who desire to see the provision of wholesome houses for the people encouraged, so far as this may be done by forbidding the existence of such as are flagrantly and obviously insanitary. In these circumstances a letter which appeared in the *Times* of August 9th, and which, by the way, was signed "A Doctor's Daughter," demands some comment owing to the extraordinary inaccuracy of the main statement of the law contained in it, rather than on account of deductions based upon a mutilated excerpt from the seventeenth section of the Act referred to. This extract was quoted at the end of the letter, and we shall remind our readers of the contents of the body of that document if we mention that it commenced by referring to the Englishman's home as having ceased to be his castle, and proceeded to say that "the Metropolitan Borough (of Marylebone) demands that no one may sleep in a basement (however good that basement may be apparently) if the surface of the floor is more than 3 feet below the surface of the road." The writer followed this surprising summary of the law with allusions to the practice of assigning the basement to menservants as their sleeping quarters in large houses in London, and declared that as a consequence of the legislation described "thousands of servants, particularly male servants, will be thrown out of employment, or people will have to do with fewer domestics because they will not have room to house them. The very people this law is made to help it will mulct of a livelihood altogether." A later passage in the same letter declared: "Even the lady and gentleman may not sleep downstairs nowadays in their own houses, or they might do so to allow the 'lady's lady' and the 'gentleman's gentleman' to occupy their rooms." Other paragraphs assigned reasons for the practice of menservants sleeping in basements, contrasted servants in "the sixties" with those of the present day, and predicted an increase in the number of houses to let in London. Then the writer proceeded to supply the quotation which gave a clue to the source of the prohibition which she had in her mind, the opening paragraph of her letter having left her readers in doubt as to whether her apprehensions had been roused by an Act of Parliament or by a new by-law of the Marylebone borough council. The portion which she cited from Subsection 7 of the section mentioned above was as follows. How she could have got so far without going farther we, of course, cannot say, so will charitably suggest that a friend supplied her with an extract which she did not trouble to verify. Subsection 7: "A room habitually used as a sleeping-place, the surface of the floor of which is more than 3 ft. below the surface of the part of the street adjoining, or nearest the room, shall, for the purposes of this section, be deemed to be a dwelling-house so dangerous or injurious to health as to be unfit for human habitation." Taken as it stands, this would be obviously unreasonable, and would fully justify the recommendation of "A Doctor's Daughter" that "it would be better to inspect basement sleeping accommodation and suggest improvements where necessary, but the subsection does not end there. After a comma, not a full-stop, it continues: "if the room either (*a*) is not on an average at least seven feet in height from floor to ceiling; or (*b*) does not comply with such regulations as the local authority, with the consent of the Local Government Board, may prescribe for securing the proper ventilation and lighting of such rooms, and the protection thereof against dampness, effluvia, or exhalation"; and it further provides that if the local authority fail to make such regulations the Board will make them in its place. Probably few persons in any way interested in house property in London were greatly disturbed by the letter referred to, but as at this time of the year some may read an isolated copy of a newspaper and fail to notice a contradiction or correction, we feel justified in referring to the matter in detail. Modern sanitary legislation may disturb individual owners of property and demand from them expenditure which they may resent, but in instances such as that under discussion the effect obtained is only to diminish profits made by the letting of housing accommodation wholly unfitted for its purpose, and local authorities are to be commended when they enforce the law with vigilance and without fear or favour. Their regulations as a rule are such as their medical officers of health recommend to them, and they are framed under the supervision of the Local Government Board. The regulations in force in Marylebone are before us, and probably correspond with those of many other boroughs in their provisions, from whatever source they may have been derived. In any case, they are obviously directed towards lessening the number of underground dwellings approximating to cellars, or to their use as sleeping places, rather than to interfering with accommodation provided for their male servants by the inhabitants of Portland-place and Harley-street, to whom reference was especially made by the writer of the letter upon which we have commented, a letter which certainly illustrated the errors into which "a little knowledge" may lead the unwary.

A NEW MANUSCRIPT OF ALEXANDER OF TRALLES.

IN the still not entirely searched Escorial Library in Spain there is an eleventh-century parchment Codex in which, after folio 141, are preserved a list of medical prescriptions for wounds which some physician must have copied from Books 13, 14, and 15 of Aetius's "Tatrabiblon." The manuscript bears a revision of the fourteenth century, and the reviser notes twice in the margin that the manuscript he used for the purpose bore the name of Alexander. The author signified was almost certainly Alexander of Tralles, because he stated he had borrowed from Aetius, and therefore the revised Escorial text presents to us Alexander's version of three books of Aetius. Another manuscript in the same library states, as had been suspected previously, that Alexander of Tralles was a Christian.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for August and September, 1911:—

June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
August 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
" 15th–21st (Dublin).—Royal Institute of Public Health.
" 21st–23rd (Larvik).—Fourteenth Norwegian Physicians Congress.
" 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
" 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
" 30th–Sept. 6th (Portsmouth).—British Association.
" 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
" 5th–7th (Philadelphia).—American Electro-therapeutic Association.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Obstructive Jaundice.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. B. Harman: Iritis.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Dilated Sigmoid.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.

TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.

WEDNESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Hutchison: Abdominal Disease.

THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.

FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 12 noon by Steward's Instruments.)

THE LANCET Office, August 16th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 10	30·10	N.E.	...	124	81	65	63	70	Fine
,, 11	30·10	N.E.	...	119	86	63	62	65	Overcast
,, 12	30·00	N.E.	...	120	87	81	65	69	Fine
,, 13	30·12	E.	...	132	91	63	65	70	Fine
,, 14	30·17	E.	...	131	89	65	66	71	Fine
,, 15	30·15	N.E.	...	120	77	60	59	63	Cloudy
,, 16	30·15	N.E.	...	118	75	57	55	60	Cloudy

The following journals, magazines, &c., have been received:—South African Medical Record, Journal of the East Africa and Uganda Natural History Society, L'Hygiène, Detroit Medical Journal, Archiv für Experimentelle Pathologie und Pharmakologie, Annales des Maladies des Organes Génito-Urinaires, Revue de Chirurgie, Revue de Médecine, Indian Medical Journal, Canadian Practitioner and Review, Biometrika, Middlesex Hospital Journal, American Medicine, American Journal of Surgery, St. Louis Medical Review, Ophthalmology, Interstate Medical Journal, American Journal of Obstetrics.

Communications, Letters, &c., have been received from—

A.—Ancoats Hospital, Manchester, Secretary of; Mr. J. A. Anzell, New York; Mr. E. Anastassoff, Sophia; Apothecaries Hall of Ireland, Dublin, Registrar of; The Automobile Association, Lond.; Messrs. Adlard and Son, Lond.

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C.—Cumberland Infirmary, Carlisle, Secretary of; Mr. F. G. Carsten, Huguenot, S.A.; Dr. E. J. Cooke, Sheffield; Chitaldroog, India, District Medical and Sanitary Officer of; Messrs. Cutting and Underwood, Lond.; Dr. J. M. Chisholm, Woolton; Dr. R. T. Cooke, Sutton; Mr. M. R. Charlton, Montreal; Dr. Thomas Colvin, Glasgow; Mr. John Currie, Edinburgh.

D.—Dean-Meyer Co., Berlin; P. E. Derrick Advertising Agency, Lond.; Messrs. A. De St. Dalmas and Co., Leicester; Messrs. W. Dawson and Sons, Lond.; Mr. Alexander Don, Dundee.

E.—Eighth International Congress of Applied Chemistry, New York, Hon. President of.

F.—Dr. Fieldhall, Lond.; F. R. W.; Forward Publicity Co., Birmingham; Lieutenant D. C. L. Fitzwilliams, R.A.M.C., Frimley; Colonel R. H. Firth, R.A.M.C., Simla; Dr. David Forsyth, Lond.; Mr. Gustav Fischer, Jena; Mr. F. E. Fremantle, Lond.

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I.—Ingham Infirmary, South Shields, Secretary of; Income-Tax Adjustment Agency, Lond., Secretary of; Islington, Medical Officer of Health of.

J.—Messrs. J. Jameson and Son, Dublin; Dr. Hugh Jones, Liverpool; Dr. Robert Jones, Woodford Bridge; *Journal of Laryngology, Rhinology, and Otology*, Lond.

K.—Mr. C. Kleyer, Karlsruhe; Kent and Canterbury Hospital, Secretary of; Mr. F. Kidd, Lond.; Dr. Knight, Edinburgh; Messrs. H. G. Kingham and Co., Dorking; Messrs. G. Keener and Co., Lond.; Mr. Joseph Knight, Broad Oak; Messrs. P. S. King and Son, Lond.; Mr. R. Lawford Knaggs, Leeds.

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Y.—Mr. Macleod Yearsley, Lond.

Z.—Messrs. C. Zimmermann and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. T. L. Ashforth, Doncaster; Mr. G. H. Adam, West Malling.

B.—Mr. T. Buxton, Fazeley; Dr. H. P. Byers, Melita, Canada; Mr. H. J. Bromley, Lond.

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M.—Dr. D. D. McHenry, Oklahoma City, U.S.A.; Messrs. Z. P. Maruya and Co., Tokyo; Messrs. J. Menzies and Co., Edinburgh; M.D., Wimbledon.

N.—*Newcastle Daily Chronicle*, Manager of.

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THE LANCET.

LONDON: SATURDAY, AUGUST 26, 1911.

An Address to Students.

IN this, our annual Students' Number of THE LANCET, there will be found as usual an epitome of the educational course which the medical student has to follow if he would terminate his labours by having his name placed on the roll of the General Medical Council. Full information is given as to the various universities and medical schools through whose instrumentality he can receive the training and the degrees or diplomas which are necessary to that end. We are glad to think that the audience whom on this occasion we address has already made a personal choice of the calling of medicine, for in the existing circumstances a great responsibility lies upon anyone who should decide to send a young man or a young woman into the medical profession as a career. We are addressing those who have already started upon their professional life and not those who need instigation as to a momentous decision. In a few weeks several hundreds of students will be added to this number, and will enter at different centres upon the long course of study which will lead, if they display the necessary industry and resolution, to their becoming qualified for the practice of medicine. The exact number cannot yet be guessed at, but it seems probable that it will not be so high an aggregate as in some previous years, and certainly will not promise any excess of medical men to meet the growing needs of the community. During the last 20 years the average number of medical men annually admitted to the Medical Register has decreased in a highly significant manner. The number has fallen from an average of 1462 during the period 1891-1895 to an average of 1152 for 1906-1910, and in the main the admissions to the Register bear a proportion to the number of students who commence a professional career. In England the number of medical students has lately decreased in the manner signified by the figures of the qualified men, the same position not having occurred in any marked manner at any Irish or Scottish medical centre. Although there are possibilities that this growing unpopularity with the class from which in England the recruits to medicine used to be drawn may be undergoing some modifications, it seems unlikely, having regard to the full exposure of the hardships of that life which has recently taken place in the House of Commons in connexion with the National Insurance Bill, that the figures of the new students for 1911 will present a better appearance than those of the immediately preceding sessions. The significance of this is considerable, for it leads to the obvious deduction that those who are choosing the profession of medicine are not entering an overcrowded class. The population of Great Britain and Ireland since 1900 has increased by about 4,000,000, and during these years the numbers of the medical profession on the roll have not increased in any proportional manner. The number of medical men in London is just 115 more than it was ten years ago, and the only increase worth noting among medical men is the addition of 1650 during the decade to the number that have joined the Services or that practise abroad. It is our own belief that the assertions that the medical profession is overcrowded have been made frequently, and possibly are still being made, without a sufficient knowledge of the facts. Badly distributed the *personnel* of the medical profession may have been, and still may be. There are too many men working in the same localities and on the same lines, but there are too few practitioners in certain districts, naturally in hose where the conditions of professional practice have hitherto been terribly unremunerative. Whatever accuracy there may have been in times gone by in the statement that the public in this country was over-supplied with medical men, few people will maintain that this position still exists, though the faulty distribution of the profession remains. To this extent, then, we may congratulate the new recruits to our ranks; they are coming where there is room for them. And we believe also that they are coming where the public desires good service, a position which is practically a new one in this country. The functions of the medical profession wax more responsible daily, and the assistance which medical men are called upon to render to the body politic is becoming more general, as the need of medical service is growing more widely recognised by the public. All this means that the training of medical men as a class will receive close scrutiny in the near future, and the student should understand, from the moment he has chosen medicine as his career, that his life is going to be a strenuous one.

It would be particularly interesting this year to know what are the circumstances which have dictated the selection of medicine as a career to those who are now entering upon it. The choice of a profession is frequently made by a boy's father, and if he is a medical man with a good practice it has hitherto seemed only natural that he should desire his son to follow in his footsteps. It is not unreasonable, also, to assume that there is often a hereditary aptitude for medical practice, and a hereditary willingness to assume its responsibilities. For these reasons until lately a medical man in good practice almost as a matter of course brought up one of his sons to succeed him in his practice, and these hereditary followers of medicine were some of the best recruits which the profession received. We very much doubt whether this proportion of sons of medical men is now being maintained. For 20 years, during which the average number of medical students has gone down, the medical profession, especially in regard to general practice, has had to undergo many drawbacks and even hardships, and it is probable that the number of fathers, who have considered during this 20 years that in placing their children in the medical profession they were giving them the best opportunity which lay in their power of leading a useful life and securing a competence, has considerably decreased. General practitioners have seen in the many-sided development of the profession of medicine changes which necessarily have greatly affected their pecuniary returns, while they have

shared in the rapidly growing expenses of daily life without in many instances being able to demand correspondingly increased fees from their clients. The decision, the very right decision, of the General Medical Council not to permit the use of unqualified assistants threw a heavy burden upon many practitioners, especially upon those who were most oppressed by the unwholesome growth of contract practice. There can be no doubt that a large number of the old-fashioned unqualified assistants were unduly employed; they were placed in positions of responsibility for which they had not received adequate training, and they gave to the public services which were not the services for which the public believed itself to be paying. While, however, the employment of unqualified assistants was abused in this manner, and, alas, in many places, the fact remains that a certain proportion of these assistants were quite properly used, while their remuneration was necessarily at a lower figure than that of assistants who, being duly qualified, had spent a large sum of money upon their medical education. The unfair growth of contract practice was directly responsible for the abuse of unqualified assistants. The public in larger numbers, and (unfortunately) in increasingly substantial positions, began to avail itself of the contract terms which had been originally framed by the medical profession with extreme moderation, being in fact a direct outcome of the organised charity which the profession has always extended towards the public. Consequently many general practitioners found themselves confronted with the situation that part of their income was being paid to them in return for an enormous amount of work under contract that could never be remunerative—more, that could only just be made to pay when the duties were performed in a perfunctory manner and at the least possible cost. Then arose the extremely dangerous position, for medicine and for the public alike, under which thousands of persons were seen in crowded surgeries in a mechanical way, and in an incredibly short space of time, for capitation fees rarely attaining to 5*s.* a year and often dropping to ½*d.* a week. Many medical men manfully struggled in these appalling conditions to do scientific work, but some, disheartened by the conditions, discharged their responsibilities in a manner corresponding to their remuneration—they provided the kind of thing for which they were being paid. In practice of this sort the unqualified assistant was often as good a man as his principal, and when the services of persons whose names were not on the Register became illegal the troubles of the general practitioner, severe already, became accentuated, for he was not able to obtain from the various medical aid associations into whose grip he had fallen any increase of salary to compensate him for an increased outlay in the matter of professional assistance. Representations made to the medical aid associations, pointing out the abuses under which their medical officers suffered, were responded to in many cases by the introduction into the practitioners' districts of salaried medical officers to do the work of the medical aid associations, and at once the practitioners saw that, not only were their professional profits seriously diminished by the fact that persons well able to pay reasonable fees took advantage of terms of contract practice which had never been intended for them, but a grave uncertainty of tenure was introduced into professional life. A medical man could no longer bring up his son to succeed to his practice with any security, for he could no longer rely upon having a practice to which his son might succeed. In the meantime the fees for vaccination and the receipts from midwifery were decreasing for obvious reasons, while the ordinary therapeutic routine of treatment was growing more costly to him who had to supply the drugs and the dressings. All these things, acting and interacting, so altered the pecuniary position of many medical men during the last 20 years that those who have felt their full force have refrained from sending their sons to meet the same experiences. Still the supply of medical men has been kept up. The great promises of the medical life have proved sufficiently attractive to ensure able collaborators. And here we must recall the fact, often though it has been mentioned, that more than any other unit of society the members of the medical profession have inside the fence of their calling a choice of vastly varying careers. The consultant and specialist, the general practitioner, the State official, the officer, the pure pathologist—all are within our fold and have a common professional aim and code, but they lead lives that vary in every detail. Hence the medical profession has so wide an appeal that, despite the dark days through which it has recently been passing, fresh candidates for its trials and triumphs have not been wanting. We congratulate our new adjuvants upon deciding to pursue a calling that promises to all a life of the highest utility, and to some the purest possible delights through knowledge acquired and difficulties surmounted.

The medical profession is entering now upon a most critical phase. We need not here go into any details with regard to the National Insurance Bill, but we may take it for granted that every student has some conception of the position for medicine in the future opened up by that vast measure. Contract practice, under which the evils that have just been enumerated have sprung into such riotous activity, will be extended by the new statute until the relations of the medical profession with about one-third of the populace are affected. The conditions of general practice will probably be profoundly modified in the near future, and it is unlikely that this will be effected without considerable hardship to many men now in practice, though there is promise that other men, and succeeding generations of practitioners, will find their lives altered for the better in many directions; and certainly some of the graver hardships and injustices should disappear. The student now entering into our ranks ought to appreciate these facts from the beginning. As yet he is only in the rear of the fight, while those in the van may suffer to secure a victory possibly in many instances rather for him than for themselves. Some six or seven years hence those who have just joined our ranks, who should by that time have qualified for a place upon the Register, may find the conditions of medical practice satisfactory where at the present moment they are hard to bear; they must remember that they owe a debt of gratitude to those who have brought these things to pass, and they must remember also to learn to play the difficult part that will be required of them. Upon them will

devolve the duty of proving to the public that the medical work of the country under altered conditions can be efficiently performed; on them will fall the troubles of conflict if further modification of those conditions be found necessary. And in no way can they better fit themselves for this outlook than by cultivating a broad view, so that they may appreciate the public as well as the professional side of every social and moral question. In the immediate future a large proportion of the general practice of this country will be conducted in relation to certain bodies set up by the National Insurance Bill and mainly formed of laymen. Provision is made on these bodies—the Health Committees—for medical men, and the presence at the meetings of the county or borough medical officers of health will ensure a right sanitary view being made clear; but the voting power will be with the laity. The medical men must be able to follow, and follow sympathetically, the arguments advanced for the public good; in this way only will they obtain the hearing for the medical side which is essential for the public safety. The high aims of our calling and the enormous amount of practical good that we can do will influence a public whose standards of education are improving, but that the best united work may be done mutual comprehension is needed. The details of medicine must necessarily be hard to explain to the layman, so that it is of the greatest importance that the medical profession should earn the public confidence by manifest sincerity and reasonableness, for in this way his counsels will be accepted. No estimate of professional dignity can be too high, but maintenance of that dignity is made perfectly easy by the proof of good motives and efficient training.

THE STUDENT'S GUIDE.

SESSION 1911-1912.

A PREFATORY STATEMENT.

THE quantity of the subjects which fall necessarily within the scope of our Educational Number has now become very large, and it may be as well, as on previous occasions, to explain the scheme upon which the following guide to a medical career in this country is constructed.

The General Council of Medical Education and Registration, conveniently known as the General Medical Council, is the controlling authority, under the Privy Council, of the medical education of the land. Under the provisions of the Medical Acts various universities and corporations are recognised as being examining bodies whose degrees or diplomas entitle to medical registration, and it is among the duties of the General Medical Council to keep the official register and to ensure by periodical visitations that the tests of the various examining bodies are maintained at a due standard. We begin by describing the powers of the General Medical Council, and go on to give in detail the regulations of the various examining bodies.

But the student must be taught as well as examined, and the systems under which he can obtain instruction do not conform to one pattern. The curriculum of the medical student falls into two parts, the preliminary subjects and the professional subjects, and the two cannot be sharply divided. The extent to which they are allowed to overlap under different schemes of education varies a good deal, while the extent to which they ought to overlap is a perennial subject of debate. The important preliminary subjects are chemistry, pharmacology, physics, biology, anatomy, and physiology, and they are taught in the school proper; the professional subjects, medicine, surgery, and obstetric medicine—under which headings all forms of specialism are included—must be learned in the wards of a hospital. All schemes of medical education require a school and a hospital, but there their uniformity ends.

The first point on which the medical student has to make up his mind is whether he desires a medical degree which will give him the definite title of Doctor or Bachelor of Medicine (coupled in many cases with that of Bachelor of Surgery), or whether he will be content with a diploma certifying him to be a Member or Licentiate of one or other of the great medical corporations and as such entitled to be registered as a medical practitioner. If he desires a degree he must matriculate at a university and go through the course of studies required by the regulations of its medical faculty, and it is well that he should bear this in mind from the outset, for many diplomates, desiring later to becoming medical graduates, have been debarred from doing so through having neglected to pass a university matriculation examination at a time when they were freshly versed in their preliminary "arts" and general studies. It is particularly useful to take the London matriculation examination, which is accessible in several prominent centres, as it opens the door to the medical faculty of any British University. Accordingly we print with some detail the regulations for that standard, if much criticised, test of a good all-round secondary education.

Next we have collected together under their respective headings the chief information concerning the facilities for medical study, both "preliminary" and "professional," and the regulations for examinations at the various teaching centres of the United Kingdom, so, for instance, that a student desiring to pursue his studies and obtain a medical degree at Cambridge, Edinburgh, or Manchester may find under one heading an account of the medical faculty of the University in question, of the hospitals which form its field for clinical instruction, and of the prizes and scholarships which it offers to the student of medicine.

It will be readily seen, however, that it is impossible to adhere rigidly to this plan without a good deal of overlapping and doubling of information, for, as is well known, the medical schools of some universities are served chiefly by hospitals in other centres. Thus the medical students of Oxford and Cambridge almost uniformly pursue their clinical studies in London, whilst any student who has gone through all his training in an improved provincial centre may sit for a degree in Medicine at London University. Again, when we come to consider the corporations which have the power to grant diplomas qualifying their possessors for the practice of medicine we find that they usually have no schools attached to them, but that they examine students who have gone through the curriculum at any recognised metropolitan or provincial school to the satisfaction of their teachers, and in accordance with the regulations of the corporations. The plan we have adopted has been to divide the Guide into the three main headings of England, Scotland, and Ireland, and to deal with medical education in each country as a separate entity, describing first the medical faculties of the universities in each country, and following with an account of the medical corporations having powers to grant diplomas by examination. Under the heading of each university we give a general description of its arrangements for conferring medical degrees, of its facilities for preparing its students for those degrees, particulars of its scholarships and

prizes, and of the hospitals affording clinical instruction and situated in the neighbourhood of the university buildings. Following this plan, the metropolitan medical schools and hospitals are grouped in their proper place as schools of the University of London, although they serve other universities, and the diploma-granting bodies. A similar plan is adopted in dealing with the provincial universities, the hospitals in connexion with each being described; for though these are not officially "schools" of the universities they supply an integral section of the teaching required by their candidates for medical graduation, and so for practical purposes may be looked on as constituent parts of the university system. The link is made all the closer by the common presence of many teachers on the medical staff of a hospital and on the staff of lecturers of the university with which that hospital is connected.

Following the description of medical education at the universities, an account is given of the regulations of the various corporations granting diplomas for the practice of medicine. The schools serving these examining bodies are identical with those already described, with the addition of the principal colonial medical schools. The Student's Guide contains also an account of certain provincial hospitals which afford facilities for clinical instruction, and at which students may take out some part of their course, though they are not officially connected with any teaching centre.

Detailed information concerning all those medical schools and their hospitals naturally forms the bulk of the Students' Number of THE LANCET; but we add to this an account of medical employment in the Naval, Military, and Indian Medical Services and in the Public Health Service. We give also the chief information useful to those desiring a diploma in public health or a special training in tropical medicine, together with an account of the facilities for post-graduate study, a branch of medical education the importance of which is rightly receiving increasing recognition. The Students' Number includes a report upon the system of education in dental surgery.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

POWERS AND DUTIES OF THE GENERAL MEDICAL COUNCIL.

As there is apparently, even among members of the medical profession, a great amount of ignorance as to the powers and duties of the General Medical Council, we think it well to lay clearly before our readers what the General Medical Council is and also what it is not.

Many of the false ideas on the subject are due to the use of the shortened title, "General Medical Council." The full title is, "General Council of Medical Education and Registration of the United Kingdom." This title is in accordance with the Medical Act of 1858, by which the General Medical Council was established under the Privy Council to enable persons requiring medical aid to distinguish qualified from unqualified practitioners. The Council was thus instituted not primarily for the benefit of the medical profession but to ensure an efficient medical service to the public. It is obvious that by so doing the profession itself gained, in that official sanction was given to reputable practitioners only, while a proper guarantee was afforded to the public that the standard of medical education should always keep abreast of the scientific knowledge of the day. The powers of the Council under which it fulfils these important functions fall under four heads. It is first a registering body: it registers the attainment by students of the degrees or other qualifications that legally entitle them to practise medicine. This duty forms its chief service to the State, as a complete list of practitioners of legal standing, which is embodied in the Medical Register, is thus rendered available for the information of the public. For the purposes of medical education it also registers the entry by students upon their medical studies. Secondly, it assures the public that the education of medical men is kept up to an efficient standpoint by maintaining at the proper pitch the standard of the various medical examinations. Thirdly, it is a penal and disciplinary body, having power to remove from the Register any practitioner adjudged guilty of conduct "infamous in a professional respect." Here again it is the public interest that is first considered, although these powers are for the very material advantage of the medical profession. The last duty of the Council is the codification of pharmaceutical remedies. Reform in the administration of the finances of the Council has of recent years removed acute pecuniary strain from that body, but the day should soon come when the State, recognising the public value of the work of the Council, should be willing to subsidise its efforts. Registrars are appointed by the General Council and by the Branch Councils to keep registers of qualified persons. They are bound by Section XIV. of the Act to keep their registers correctly, a duty which, mainly owing to the apathy of members of the medical profession, can only be performed with difficulty.

It is as well here to put down the advantages, such as they are, of being duly registered. A duly registered practitioner may assume a name, title, addition, or description implying that he is registered under the Act and recognised by law. A duly registered practitioner may sue in the courts of law for the recovery of charges for medical attendance or advice, or surgical attendance or advice, or for the supply of medicine, or for the performance of any operation—provided that he is not debarred from suing by being a Fellow or a Member of any corporation which objects to its Fellows or Members so suing. He may be exempted, if he so desire, from serving on juries, from serving sundry corporate and parochial offices, and from serving in the Militia. Only a registered practitioner can hold appointments in the navy, army, and in sundry Poor-law and other institutions. Only a registered practitioner can sign a valid medical certificate. Removal of the name from the Register debars a man from all the above-mentioned privileges.

The General Medical Council is in no way a medical protection society or a medical defence union. It is not a professional union or a guild charged with looking after the interests of the medical profession after the manner of the old trades guilds, except in so far as it is concerned with the education of medical students. It has no powers over any member of the medical profession except to remove the name of any offending member from the roll of the profession or Medical Register. Practitioners may be removed from the Medical Register (1) if convicted of felony or misdemeanour in England, or in Ireland, or in Scotland of any crime or offence, and (2) on being adjudged by the General Medical Council to have been guilty of "infamous conduct in a professional respect."

The General Medical Council is, we repeat, primarily a body charged with looking after medical education; it is not concerned with medical politics and, as a matter of fact, the time of the Council is almost entirely taken up with considering educational and registration matters, the latter including the penal cases of removal from the Register. The Council at present consists of 36 members, of whom, as will be seen by the annexed list, all but 10 are official representatives of some corporate body. Five members are chosen by the Crown on the advice of the Privy Council, and five others are elected by the members of the medical profession as Direct Representatives.

President of the General Council.—Sir Donald MacAlister, K.C.B. Members of the General Council.—Dr. Norman Moore, chosen by the Royal College of Physicians of London; Sir Henry Morris, Bart., Royal College of Surgeons of England; Mr. Arthur Trehern Norton, C.B., Apothecaries' Society of London; Mr. Arthur Thomson, M.B., University of Oxford; Sir T. Clifford Allbutt, K.C.B., University of Cambridge; Sir George Hare Philipson, M.D., University of Durham; Dr. Frederick Taylor, University of London; Dr. John Dixon Mann, Victoria University of Manchester; Dr. Robert Saundby, University of Birmingham; Dr. Richard Caton, University of Liverpool; Dr. Alfred George Barrs, University of Leeds; and Sir Isambard Owen, University of Bristol. In consequence of the retirement of Dr.

W. Tusting Cocking, the University of Sheffield is at present unrepresented. Sir John Batty Tuke, M.D., chosen by the Royal College of Physicians of Edinburgh; Mr. James William Beeman Hodsdon, Royal College of Surgeons of Edinburgh; Dr. David Neilson Knox, M.B., Faculty of Physicians and Surgeons of Glasgow; Sir Thomas Richard Fraser, M.D., University of Edinburgh; Sir Donald MacAlister, K.C.B., M.D., University of Glasgow; Dr. David White Finlay, University of Aberdeen; and Dr. John Yule Mackay, University of St. Andrews. Sir John William Moore, chosen by the Royal College of Physicians of Ireland; Sir Arthur Gerald Chance, Royal College of Surgeons in Ireland; Dr. Francis George Adye-Curran, Apothecaries' Hall of Ireland; Sir Charles Ball, Bart., University of Dublin; Sir Christopher John Nixon, Bart., M.D., National University of Ireland; and Sir William Whitla, M.D., Queen's University of Belfast. Nominated by His Majesty, with the advice of his Privy Council: Mr. Charles Sissmore Tomes, F.R.C.S., Dr. Arthur Newsholme, Sir Francis Henry Champneys, Bart., Sir David Caldwell McVail, and Dr. James Little. Elected as Direct Representatives: Dr. Langley Browne, Dr. H. A. Latimer, Dr. J. A. MacDonald, Dr. Norman Walker, and Dr. Leonard Kidd. Treasurers of the General Council: Mr. Charles Sissmore Tomes and Sir Henry Morris, Bart.

THE EDUCATIONAL CURRICULUM.

Professional Education.—The course of professional study after registration shall occupy at least five years. The Final Examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

Registration and Preliminary Examination of Medical Students.—The following are the General Medical Council's Regulations in reference to the registration of students in medicine:—

Every medical student shall be registered in the manner prescribed by the General Medical Council. The registration of medical students shall be placed under the charge of the branch registrars. Every person desirous of being registered as a medical student shall apply to the branch registrar of the division of the United Kingdom in which he is residing; and shall produce or forward to the branch registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has attained the age of 16 years, and has commenced medical study at an institution approved by the Council. The branch registrar shall enter the applicant's name and other particulars in the Students' Register and shall give him a certificate of such registration. Each of the branch registrars shall supply to the several licensing bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is registrar, a sufficient number of blank forms of application for the registration of medical students. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than 15 days before the date of registration. In addition to the universities and schools of medicine there are many institutions where medical study may be commenced. Applications for special exceptions are dealt with by the Students' Registration Committee, which reports all such cases to the Council.

The Preliminary Examination in General Education, required to be passed previously to registration as a medical student, is as follows:—

1. English language, including grammar and composition. Paraphrasing; questions on English history and geography. 2. Latin, including grammar, translation from unprescribed Latin books, and translation of English passages into Latin. 3. Mathematics, comprising (*a*) arithmetic, (*b*) algebra, including easy quadratic equations, and (*c*) geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions. 4. One of the following subjects: (*a*) Greek, (*b*) a modern language.

In many cases the Council will not accept certificates of pass in Preliminary Examination in General Education unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed at the same time. In some cases also the Council will not accept certificates without endorsement that all the required subjects are included. For a syllabus or for old examination papers application should be made to the Examining Bodies who can give details as to the requirements in regard to their own examinations.

A degree in Arts of any university of the United Kingdom or of the colonies or any other specially recognised university, or a certificate of having passed the final examination for a degree in Arts or Science of any university in the United Kingdom is considered a sufficient testimonial of proficiency.

Norman C. King, Acting Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 54, George-square, Edinburgh.—Richard J. E. Roe, Registrar of the Branch Council for Ireland, 35, Dawson-street, Dublin.

THE EXAMINING BODIES.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student.

I.—*Universities in the United Kingdom.*

University of Oxford.—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Responsions. Moderations.

University of Cambridge.—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Previous Examination. General Examination.

University of Durham.—Matriculation Examination for Science, Letters, and Music.

University of London.—Matriculation Examination. Senior School Examination.

Victoria University of Manchester.—Matriculation Examination. Senior School Certificate (under certain conditions).

University of Birmingham.—Matriculation Examination. Senior School-leaving Certificate.

University of Liverpool.—Matriculation Examination. Senior School Certificate (under certain conditions).

University of Leeds.—Matriculation Examination. Senior School Certificate (under certain conditions).

University of Sheffield.—Matriculation Examination. Senior School Certificate (under certain conditions).

University of Bristol.—Matriculation Examination.

University of Wales.—Matriculation Examination.

University of Edinburgh.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

University of Aberdeen.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

University of Glasgow.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

University of St. Andrews.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery. Final Examination for the diploma of L.L.A.

University of Dublin.—Junior Freshman Term Examination. Special Preliminary Examination. Junior Exhibition Examination. Examinations for the first, second, third, or fourth year in Arts.

The National University of Ireland: The Queen's University, Belfast.—Matriculation Examination.

Oxford and Cambridge Schools Examination Board.—Higher Certificate and School Examinations, Higher Certificate (certificates to include the required subjects).

II.—*Medical Licensing Bodies.*

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.

III.—*Educational Bodies other than Universities.*

College of Preceptors.—Examination for a First Class Certificate; Preliminary Examination for Medical Students.

Intermediate Education Board of Ireland.—Middle Grade Examination; Senior Grade Examination.

Educational Institute of Scotland.—Preliminary Medical Examination.

Scottish Education Department.—Leaving Certificates in Higher Grade or in Honours. Intermediate Certificate.

Central Welsh Board.—Senior Certificate Examination.

IV.—*Indian, Colonial, and Foreign Universities and Colleges.*

Every Certificate from Indian, Colonial, and Foreign Universities and Colleges must contain evidence that the Examination has been conducted by or under the authority of the Body granting it, must include all the subjects required by the General Medical Council, and must state that all the subjects of Examination have been passed in at one time; copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose

vernacular is other than English an Examination in a Classical Oriental Language may be accepted instead of an Examination in Latin. The German Abiturienten-Examen of the Gymnasia and Real-gymnasia and the examinations entitling to the French diplomas of Bachelier ès Lettres and Bachelier ès Sciences are recognised by the General Medical Council.

The remainder of the curriculum, though all under the supervision of the Council, is in detail in the hands of the various degree- and diploma-granting bodies whose representatives are members of the General Medical Council. In the next pages we give the regulations of the various examining bodies, but it must always be remembered that the examinations are under the supervision of the General Medical Council who visit the various centres in turn and closely inspect the procedure.

THE MEDICAL EXAMINING BODIES AND SCHOOLS OF THE UNITED KINGDOM.

A GUIDE TO THE FACILITIES FOR OBTAINING THE VARIOUS MEDICAL DEGREES AND OTHER QUALIFICATIONS AVAILABLE IN THE BRITISH ISLANDS.

I.—ENGLAND AND WALES.

THE UNIVERSITIES.

UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine, *B.M. and D.M.*, two degrees in Surgery, *B.Ch. and M.Ch.*, and two diplomas, *Public Health* and *Ophthalmology*.

Graduates in Arts (B.A. or M.A.) are alone eligible for the degrees. The most convenient course for the B.A. degree for intending graduates in Medicine is to take Responsions, the Preliminary Science Examinations mentioned below, and the Final Honour School of Physiology. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed:—1. Preliminary subjects: Mechanics and Physics, Chemistry, Animal Morphology, and Botany. 2. Professional. (*a*) First Examination: Subjects—Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School; Human Physiology, unless he has obtained a first or second class in Animal Physiology in the Natural Science School; Human Anatomy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene, Materia Medica and Pharmacology. The approximate dates of the examinations are as follows:—Preliminaries—Mechanics, Physics, and Chemistry, December and June; Animal Morphology, December and March; Botany, March and June; Professional (First and Second B.M.), June and December.

The First Examination for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. Anatomy and Physiology are to be passed together, and Organic Chemistry may be taken before or after these have been passed.

The Second Examination may be passed after the completion of the first, but Pathology, Hygiene, and Materia Medica and Pharmacology may be taken before or with the remaining subjects. Before admission to the Second Examination candidates must present certificates of attendance on a course of laboratory instruction in Practical Pathology and Bacteriology and of having acted as post-mortem clerk for three months, surgical dresser for six months, and clinical clerk for six months. Also they must produce certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, of proficiency in the practice of Vaccination and Anæsthetics, and of having attended a course of Practical Pharmacology. Also in respect of the First Examination candidates must present certificates showing that they have dissected the whole body once and have attended courses of laboratory instruction in Practical Histology and Practical Physiology.

The degree of D.M. is granted to Bachelors of Medicine of the University provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The Regius Professor may direct the dissertation to be read in public. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed the M.Ch. examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

Diploma in Ophthalmology.—There is an examination once in each year in the Theory and Practice of Ophthalmology for the purpose of granting certificates of proficiency therein, styled Diplomas in Ophthalmology. The examination is under the supervision of the Board of the Faculty of Medicine, which has power to make regulations as to the subjects of the examination, the time at which the examination is held, and the conditions of admission. No candidate is admitted to the examination for the diploma who has not pursued at Oxford a course of study in Ophthalmology approved by the Board of the Faculty of Medicine, and extending over a period of at least three months. The fee for admission to the examination is £15, unless the candidate is a graduate of the University, in which case it is £10 only.

Public Health.—Information with regard to the Public Health Diploma will be found at page 638.

Travelling Fellowship, Scholarships, and Prizes.—A Radcliffe Travelling Fellowship is awarded annually after an examination held in February. It is tenable for three years and is of the annual value of £200. The stipend is paid by University College. The examination is in Physiology, Pathology, and Hygiene, and is partly "practical." Candidates must be graduates in Medicine of the University. The holder must travel abroad for the purpose of medical study. Application should be made to the Radcliffe Examiners, Radcliffe Library, University Museum. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject, including Physiology or Pathology. The Radcliffe Prize, founded by University College (1907), is of the value of £50 and is awarded biennially for research in some branch of medical science. The prize will be awarded in 1912. Candidates must send in their memoirs to the University Registry on or before Dec. 1st, 1912. No memoir for which any University prize has already been awarded is admitted to competition for the Radcliffe prize, and the prize will not be awarded more than once to the same candidate. The C. Theodore Williams Scholarships of the value of £50 each are awarded annually in the subjects of Anatomy and Physiology. The Scholarships in Science which are offered by several Colleges are open to those who intend to pursue Medicine. The value of these scholarships is usually £80 a year for four years.

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1902, which contain the official schedules of the several subjects of examination in both Arts and Medicine; from the Student's Handbook to the University (all of which are published by the Clarendon Press); from the Regius Professor of Medicine; and from the Professors in the several departments of medical science.

Professors—Anthropology: E. B. Tylor, M.A. Botany (Sherard): S. H. Vines, M.A. Chemistry (Waynflete): W. Odling, M.A. Comparative Anatomy (Linacre): G. C. Bourne, D.Sc. Human Anatomy: A. Thomson, M.A. Lecturer in Applied Anatomy: A. P. Dodds-Parker, B.M. Medicine (Regius): Sir W. Osler, Bart., D.M. Natural Philosophy (Sedleian): A. E. H. Love, D.Sc. Physics (Wykeham): J. S. E. Townsend, M.A. Physiology (Waynflete): F. Gotch, M.A., D.Sc. Reader: J. S. Haldane, M.A. Zoology: E. B. Poulton, M.A., D.Sc. Pathology: G. Dreyer, M.D. Lecturer: E. W. A. Walker, D.M.

In addition to the University lectures and classes the several Colleges provide their undergraduates with tuition for all examinations up to the B.A. degree.

UNIVERSITY OF OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Courses of instruction are given in

connexion with the Oxford University Medical School. These include (1) a course in Practical Medicine by the Regius Professor of Medicine; (2) Clinical lectures by the Litchfield Lecturers in Medicine and Surgery; and (3) tutorial instruction and demonstrations in special Regional Anatomy (medical and surgical), methods of Medical and Surgical Diagnosis, and Surgical Manipulation. Pathological demonstrations are given in the post-mortem room at the Pathological Laboratory by the Professor of Pathology. Practical Pharmacy is taught in the Radcliffe Dispensary. Opportunities are offered to students who wish to act as surgical dressers and clinical clerks in the out-patient departments and in the wards. The Hospital contains 155 beds. Honorary Physician: Dr. E. B. Gray. Honorary Surgeon: Mr. A. Winkfield. Active Consulting Physician: Professor Sir William Osler, Bart. Acting Staff:—Honorary Physicians: Dr. W. Tyrrell Brooks, Dr. W. Collier, and Dr. E. Mallam. Honorary Assistant Physician and Medical Registrar: Dr. A. Waters. Honorary Surgeons: Mr. Horatio P. Symonds, Mr. R. H. A. Whitelocke, and Mr. A. P. Dodds-Parker. Honorary Assistant Surgeon and Surgical Registrar: Mr. E. C. Bevers. Consulting Ophthalmic Surgeon: Vacant. Honorary Consulting Pathologist: Professor Georges Dreyer. Honorary Assistant Pathologist: Dr. A. Gibson. Consulting Dental Surgeon: Mr. E. A. Bevers. Honorary Radiographer: Mr. R. H. Sankey. House Physician: Dr. C. Kemp. House Surgeon: Mr. F. C. Tibbs. Junior House Surgeon: Mr. C. A. Birts.

UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms (three years) by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done before he comes into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board, the Oxford or Cambridge Senior Local Examinations, the London Matriculation Examination, the Scotch Education Department, Responsions at Oxford, and the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either continuing mathematical and classical study and passing the ordinary examinations for B.A. or going out in one of the Honour Triposes. The Natural Sciences Tripos is taken most frequently, as some of the subjects are practically the same as those for the first and second M.B. examinations.

For the degree of *Bachelor of Medicine* (*M.B.*) five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second examinations for M.B. Hospital practice and many of the requisite lectures may be attended in Cambridge, and a certain number of students remain to attend lectures and hospital practice until they have passed the second part of the second examination for M.B. The laboratories for Pathology, Bacteriology, and Pharmacology are well equipped. Addenbrooke's Hospital makes provision for the necessary clinical training.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics and Elementary Biology. These parts may be taken together or separately. The *second* is divided into two parts—viz., (1) Human Anatomy and Physiology; and (2) Pharmacology and General Pathology. The *third* is also divided into two parts: (1) Principles and Practice of Surgery (including Special Pathology and Midwifery and Diseases Peculiar to Women); and (2) Principles and Practice of Physic (including Diseases of Children, Mental Diseases, Medical Jurisprudence), Pathology (including Hygiene and Preventive Medicine), and Pharmacology (including Therapeutics and Toxicology). The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

Candidates who have passed both parts of the third M.B. examination are admitted to the registrable degree of *Bachelor of Surgery* (*B.C.*) without separate examination and without keeping an Act.

The degree of *Doctor of Medicine* (*M.D.*) may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools with *viva voce* examination; and a short extempore essay has to be written on a topic taken from the general subject of his thesis, whether it be Physiology, Pathology, Pharmacology, the Practice of Medicine, State Medicine, or the History of Medicine.

For the degree of *Master of Surgery* (*M.C.*) the candidate must have passed all the examinations for B.C., or, if he is an M.A., have obtained some other registrable qualification in surgery. He is required either (1) to pass an examination in Principles and Practice of Surgery, Surgical Anatomy and Surgical Operations, and Pathology, and to write an extempore essay on a Surgical Subject; or (2) to submit to the Medical Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years, at least, must have elapsed from the time when he completed all required for the degree of B.C. Before submitting original contributions he must have been qualified at least three years.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, Pharmacology, and General Pathology may be obtained upon sending a stamped directed envelope to the Registrary, Cambridge.

The Professors, Readers, and Lecturers in the various subjects are as follows. Professors—Anatomy: A. Macalister, M.D. Biology (Quick): G. H. F. Nuttall, Sc.D. Botany: A. C. Seward, M.A. Chemistry: W. J. Pope. Natural Philosophy (Jacksonian): Sir James Dewar, M.A. Pathology: G. Sims Woodhead, M.A. Physic (Regius): Sir T. Clifford Allbutt, M.D. Physiology: J. N. Langley, M.A. Surgery: F. H. Marsh, M.A. Therapeutics (Downing Professor of Medicine): J. B. Bradbury, M.D. Zoology, &c.: J. Stanley Gardiner, M.A. Readers—Botany: F. F. Blackman, M.A. Chemical Physiology: F. G. Hopkins, M.A. Zoology: A. E. Shipley, M.A. Lecturers—Bacteriology: G. S. Graham-Smith, M.D., and Louis Cobbett, M.D. Botany: A. G. Tansley, M.A. Chemistry: Dr. Sell and Dr. Fenton. Organic Chemistry: S. Ruhemann, M.A. Chemistry and Physics as Applied to Hygiene: J. E. Purves, M.A. Advanced Morphology of Vertebrates: H. Gadow, M.A. Advanced Morphology of Invertebrates: A. E. Shipley, M.A. Pathology (Huddersfield): T. S. P. Strangeways, M.A. Physics: G. F. C. Searle, M.A., and C. T. R. Wilson, M.A. Pharmacology: W. E. Dixon, M.A. Advanced Physiology: W. H. Gaskell, M.D., and L. E. Shore, M.D. Physiology: H. K. Anderson, M.D. Physiological and Experimental Psychology: W. H. Rivers, M.A. Medical Jurisprudence: B. Anningson, M.D. Medicine: L. Humphry, M.D. Surgery: G. E. Wherry, M.A., F.R.C.S. Physiological Anthropology: W. L. H. Duckworth, M.D.

University Prize in Medicine.—There is only one University Prize in Medicine. The Raymond Horton Smith Prize (value £19) is awarded to that candidate for the degree of M.D. who presents the best thesis for the degree during the academical year, provided that he has taken honours in a tripos examination. Medical Studies are endowed by the numerous Natural Science scholarships at the various colleges, information about which can be obtained from the respective Deans.

Tropical Medicine and Hygiene.—Information on these subjects is given on p. 639 under the section on Public Health.

ADDENBROOKE'S HOSPITAL.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are given at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery is given in the wards and out-patients' rooms by the physicians and surgeons daily during the term time and vacations. The fee for pupilship is 3 guineas a term. Physicians: Professor Sir Clifford Allbutt, Professor Bradbury, and Dr. L. Humphry. Assistant Physicians: Dr.

E. Lloyd Jones and Dr. J. Aldren Wright. Surgeons: Professor F. Howard Marsh, Mr. G. E. Wherry, Mr. F. Deighton, and Dr. Griffiths. Assistant Surgeon: Mr. Arthur Cooke.

UNIVERSITY OF LONDON.

The University of London was established by Royal Charter in 1836 as an examining and degree conferring body with several affiliated colleges but no direct teaching functions. In 1900 it was reconstituted under the Act of Parliament 1898 and became a teaching as well as an examining body. Many schools already existing became constituent colleges, including all the metropolitan medical schools. It also appoints teachers in special subjects to give lectures at the University. The question of the centralisation of preliminary scientific studies has for some years occupied the very serious attention of the University and its constituent schools, but has only partially been carried into effect at present. A considerable sum of money was offered for the erection and equipment of an institute of medical sciences as a central school of the University, but unfortunately, as we think, a division of opinion in the Faculty of Medicine forced the University to abandon the project.

The medical degrees awarded by the University are those of M.D., M.S., and M.B., B.S., the two latter being now given together as a graduating degree, whereas formerly the M.B. alone was a qualifying degree and the B.S. was taken optionally as a separate examination. The medical degrees of the University of London are granted to both internal and external students, the former being students of the constituent schools and colleges of the University.

Teaching Staff.—The teaching staff of the University is organised under two heads: 1. Appointed teachers—i.e., such as are appointed by, and are paid out of the funds of, the University. 2. Recognised teachers—i.e., those who have been appointed and are paid by the several schools of the University and other institutions at which instruction is given under the auspices of the University, and who have been recognised by the Senate as conducting work of University standard. Courses by non-recognised teachers may also be approved in schools of the University. Thus in the Faculty of Medicine there are at present nine appointed teachers, and there are 405 recognised teachers belonging to the various metropolitan medical schools. There are 235 recognised teachers in the Faculty of Science. The lecturers in the Medical Sciences and the professors in the Faculties of Medicine in University College, London, and King's College, London, will be found enumerated under their respective medical schools.

Internal and External Students.—Matriculated students of the University may be either internal or external. Internal students of the University are students who have matriculated at the University and who are pursuing a course of study approved by the University, either (*a*) under the direct control of the University or a committee appointed thereby; or (*b*) under one or more of the appointed or recognised teachers of the University. Centres for preliminary and intermediate medical studies have been established by the University at University and King's Colleges. Internal students must pursue their studies at one of the above centres, or at one of the medical schools connected with the University. These are University College Hospital, King's College Hospital, St. Bartholomew's Hospital, the London Hospital, Guy's Hospital, St. Thomas's Hospital, St. George's Hospital, the Middlesex Hospital, St. Mary's Hospital, Charing Cross Hospital, Westminster Hospital, and the London (Royal Free Hospital) School of Medicine for Women. The London School of Tropical Medicine and the Lister Institute of Preventive Medicine are also recognised as schools of the University in special departments. External students are all other matriculated students, and may pursue their studies at other universities and medical schools, presenting themselves for examination at the University of London.

The Matriculation Examination.—Students before being admitted to the University must either (1) have passed the Matriculation or the School Examination (Matriculation or Higher Standard), or (2) have been exempted therefrom under Statute 116 of the University which recognises certain other examinations in its lieu. Such exemption is granted to graduates of British and certain Colonial Universities, and under certain conditions to matriculated students of Colonial Universities and the Universities of Manchester, Liverpool, Leeds, and Sheffield, to holders of the senior local certificates of the Universities of Oxford and Cambridge, the higher certificate and the school certificate of the Oxford and Cambridge Schools Examination Board, the Scotch school-leaving certificate, the senior grade certificate of the Intermediate Examination Board for Ireland, the matriculation certificate of the Joint Board of the Northern Universities, and to students who have passed their previous examination at Cambridge. These exemptions allow of a wide choice of examinations to students who intend to take the University course. The examinations for matriculation take place three times in each year—namely, on Sept. 15th (if that day be a Monday, or if not, on the Monday next preceding the 15th), on the second Monday in January, and on the second Monday in June (or July, as may be hereafter determined). The examinations in January and June (or July), but not that in September, may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the Colonies. (Neither Botany nor Drawing can be chosen for subjects in the Colonies.) It is noteworthy that the September examination affords an opportunity for prospective medical students who may have failed at the midsummer examination to pass the Matriculation in time to enter upon their medical course in October. Students who pass the January Matriculation are able to enter for the First Examination for Medical Degrees in the following July under certain conditions in the case of internal students. Every candidate must, on or before August 20th for the September examination, on or before Nov. 25th for the January examination, and on or before April 25th for the June (or July) examination, apply by postcard to the Principal for a form of entry, of which the first in order must be returned 14 days before the commencement of the September examination, the second on or before Dec. 1st, and the third on or before May 1st, accompanied in the same cover by a certificate showing that the candidate has completed his sixteenth year, and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, or a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate if of full age, will be accepted. As candidates cannot be admitted after the list is closed, any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Principal, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2. If he withdraws his name before the last day of entry it shall be returned to him. If he fails to present himself he shall be allowed to enter for a subsequent Matriculation within eight months on payment of £1. If he retires after the commencement of the examination or fails to pass it the full fee of £2 shall be payable on every re-entry. Candidates must show a competent knowledge of each of the following five subjects, according to the details specified: 1. English—Composition, Précis-writing, salient facts in English History and Geography. A subject for an essay, to be chosen by candidates, to test power of expression, thought, and arrangement and general knowledge. 2. Elementary Mathematics—Arithmetic, Algebra (including quadratic equations and graphs of simple functions), and the subjects of Euclid (Books I. to IV). 3. Latin, or Elementary Mechanics, or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry, or Elementary Botany. 4 and 5. Two of the following subjects, neither of which has been taken under Section 3 (if Latin be not taken, one of the other subjects must be another language from the list): Latin, Greek, French, German, Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced), Elementary Mechanics, Elementary Chemistry, Elementary Physics (Heat, Light, and Sound), Elementary Physics (Electricity and Magnetism), and Botany. One of the subjects may be some other language than Latin, Greek, French, and German, subject to the approval of the Matriculation Board, provided that six months' notice is given before the beginning of the Matriculation examination for which they enter and an additional fee paid. Additional subjects, of which, however, candidates must give notice two months previous to the examination,

are: Arabic, Sanskrit, Spanish, Portuguese, Italian, Hebrew, Chinese, Modern Dutch, and Zoology.

Provincial Examinations for Matriculation.—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations, and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Principal of the University, who will then make all necessary arrangements. Besides the University fee, a fee usually varying from £1 to £3 is charged by the local authorities and must be paid *at the local centre* immediately before the commencement of the several examinations.

Faculty of Medicine.—The Faculty of Medicine grants the joint degrees of M.B., B.S. (*Bachelor of Medicine and Surgery*), and the higher separate degrees of M.D. (*Doctor of Medicine*) and M.S. (*Master of Surgery*).

It is noteworthy that the curriculum for the medical degrees is now five and a half years from the time of matriculation, except in the case of students who have passed the Preliminary Scientific Examination or the First Examination for Medical Degrees before July, 1910, and that the examinations formerly known as the Preliminary Scientific, the Intermediate, and the Final Examination in Medicine are now respectively entitled the First, Second, and Third Examinations for Medical Degrees. Part II. of the former Preliminary Scientific Examination has now been made Part I. of the Second Examination.

A. *Internal Students.*—In order to be admitted to the Bachelor's degrees a student must normally, after registration as an internal student, have: (1) Attended prescribed courses of study for five and a half years in one or more schools of the University. (2) Passed the following examinations, under the conditions mentioned below: (*a*) The First Examination for Medical Degrees in Inorganic Chemistry, Physics, and General Biology; (*b*) the Second Examination for Medical Degrees: Part I., Organic and Applied Chemistry; Part II., Anatomy, Physiology, and Pharmacology, including Pharmacy and Materia Medica; (*c*) the Third Examination for Medical Degrees, or M.B., B.S. Examination in Medicine, including Therapeutics and Mental Diseases, Surgery, Midwifery and Diseases of Women, Pathology, Forensic Medicine and Hygiene.

B. *External Students.*—To be admitted to the Bachelor's degrees an external student must (1) have passed the Matriculation examination or have been exempted therefrom under Statute 116 not less than five and a half years previously; (2) have passed subsequent examinations similar to those required of an internal student; and (3) have been engaged in professional studies during the five and a half years subsequently to Matriculation and four and a half years subsequently to passing the First Examination for Professional Degrees at one or more of the medical institutions or schools recognised by this University for the purpose, one year at least of the four and a half years to have been spent in one or more of the recognised institutions or schools in the United Kingdom.

The First Examination for Medical Degrees (Inorganic Chemistry, Physics, and General Biology) will take place twice in each year, commencing on the Monday following December 10th and on the second Monday in July. It must as a rule be passed by internal students not less than one academic year after matriculation and by external students not less than nine months after matriculation. Candidates, however, who have passed or been admitted under Statute 116 as exempt from matriculation in the preceding January will be admitted to the first examination for medical degrees in July as external students, or as internal students if they have attended the prescribed course of study throughout the session and obtained the consent of the authorities of their school or institution. Every candidate must apply (internal students to the academic registrar and external students to the external registrar) for a Form of Entry on or before Nov. 1st or May 24th, which must be returned, accompanied by the proper fee, not later than Nov. 8th for the December examination or June 1st for the July examination. The fee is £5 for each entry to the whole examination, provided that all the subjects are taken at one time. When less than the whole examination is taken at one time it is £2 for each subject. The examination will include two papers in each of the three subjects, three hours being allowed for each paper. Three hours each will be devoted to practical examinations in Inorganic Chemistry and Physics and six hours to a practical examination in General Biology. *Candidates must, at their first entry, present themselves in all three subjects.* Candidates failing in one subject only may, with permission, present themselves for re-examination in that subject on payment of the proper fee.

The Second Examination for Medical Degrees (Part I.): Organic Chemistry.—This examination will take place twice in each year, commencing on the Thursdays following the third Monday in March and the second Monday in July. No candidate will be admitted to this examination within six months of having passed the First Examination. Every candidate must apply on or before Feb. 8th or May 24th for a form of entry, which must be returned not later than Feb. 15th for the March examination or June 1st for the July examination. The fee is £2 for the first and every subsequent entry. The examination will consist of a paper and practical work, and may include oral questions in Organic Chemistry, which is "to be treated in an elementary manner, and with special regard to its applications in physiology, pharmacology, and pathology."

The Second Examination for Medical Degrees (Part II.) takes place twice in every year, commencing on the third Monday in March and on the first Monday in July. The subjects of the examination are Human Anatomy and Embryology, Physiology, and Pharmacology, including Pharmacy and Materia Medica. No candidate shall be admitted to the examination unless he has passed the First Examination for Medical Degrees at least 18 months previously, and has passed Part I. of the Second Examination for Medical Degrees. Internal students must have completed the courses of study prescribed for them by the University, and external students must produce certificates of having subsequently to having passed the First Examination for Medical Degrees been students during one and a half academic years at one or more of the medical institutions or schools recognised by the University and of having attended (1) a course of not less than 100 lectures and demonstrations on Human Anatomy; (2) a course of Dissections for not less than 12 months; (3) a course of not less than 60 lectures on Physiology; (4) adequate courses of Experimental Physiology, Histology, and Physiological Chemistry; (5) adequate courses of lectures and demonstrations on Pharmacology, Pharmacy, and Materia Medica; and (6) Practical Pharmacy for not less than two months. These certificates must be transmitted to the Registrar at least not later than Feb. 15th or June 1st for the March and July examinations respectively, applications for forms of entry having been made by Feb. 1st or May 17th. The fee for each entry to the whole examination is £8. For re-examination in one subject it is £4.

M.B., B.S. Examination.—The M.B., B.S. examination takes place twice in each year, commencing on the fourth Monday in October and on the first Monday in May. No candidate except those who pass the Preliminary Science or First Examination for Medical Degrees before July, 1912, will be admitted to this examination within three academic years from the date of passing in Anatomy and Physiology at the Second Examination (Part II.), nor unless he has completed that examination together with prescribed courses of study or practice summarised below. (1) Principles and Practice of Medicine; (2) Clinical Methods and Physical Diagnosis; (3) Insanity (with clinical demonstrations at a recognised Asylum); (4) Therapeutics; (5) Vaccination; (6) Principles and Practice of Surgery; (7) Operative Surgery, Surgical Anatomy, Practical Surgery, and the Administration of Anæsthetics; (8) Diseases of the Eye, Ear, and Throat; (9) Lectures and Demonstrations on Midwifery and Diseases of Women; (10) Practical Midwifery, the conduct of at least 20 Labours, and practice as a Clinical clerk in Gynæcological work; (11) Pathology and Bacteriology; (12) work of the Post-mortem room; (13) Forensic Medicine; and (14) Hygiene. He must also have attended the Medical and Surgical practice of a recognised hospital for two years and a course of instruction at a recognised Fever Hospital for two months. He must have had clinical instruction and must have held the posts of medical clinical clerk and surgical dresser for periods of six

months each. For internal students the above form the subjects of the last two and a half years of study as prescribed by the University. Forms of entry for the examination must be applied for on or before Sept. 21st or March 24th and returned with certificates of having undertaken the above-mentioned courses of study by Sept. 28th or April 1st respectively. Candidates will be examined in Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, Midwifery, and Diseases of Women. The subjects may be divided into two groups—namely: (1) Medicine, Pathology, Forensic Medicine, and Hygiene; and (2) Surgery, Midwifery, and Diseases of Women. These groups may be taken either separately or together. The fee is £10 for each entry to the whole examination and £5 for examination or re-examination in either group. There will be no separate examination held for Honours, but the list of candidates who have passed will be published in two parts—namely, an Honours list and a Pass list. Bachelors of Medicine of this University who graduated in or before May, 1904, may obtain the B.S. degree by passing the Surgical part of the M.B., B.S. examination.

Doctor of Medicine.—The examination for this degree takes place twice in each year, commencing on the first Monday in December and on the first Monday in July. Candidates must have taken the degrees of M.B., B.S. not less than two years previously, but for those who have taken the M.B., B.S. degrees with honours or have done certain original work, or have had such exceptional experience in the branch in which they present themselves as may be approved by the University, this period of delay may be reduced to one year. Those who have obtained their M.B. degrees in or before May, 1904, will not be required to hold the degree of B.S. before seeking the doctorate. Candidates may present themselves for examination in one of the following branches, namely: (1) Medicine; (2) Pathology; (3) Mental Diseases; (4) Midwifery and Diseases of Women; (5) State Medicine; and (6) Tropical Medicine. In most branches an appointment at an approved hospital is necessary. Certain conditions have to be fulfilled in each case, varying according to the nature of the branch in question. Candidates who have passed or presented themselves for the M.D. examination in one branch may present themselves for examination in another branch at a subsequent examination. Any candidate for the degree of M.D. may transmit to the Registrar, not less than two months before the commencement of the examination, a thesis or published work having definite relation to the branch of Medicine in which he is a candidate, and if the thesis be approved by the examiners the candidate may be exempted from the written examination in that subject. The fee is £20, and for re-examination £10.

In Branches I. and IV. candidates (other than those who present a thesis) for the July examination must apply to the Academic or External Registrar for forms of entry on or before May 20th, which must be returned not later than June 1st, and candidates (other than those who present a thesis) for the December examination must apply for forms of entry on or before Oct. 20th, which must be returned not later than Nov. 1st. The corresponding dates for application for, and return of, forms of entry for candidates in Branches II., III., V., and VI., and candidates in other branches who present a thesis, are April 20th and May 1st for the July examination; and Sept. 20th and Oct. 1st for the December examination. Forms of entry must be returned duly filled up, accompanied by the proper fee, and by the certificates required for the branch concerned.

Master in Surgery.—The examination for the degree of Master in Surgery takes place twice in each year and commences on the first Monday in December and on the first Monday in July. Candidates must produce certificates of having taken the degrees of M.B. and B.S. not less than two years previously (with certain exemptions, as in the examination for the M.D.). They may present themselves for examination either in Branch I., Surgery, including Surgical Pathology and Anatomy, a Clinical examination, and operations on the dead body; or in Branch II., Dental Surgery, including Oral Anatomy, Physiology, Surgery, and Therapeutics, and a practical examination in Bacteriology. Candidates must have held for at least six months a Surgical (Branch I.) or a Dental (Branch II.) resident or non-resident hospital appointment approved by the University. Any candidate for the degree of M.S. may transmit to the Registrar, not later than two months before the commencement of the examination, a thesis or published work having definite relation to Surgery (Branch I.), or Dental Surgery (Branch II.), and if the thesis be approved by the examiners the candidate may be exempted from the written examination. The fee is £20, and for re-examination £10.

Full details of the prescribed curricula of study, with the syllabus for each examination and of certain exemptions which the Senate has power to grant in respect to certain examinations and the courses of study presented for them, and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S.W.

MEDICAL SCHOOLS OF THE UNIVERSITY OF LONDON.[1]

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE. — The clinical practice of the hospital is large. The hospital contains 750 beds, of which 680 are for patients in the hospital at Smithfield and 70 for convalescent patients at Swanley.

This hospital receives within its walls nearly 8000 in-patients annually and its out-patients and casualties amount to more than 130,000 annually.

Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery in which Chief Assistants and Clinical Assistants are appointed annually. There is an Electrical Department, including X Ray, &c. Surgical operations take place every day at 1.30 P.M. and Surgical Consultations are held on Thursdays at the same hour. Medical Consultations are held on Thursdays at 3.15 P.M. The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions. Clinical Lectures on all special subjects are also given. The visits of the physicians and surgeons are made at 1.30.

Ten house physicians and ten house surgeons are appointed annually. During their first six months of office they act as "junior" house physicians and house surgeons and receive a salary of £25 a year. During their second six months they become "senior" house physicians and house surgeons and are provided with rooms by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant, an ophthalmic house surgeon, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two assistant anæsthetists are appointed annually, and receive salaries of £120 and £100 respectively, with rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. All the appointments are now free. A residential college is attached to the hospital.

New Buildings.—The new buildings comprise residential quarters for the resident staff, new casualty, medical, surgical, and special out-patient departments, new casualty wards, dispensary, and clinical lecture theatre. A new chemical laboratory has been added to the Medical School, and a laboratory devoted to instruction in Public Health. A second new Block which is devoted to Pathology, and contains the post-mortem room as well as extensive laboratories for bacteriology, clinical pathology, pathological histology, and pathological chemistry has recently been added.

The Medical School Buildings include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

[1] For Ancillary Metropolitan Medical Schools see p. 597.

Special Classes for the Final F.R.C.S. are held twice yearly.

Instruction in Preliminary Science is given to University of London students in chemistry, biology, and physics throughout the year.

Laboratory Instruction for the D.P.H. is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join. Additional rooms for the Students' Union have recently been added, viz.: (*a*) a large reading and smoking room; (*b*) a committee and writing room; and (*c*) luncheon and dining hall; and a miniature rifle range has been provided. These are in the new block.

Staff.—Consulting Physicians: Sir William S. Church, Bart., K.C.B., Dr. Hensley, Sir Lauder Brunton, Bart., F.R.S., and Sir Dyce Duckworth, Bart. Consulting Surgeons: Mr. Willett, Sir Henry T. Butlin, Bart., Professor Marsh, and Mr. Harrison Cripps. Consulting Aural Surgeon: Mr. Cumberbatch. Physicians: Dr. Norman Moore, Dr. Samuel West, Dr. Ormerod, Dr. Herringham, and Dr. Tooth, C.M.G. Surgeons: Mr. Bruce Clarke, Sir Anthony Bowlby, C.M.G., Mr. Lockwood, Mr. D'Arcy Power, and Mr. Waring. Assistant Physicians: Dr. Garrod, Dr. Calvert, Dr. Morley Fletcher, Dr. Drysdale, and Dr. Horton-Smith Hartley, M.V.O. Assistant Surgeons: Mr. Eccles, Mr. Bailey, Mr. Rawling, Mr. Gask, and Mr. Gordon Watson. Physician Accoucheur: Sir Francis H. Champneys, Bart. Physician Accoucheur with charge of out-patients: Dr. W. S. A. Griffith. Surgeon to Martha Ward: Mr. Bruce Clarke. Assistant Physician Accoucheur: Dr. Williamson. Ophthalmic Surgeons: Mr. Jessop and Mr. Holmes Spicer. Surgeon, Throat and Nose Department: Mr. W. D. Harmer. Assistant Surgeon, Throat and Nose Department: Mr. F. A. Rose. Aural Surgeon: Mr. Ernest West. Assistant Aural Surgeon: Mr. Sydney Scott. Dental Surgeons: Mr. Paterson and Mr. Ackland. Assistant Dental Surgeons: Dr. Austen and Mr. Coleman. Medical Officer in charge of Electrical Department: Dr. Lewis Jones. Assistant Medical Officer to Electrical Department: Dr. H. Walsham. Pathologist: Dr. Andrewes. Assistant Pathologist: Dr. H. M. Gordon. Administrators of Anæsthetics: Mr. Gill and Mr. Cross. Assistant Administrators of Anæsthetics: Mr. Boyle and Mr. Trewby. Medical Registrars: Dr. Horder and Dr. Langdon Brown. Surgical Registrars: Mr. Etherington Smith and Mr. Elmslie. Casualty Physicians: Dr. Cockayne and Dr. Gow.

Lectures and Demonstrations.—Medicine: Dr. Norman Moore and Dr. S. West. Clinical Medicine: Dr. Norman Moore, Dr. S. West, Dr. J. A. Ormerod, Dr. W. P. Herringham, and Dr. H. H. Tooth. Practical Medicine: Dr. Horton-Smith Hartley and Dr. T. J. Horder. Surgery: Mr. W. Bruce Clarke and Mr. D'Arcy Power. Clinical Surgery: Mr. W. Bruce Clarke, Sir Anthony Bowlby, Mr. C. B. Lockwood, Mr. D'Arcy Power, and Mr. Waring. Practical Surgery: Mr. L. B. Rawling and Mr. G. E. Gask. Operative Surgery: Mr. W. McAdam Eccles, Mr. L. B. Rawling, and Mr. G. E. Gask. Midwifery and the Diseases of Women and Children: Sir Francis H. Champneys, Bart., and Dr. W. S. A. Griffith. Practical Midwifery: Dr. J. D. Barris. Pathology: Dr. F. W. Andrewes. Bacteriology (advanced): Dr. E. E. Klein. Chemical Pathology: Dr. A. E. Garrod and Dr. J. D. Priestley. Morbid Anatomy and Post Mortems: Dr. T. J. Horder, Dr. Langdon Brown, Mr. Etherington Smith, and Mr. Elmslie. Practical Pathology: Dr. A. E. Gow, Mr. W. G. Ball, Dr. A. E. Stansfeld, Mr. J. E. H. Roberts, and Mr. B. G. Klein. Ophthalmic Medicine and Surgery: Mr. W. H. Jessop. Diseases of the Eye: Mr. W. H. Jessop and Mr. W. Holmes Spicer. Ophthalmoscopic Demonstrations: Mr. W. Holmes Spicer. Diseases of the Ear: Mr. C. E. West and Mr. Sydney Scott. Diseases of the Larynx: Mr. W. D. Harmer and Mr. F. E. Rose. Orthopædic Surgery: Mr. W. McAdam Eccles. Diseases of the Skin: Dr. H. G. Adamson. Diseases of Children: Dr. H. Morley Fletcher. Medical Electricity and Electro-therapeutics: Dr. H. Lewis Jones and Dr. H. Walsham. Mental Diseases and Insanity: Dr. R. Jones. Dental Surgery: Mr. W. B. Paterson and Mr. R. C. Ackland. Anæsthetics: Mr. R. Gill, Mr. W. F. Cross, Mr. H. E. G. Boyle, and Mr. F. Trewby. Forensic Medicine: Dr. W. P. Herringham. Descriptive and Surgical Anatomy: Dr. C. Addison. Practical Anatomy: Dr. C. Addison, Mr. H. W. Wilson, Mr. R. F. Moore and Mr. H. Blakeway. General Anatomy and Physiology: Dr. J. S. Edkins. Practical Physiology: Dr. J. S. Edkins, Dr. W. Langdon Brown, and Dr. C. M. H. Howell. Materia Medica, Pharmacology, and Therapeutics: Dr. James Calvert. Pharmacology: Dr. F. A. Bainbridge. Biology and Comparative Anatomy: Dr. T. W. Shore. Practical Biology: Dr. T. W. Shore and Dr. W. A. Cunnington. Chemistry: Dr. W. H. Hurtley. Practical Chemistry: Dr. W. H. Hurtley and Mr. W. O. Wootton. Physics: Mr. F. Womack. Practical Physics: Mr. F. Womack and Mr. Lloyd Hopwood. Botany: Rev. G. Henslow. Public Health: Sir George Newman. Sanitary Law: Dr. Lyster. Museum Curator: Dr. F. W. Andrewes. Junior Curator: Dr. Woodwark. Dean of the School: Dr. T. W. Shore. Warden of College: Mr. R. B. Etherington Smith.

Scholarships given in aid of Medical Study.—At this school various Scholarships, prizes, &c., are given, none of those in the following list having a less value than £10. There are also other prizes and medals on a lower scale of value. For five of the Scholarships and the Exhibition—namely, (*a*), (*b*), (*c*), three Entrance Scholarships of the respective values of £75, £75, and £150; (*d*) Entrance Scholarship in Arts, £100; (*e*) Jeaffreson Exhibition, £50; and (*f*) Shuter Scholarship, £50—a full or University course at St. Bartholomew's Hospital is required. The awards of (*a*), (*b*), and (*c*) are made after examination in selections from the subjects of Chemistry, Physics, Zoology, Botany, Physiology, and Anatomy; (*d*) and (*e*) are awarded after examination in Latin, Mathematics, and Greek or French or German; (*f*) is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology. For the remaining Scholarships and prizes study at St. Bartholomew's Hospital is required. These remaining Scholarships and prizes, with the money value and the subjects of examination, are as follows:—Four Junior Scholarships: (*g*) No. 1, £30, Anatomy and Physiology; (*h*) No. 2, £20, Anatomy and Physiology; (*i*) No. 3, £25, Chemistry, Physics, and Biology; (*j*) No. 4, £15, Chemistry, Physics, and Biology; (*k*) Senior Scholarship, £50, Anatomy, Physiology, and Chemistry; (*l*) Kirkes Scholarship, £30 and medal, Clinical Medicine; (*m*) and (*n*) two Brackenbury Scholarships, £39 each, one in Medicine and one in Surgery; (*o*) Sir G. Burrow's Prize, £10, Pathology; (*p*) Skynner Prize, 13 guineas, Regional and Morbid Anatomy; (*q*) Matthews Duncan Medal and Prize, £20, Midwifery and Gynæcology; (*r*) Luther Holden Research Scholarship in Surgery, awarded by election, £105; and (*s*) Lawrence Research Scholarship and gold medal in Pathology, awarded by election, £115.

CHARING CROSS HOSPITAL.—This hospital and convalescent home contain 250 beds, a certain proportion of which are set aside for the diseases of children and those special to women. The number of patients treated during 1910 amounted to 26,146—viz., 2149 in-patients and 23,997 out-patients, of whom 10,608 were casualties. There were 76,049 out-patient attendances. The following are salaried hospital appointments. Clinical Pathologist and Bacteriologist, salary £200 per annum. Curator and Pathologist (annual), £100. Assistant Anæsthetist, £60. Medical and Surgical and Obstetrical Registrars (annual), £40 each. Resident Medical Officer (annual), £100, with board and residence. Six House Physicians, six House Surgeons, and two Resident Obstetric Officers, appointed each year on the recommendation of the committee after competitive examinations, are provided with board and residence in the hospital. Clinical clerks and dressers are appointed in all the general and special departments of the hospital. Arrangements can be made for students who have not entered for the entire curriculum to hold these posts. In the medical school demonstratorships and assistant demonstratorships in various subjects are open to students of the school and carry honoraria. Total fees, including students' club:—**For general students: Sessional payment system—Entrance fee, 10 guineas. In addition a sum of 25 guineas must be paid annually by University students; 22 guineas by Conjoint Board and other students. These fees may be paid in instalments at the beginning of the Winter and Summer Sessions. These fees may be paid in one sum on terms arranged by the Medical Committee. For Dental students: The fees for the two years' curriculum required by dental students may be paid: (*a*) in one sum of 45 guineas on entry; (*b*) in two annual instalments of 22 guineas each and entrance fee of 5 guineas. Scholarships are awarded annually to the value of £400, including two**

University Scholarships, value 30 guineas and 20 guineas respectively, Gold Medal, Huxley, Livingstone, Travers, and Pereira Prizes.

Advantage has been taken of the close proximity of King's College (University of London) to enable students to complete their primary and intermediate studies in the laboratories provided them for this purpose, in this way ensuring the widest and best possible range of teaching in these subjects.

Staff.—Consulting Physicians: Dr. Green, Dr. Bruce, and Dr. Abercrombie. Consulting Obstetric Physician: Dr. J. Watt Black. Physicians: Dr. Mott, Dr. Galloway, and Dr. Hunter. Physician with care of Out-patients: Dr. Bosanquet. Assistant Physicians: Dr. Fenton, Dr. Forsyth, and Dr. Jewesbury. Consulting Surgeons: Mr. Barwell, Mr. Bloxam, and Mr. Morgan, C.V.O. Surgeons: Mr. Boyd, Mr. Waterhouse, and Sir Frederick Wallis. Surgeon with care of Out-patients: Mr. Gibbs and Mr. Clogg. Assistant Surgeon: Mr. Daniel. Obstetric Physician: Dr. Amand Routh. Obstetric Physician with care of Out-patients: Dr. T. W. Eden. Physician for Diseases of the Skin: Dr. Galloway. Physician for Diseases of the Skin (Out-patients): Dr. MacLeod. Physician to the Electrical Department: Dr. Ironside Bruce. Surgeon for Nose, Throat, and Ear: Mr. Waggett. Ophthalmic Surgeon: Mr. Treacher Collins. Orthopædic Surgeon: Mr. Fairbank. Surgeon Dentist: Mr. J. F. Colyer. Physician for Mental Diseases: Dr. Mercier.

Lecturers: Winter Session.—Anatomy: Professor Waterston and Dr. Alexander Macphail. Bacteriology: Dr. W. W. C. Topley. Biology: Professor Arthur Dendy. Chemistry: Professor J. M. Thomson. Dental Surgery: Mr. J. F. Colyer. Medicine: Dr. James Galloway and Dr. F. W. Mott (Nervous Diseases). Ophthalmology: Mr. E. Treacher Collins. Physiology: Professor W. D. Halliburton. Practical Anæsthetics: Mr. C. Carter Braine. Practical Hygiene: Mr. Leathem and Dr. H. Forster Morley. Practical Medicine: Dr. Forsyth and Dr. Jewesbury. Diseases of Women: Dr. Amand Routh and Dr. T. W. Eden. Practical Midwifery: Dr. C. J. Lockyer and Dr. J. B. Bannister. Practical Surgery: Sir Frederick Wallis, Mr. H. S. Clogg, Mr. Peter Daniel, and Mr. Fairbank. Operative Surgery: Mr. Charles Gibbs. Psychological Medicine: Dr. Mercier. Surgery: Mr. H. F. Waterhouse and Sir Frederick Wallis. Tropical Medicine: Sir Patrick Manson, K.C.M.G.

Summer Session.—Anatomy: Professor Waterston and Dr. Alexander Macphail. Anæsthetics: Mr. C. Carter Braine. Dental Surgery: Mr. J. F. Colyer. Forensic Medicine: Dr. Brend. Materia Medica and Practical Pharmacy: Professor W. E. Dixon. Midwifery: Dr. T. W. Eden. Pathology: Dr. W. Hunter. Pharmacology and Therapeutics: Dr. Fenton. Practical Medicine: Dr. Forsyth and Dr. Jewesbury. Practical Physiology: Professor Halliburton. Public Health: Vacant by death of Dr. Bulstrode. Toxicology: Dr. H. Forster Morley. Roentgen Ray: Dr. Ironside Bruce. Dean of the Medical School: Dr. William Hunter.

Scholarships and Prizes.—At this school five Entrance Scholarships are awarded at the commencement of each Winter Session after examination in the following groups of subjects:—(1) English, including English Language and Literature, English History with alternative questions on the history of the British Empire, and Geography; (2) Latin and any one of the following three languages—Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry: with Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and any three of the following branches of Experimental Physics—Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. A candidate may offer himself for examination in not more than three of the above groups of subjects, but Group (1) must be one of the three. The designations, money value, and conditions of the Entrance Scholarships are as follows:—(*a*) Livingstone, 60 guineas, open to all general students; (*b*) Huxley, 60 guineas, for sons of medical men; (*c*) 30 guineas, for dental students; (*d*) and (*e*) 30 and 20 guineas respectively, open to all general students. The remaining scholarships and prizes are as follows:—(*f*) Epsom Scholarship, open to Epsom Foundation Scholars who have passed the Intermediate Examination for Medical Degrees of the University of London; (*g*) and (*h*) two Universities Scholarships awarded after examination in Anatomy and Physiology, including Histology, 30 and 20 guineas respectively; open to Oxford students who have passed the first M.B. Examination, or Cambridge students who have passed the second M.B. Examination, or London students who have passed the Intermediate Examination in Medicine and have not entered at any London Medical School; (*i*) Llewellyn Scholarship, awarded annually to the student of not more than five years' standing who has been most distinguished at the Prize Examinations in Medicine, Surgery, Midwifery, Pathology, Therapeutics, Forensic Medicine, Public Health, Psychological Medicine, Ophthalmology, and Gynæcology, £25; (*j*) Dr. T. H. Green Prize for Clinical Medicine, given annually for a special subject involving clinical observation in the wards or laboratory, 5 guineas; (*k*) Dr. William Travers Prize for the student in the fifth year who is most proficient in Obstetrics and Gynæcology, £15; and (*l*) John H. Morgan Prize, £10. The Pereira Prize, £4 4*s.*, for the best reports with commentary on six cases that have been in the wards of the hospital during the preceding 12 months, for Students who have attended the clinical teaching of the Hospital for at least 12 months.

ST. GEORGE'S HOSPITAL.—This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon. One ward is set apart for Diseases Peculiar to Women. Children's beds are placed in all the women's wards. Two wards are allotted to ophthalmic cases.

The Winter Session commences on Oct. 2nd but students can enter at any time or for any particular course. The Hospital and Medical School are situated at Hyde Park-corner and are readily accessible from all parts of London. At this school Entrance Scholarships and Endowed Prizes of a total value of £671 are awarded annually; a detailed list is placed below. As the scientific and clinical parts of the medical student's curriculum are entirely separate there is no longer any object in conducting the scientific courses upon hospital premises. The entire teaching and laboratories are therefore now devoted to purely clinical subjects, as in other universities, to the great advantage of students in their fourth and fifth years of study. Arrangements have been made with the University of London for students who enter during the first, second, or third year of the curriculum as students of St. George's to carry out the necessary courses of instruction at either University College or King's College. Students therefore have the unrivalled advantages of the lectures and practical classes of these Colleges of the University during the preliminary and intermediate portions of their studies, and then complete their course, without payment of any entrance fee, in a school entirely devoted to Clinical work. Students are permitted to enter the wards of the hospital at any hour. Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. Eight house physicians and eight house surgeons are appointed annually. All house appointments are open without fee to every perpetual student of the hospital and are made strictly in accordance with the merits of the candidates. Special attention is directed to the following paid appointments, among others, which are open to students after they have held house office:—Medical Registrarship at £200 per annum; Surgical Registrarship at £200; Curatorship of the Museum at £200; Assistant Curatorship at £100; Obstetric Assistantship (Resident) at £50; the post of Resident Anæsthetist at £100; the post of Senior Anæsthetist at £50; the posts (2) of Junior Anæsthetists, each at £30. Great attention is paid by members of the staff to individual teaching. A number of special courses are given in which the requirements of university and other examinations receive careful attention. The following may be cited as examples:—(1) Elementary Bacteriology; (2) Advanced Bacteriology; (3) Clinical Pathology; (4) Systematic Pathology; (5) Histological Pathology and Morbid Anatomy; (6) Pharmacology; (7) Surgical Anatomy; (8) Advanced Anatomy and Physiology; (9) Operative Surgery; (10) Public Health; and (11) Tropical Diseases. Special classes are held by members of the staff for all examinations. The St. George's Hospital Club, with smoking- and luncheon-rooms on the hospital premises, is an amalgamation of the Hunterian Society, the *Gazette*, and the chess, lawn tennis, boxing, hockey, rifle, and golf clubs. The club contributes also to the Æsculapian, Rugby football, and cricket clubs. Students have the advantage of a library of medical and scientific books which is kept up-to-date. A register of accredited apartments and a list of medical men and others willing to receive St. George's men

as boarders may be seen on application to the Dean. Further nformation may be obtained from the Dean of the Medical School.

Staff.—Consulting Physicians: Dr. W. H. Dickinson, Dr. T. T. Whipham, Sir Isambard Owen, and Dr. W. Ewart. Consulting Surgeons: Mr. Pick, Mr. Haward, Sir W. Bennett, and Mr. Marmaduke Sheild. Consulting Ophthalmic Surgeons: Mr. Brudenell Carter and Mr. Adams Frost. Consulting Aural Surgeon: Sir William Dalby. Consulting Dental Surgeon: Mr. Winterbottom. Physicians: Dr. H. D. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Obstetric Physician: Dr. W. R. Dakin. Assistant Physicians: Dr. Spriggs, Dr. Jex-Blake, and Dr. Golla. Assistant Obstetric Physician: Dr. A. F. Stabb. Physician to the Skin Department: Dr. W. S. Fox. Physician Anæsthetist: Sir Frederic Hewitt. Surgeons: Mr. C. T. Dent, Mr. G. R. Turner, Mr. F. Jaffrey, and Mr. Pendlebury. Ophthalmic Surgeon: Mr. H. B. Grimsdale. Assistant Ophthalmic Surgeon: Mr. R. R. James. Assistant Surgeons: Mr. T. Crisp English, Mr. W. F. Fedden, and Mr. I. Back. Surgeon to the Throat Department: Mr. H. S. Barwell. Aural Surgeon: Mr. W. C. Bull. Dental Surgeon: Mr. N. G. Bennett. Assistant Dental Surgeon: Mr. Morley.

Lecturers.—Baillie Lecturer in Physic: Dr. Howship Dickinson. Thomas Young Lecturer in Medicine: Sir William Osler. Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Principles and Practice of Physic: Dr. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Tropical Medicine: Dr. T. S. Kerr. Principles and Practice of Surgery: Mr. Dent, Mr. Turner, Mr. Jaffrey, and Mr. Pendlebury. Midwifery and Diseases of Women and Children: Dr. Dakin. Assistant Lecturer on Midwifery and Diseases of Women and Children: Dr. Stabb. Vaccination: Mr. E. Climson Greenwood. Insanity and Clinical Instructor in Insanity: Dr. Seymour Tuke. Ophthalmic Surgery: Mr. Grimsdale. Diseases of the Skin: Dr. Fox. Aural Surgery: Mr. Bull. Diseases of the Throat and Nose: Mr. Barwell. Dental Surgery: Mr. Norman Bennett. Assistant Lecturer on Dental Surgery: Mr. Morley. Practical Medicine: Dr. Jex-Blake. Practical Surgery: Mr. English. Operative Surgery: Mr. I. Back. Surgical Anatomy: Mr. Fedden. Edward Jenner Lecturer on Public Health: Mr. C. M. Fegen. Hygiene: Dr. H. Spitta. Forensic Medicine and Toxicology: Dr. Trevor. Toxicological Chemistry: Mr. Gardner. Pathological Chemistry: Dr. Spriggs. Pathology: Dr. Trevor. Bacteriology: Dr. Slater. Assistant Lecturer on Bacteriology and Lecturer on Clinical Pathology: Dr. Harold Spitta. Materia Medica and Therapeutics: Dr. Cyril Ogle. Pharmacology: Dr. Spriggs. Anæsthetics: Sir Frederic Hewitt, M.V.O. Teacher of Anæsthetics: Dr. Blumfeld. Assistant Teachers of Anæsthetics: Dr. Powell and Dr. Horne. Advanced Anatomy: Mr. Jaffrey. Advanced Physiology and Histology: Dr. Buckmaster. Advanced Chemistry and Pharmacological Chemistry: Mr. Gardner. Teacher of Skiagraphy: Dr. Simmons. Curator of the Museum: Dr. Trevor. Assistant Curator of the Museum and Demonstrator in Pathology: Dr. F. W. Higgs. Obstetric Tutor: Dr. G. F. Darwall Smith. Curator of the Peirse-Duncombe Laboratory: Dr. Harold Spitta. Demonstrator in Materia Medica: Dr. A. Manuel. Medical Tutor: Dr. J. A. Torrens. Surgical Tutor: Mr. C. Frankau. Dean of the Medical School: Dr. E. I. Spriggs.

Scholarships and Prizes.—At this school six entrance scholarships are given, the money value and the subjects of examination being as follows: (*a*) and (*b*), two in Arts, 50 guineas each, Latin or Greek, French or German, English, Mathematics; (*c*) and (*d*), two in Science, 50 guineas each, Chemistry, Physics, Zoology, and Botany; (*e*) and (*f*), two University Entrance Scholarships, 70 guineas and £50 respectively, Anatomy and Physiology. The others are as follows: (*g*) William Brown Exhibition, tenable for two years and open to perpetual pupils having registrable qualifications, £100 per annum, Practice of Medicine, Midwifery, and Surgery; (*h*) William Brown Exhibition, tenable for three years and open to perpetual pupils qualified not more than three years previously, £40 per annum, Essay and Original Work; (*i*) Allingham Scholarship in Surgery for students qualified not more than three years, £50, Competitive Essay; (*j*) and (*k*), two Brackenbury Prizes, one in Medicine and one in Surgery, £30 each, open to students of not more than five years' standing; (*l*) Treasurer's Prize for Proficiency in Clinical Examination of Cases and a written Examination in Medicine, Surgery, and Midwifery, £10 10*s.*; (*m*) H. C. Johnson Memorial Prize, £15, Practical Anatomy; (*n*) Pollock Prize, £17, Physiology, Physiological Chemistry, and Histology; (*o*) Clarke Prize, £5; (*p*) Thompson Medal, £7, Clinical Reports; (*q*) Brodie Prize, interest on £220, Clinical Reports; (*r*) Webb Prize, open to perpetual pupils, £30, Bacteriology.

GUY'S HOSPITAL.—This hospital, founded by Thomas Guy in 1721 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 618 beds.

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, ophthalmic house surgeons, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical and medical clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical council according to merit. The house physicians, of whom there are four, hold office for six months each. The out-patient officers, who hold office for three months, attend in the out-patient or casualty department during the week and see all the cases not seen by the assistant physician of the day. The house physicians have the care of the patients in the medical wards and attend to all emergencies arising in the absence of the physicians. They are provided with board and lodging in the college free of expense. The house surgeons, of whom there are four, hold office for six months each and are provided with board and lodging in the college free of expense. The Surgical Casualty Department is in charge of two assistant house surgeons and there are four out-patient officers appointed each three months. The surgeons' dressers are selected from those students who have completed their third winter session and have been most diligent in the junior appointments. They hold office for three or six months. Six are attached to each surgeon and during their weeks of special duty they are provided with board and lodging in the hospital free of expense. The college stands upon a site fronting the east gate of the hospital and is connected with it by a subway. The building serves as a Residential College for Students and at the same time provides accommodation for the Students' Club.

Medical and Surgical Staff.—Consulting Physicians: Sir Samuel Wilks, Bart., Dr. F. W. Pavy, Dr. P. H. Pye-Smith, Sir James F. Goodhart, Bart., and Dr. F. Taylor. Consulting Surgeons: Mr. Thomas Bryant, Sir H. G. Howse, Mr. W. H. A. Jacobson, Mr. R. C. Lucas, and Mr. Golding-Bird. Consulting Obstetric Physician: Dr. A. L. Galabin. Consulting Physician for Mental Diseases: Dr. G. H. Savage. Consulting Aural Surgeon: Mr. W. Laidlaw Purves. Consulting Anæsthetist: Mr. Tom Bird. Consulting Ophthalmic Surgeons: Mr. C. Higgens and Mr. W. A. Brailey. Consulting Dental Surgeons: Mr. Newland-Pedley and Mr. W. A. Maggs. Physicians and Assistant Physicians: Dr. W. Hale White, Dr. G. Newton Pitt, Sir Cooper Perry, Dr. L. E. Shaw, Dr. J. Fawcett, Dr. A. P. Beddard, Dr. H. S. French, Dr. A. F. Hertz, and Dr. H. C. Cameron. Surgeons and Assistant Surgeons: Mr. Charters J. Symonds, Mr. W. Arbuthnot Lane, Mr. L. A. Dunn, Sir Alfred Fripp, C.B., K.C.V.O., Mr. F. J. Steward, Mr. Fagge, Mr. R. P. Rowlands, Mr. Philip Turner, and Mr. E. C. Hughes. Obstetric Physicians: Mr. J. H. Targett and Mr. G. Bellingham Smith. Ophthalmic Surgeons: Mr. H. L. Eason and Mr. A. W. Ormond. Physician in Charge of Skin Department: Sir Cooper Perry. Physician in Charge of Nervous Diseases: Dr. Hertz. Physician in Charge of Children, Dr. Cameron. Physician for Mental Diseases: Dr. M. Craig. Surgeon in Charge of Throat Department: Mr. F. J. Steward. Surgeon in Charge of Aural Department: Mr. W. M. Mollison. Dental Surgeons: Mr. R. Wynne Rouw, Mr. H. L. Pillin, Mr. M. F. Hopson, and Mr. J. B. Parfitt. Anæsthetists: Mr. G. Rowell, Dr. H. F. Lancaster, Mr. C. J. Ogle, Dr. F. E. Shipway, Mr. H. M. Page, Mr. R. Davies-Colley, and Mr. T. B. Layton. Medical Registrars and Tutors: Dr. C. H. Rippmann and Mr. G. H. Hunt. Obstetric Assistant and Tutor: Mr. H. Chapple. Surgical Registrars and Tutors: Mr. V. Townrow and Mr. L. Bromley. Actino-Therapeutic Department: Dr. C. E. Iredell. Radiographers: Mr. E. W. H. Shenton,

Dr. A. E. Jordan, and Dr. C. J. Morton. Bacteriologist to the Hospital: Dr. J. W. H. Eyre. Surgeon in charge of Genito-Urinary Department: Mr. A. R. Thompson. Resident Surgical Officer: Mr. W. H. Trethowan. Hon. Librarian, Wills Library: Dr. H. S. French. Lying-in Charity: Mr. Targett and Mr. Bellingham Smith. Dean of the Medical School: Dr. H. L. Eason. Sub-Dean: Dr. H. C. Cameron. Warden of the College: Mr. W. M. Mollison, M.C.

Lecturers and Demonstrators.—Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Medicine: the Physicians. Practical Medicine: Dr. C. H. Rippmann and Dr. G. H. Hunt. Surgery: Mr. Symonds, Mr. Lane, Mr. Dunn, and Sir Alfred Fripp. Operative Surgery: Mr. R P. Rowlands and Mr. P. Turner. Practical Surgery: Mr. Townrow and Mr. Bromley. Midwifery and Diseases of Women: Mr. Targett and Mr. Bellingham Smith. Practical Obstetrics: Mr. Chapple. Mental Diseases: Dr. Craig. Ophthalmic Surgery: Mr. Eason. Dental Surgery: Mr. Wynne Rouw. Aural Surgery: Mr. Mollison. Diseases of the Skin: Sir Cooper Perry. Diseases of the Throat: Mr. Steward. Anæsthetics: Mr. Rowell. Hygiene and Public Health: Dr. R. King Brown. Pathology: Dr. A. E. Boycott. Gordon Lecturer on Experimental Pathology: Dr. Boycott. Morbid Anatomy: Dr. Fawcett, Dr. French, and Dr. Hertz. Morbid Histology and Bacteriology: Dr. Eyre and Dr. Boycott. Medical and Surgical Pathology Classes: Dr. Fawcett and Mr. Rowlands. Bacteriology: Dr. Eyre. Practical Bacteriology: Dr. Eyre. Forensic Medicine: Mr. Ryffel. Anatomy: Mr. Steward and Mr. Fagge. Practical Anatomy: Mr. Layton, Mr. Davies-Colley, and Mr. Saner. Physiology: Dr. Pembrey. Practical Physiology: Dr. Pembrey, Mr. J. H. Ryffel, B.C., and Mr. E. L. Kennaway, M.B., B.Ch. Materia Medica and Therapeutics: Dr. A. P. Beddard. Practical Pharmacy: the Hospital Pharmacist. Chemistry: Dr. Wade. Practical Chemistry: Dr. Wade, Mr. Ball, and Mr. Merriman. Experimental Physics: Dr. Fison and Mr. Merriman. Biology: Mr. Assheton, Mr. Reed, and Mr. Saner. Psychology: Dr. Craig.

Scholarships and Prizes.—For the first two scholarships in the list here given a course of study at Guy's Hospital is required; for all the others a perpetual course is required. There are five entrance scholarships, the money value, the conditions of eligibility, and the subjects of examination being as follows:—(*a*) and (*b*), two scholarships, one of £100 for students under 20 years of age and one of £50 for those under 25 years, Latin, English, Greek or French or German, Arithmetic, Euclid, and Algebra; (*c*) and (*d*). two scholarships for students under 25 years, £150 and £60 respectively; Chemistry, Biology, and Physics; (*e*) scholarship open to students under 25 years who have completed the curriculum for, or passed, the graduation examinations in Anatomy and Physiology in any university of the British Empire and have not entered as students in any Metropolitan Medical School, £50; (*f*) Hilton prize for senior students, £5, Dissections; (*g*), (*h*), and (*i*), three Junior General Proficiency Prizes, £20, £15, and £10 respectively, Anatomy, Histology, &c.; (*j*) Michael Harris Prize for second-year students, £10, Human Anatomy; (*k*) Sands Cox Scholarship for second-year students tenable for three years, £15 per annum, Physiology, Histology, &c.; (*l*) Wooldridge Memorial Prize for second-year students, £10, Physiology, Histology, &c.; (*m*) and (*n*), two Treasurer's Gold Medals, one for Clinical Medicine and one for Clinical Surgery open to senior students; (*o*) Golding-Bird Prize for senior students, £20 and Medal, Bacteriology; (*p*) Beaney Prize, £34, Pathology; (*q*) Gull Studentship tenable for three years awarded for research without competitive examination, £150 per annum, Pathology; (*r*) Beaney Scholarship tenable for three years awarded for research without competitive examination, £31 10*s*., Therapeutics; (*s*) Arthur Durham Travelling Studentship tenable for three years, £100; (*t*) Greville Research Scholarship, £200, Cancer Investigation; and (*u*) Oldham Prize in Ophthalmology, £30.

KING'S COLLEGE AND HOSPITAL.—On Sept. 1st, 1909, the Faculty of Medicine at King's College was divided into two parts. The first is concerned with Preliminary and Intermediate subjects and instruction on these is given in the College laboratories. This department is now designated Faculty of Science (Medical Division). The second deals with the Advanced or Final subjects of the curriculum, instruction on which is given at the hospital, the committee of management of which is now the governing body of King's College Hospital Medical School.

In the Faculty of Science (Medical Division) the following are the:—

Lecturers on Preliminary and Intermediate Subjects.—Anatomy: Dr. P. Thompson (Professor), Dr. C. J. Jenkins (Lecturer), and Mr. J. E. S. Frazer (Demonstrator). Physiology: Dr. W. D. Halliburton (Professor), Dr. H. W. Lyle (Lecturer), Dr. O Rosenheim (Lecturer on Chemical Physiology), and Dr. C. S. Myers (Lecturer on Experimental Psychology). Zoology: Dr. A. Dendy (Professor). Botany: Dr. W. B. Bottomley (Professor) and Mr. E. J. Schwartz (Demonstrator). Chemistry: Dr. J. M. Thomson (Professor), Mr. H. Jackson (Assistant Professor), and Mr. P. H. Kirkaldy (Lecturer). Physics: Dr. C. G. Barkla. Materia Medica and Pharmacology: Dr. W. E. Dixon (Professor).

Fees.—For London University Course: for Preliminary Scientific (Part I.), 25 guineas; for Preliminary Scientific (Part II.) and Intermediate M.B., 55 guineas, or two instalments of 30 guineas each. For Conjoint Board Course: for First examination, 20 guineas; for Second examination, 55 guineas, or two instalments of 30 guineas each. For prospectus and further information application should be made to Dr. P. Thompson, Dean of the department.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—The advanced or final subjects in the curriculum are dealt with at the Medical School attached to King's College Hospital. The hospital contains 224 beds. 3000 in-patients, 16,000 new out-patient cases, 40,600 casualties, and about 350 midwifery cases are attended yearly. The hospital contains special departments for diseases of women and children, and of the eye, ear, throat and nose, skin and teeth. There are special operation theatres for diseases of women, for eye, and for throat, nose, and ear cases. There is a clinical pathologist and a laboratory in the hospital where histological, bacteriological, hæmatological, and chemical investigations are carried out. In connexion with this is a vaccine department for the treatment of patients suffering from tuberculosis and other infective diseases. The appointments open to students are those of senior clinical assistant to the special departments; senior medical, surgical, and obstetric registrar; and Sambrooke medical and surgical registrars, all of whom receive salaries, as do the medical and surgical tutors. There are 14 resident medical and surgical officers appointed yearly and the usual six senior surgical dressers, medical and obstetric clinical clerks, surgical dressers, and clerks and dressers in all the special departments for in- and out-patients, and post-mortem clerks.

Hospital Staff.—Consulting Physicians: Dr. Alfred B. Duffin, Dr. I. Burney Yeo, and Sir David Ferrier. Consulting Surgeon: Lord Lister. Physicians: Dr. Nestor Tirard, Dr. Norman Dalton, Dr. Raymond Crawfurd, and Dr. Aldren Turner. Surgeons: Sir W. Watson Cheyne, Bart., Mr. A. B. Barrow, Mr. A. Carless, Mr. F. F. Burghard, Mr. G. L. Cheatle, and Dr. T. P. Legg. Assistant Physicians: Dr. Tunnicliffe Dr. J. C. Briscoe, and Dr. H. W. Wiltshire. Obstetric Physician: Dr. John Phillips. Assistant Obstetric Physician: Dr. Hugh Playfair. Physician for the Diseases of Children: Dr. George F. Still. Diseases of the Throat: Dr. StClair Thomson. Dental Surgeon: Mr. C. E. Wallis. Ophthalmic Surgeons: Mr. L. V. Cargill and Mr. H. Willoughby Lyle. Aural Surgeons: Mr. Arthur H. Cheatle and Dr. G. J. Jenkins. Physician for Diseases of the Skin: Dr. A. Whitfield. Pathological Registrar: Dr. Norman Dalton. Physician in charge of Electrical Department: Dr. W. Aldren Turner. Medical Officer in charge of X Ray Department: Mr. A. D. Reid. Anæsthetist and Instructor in Anæsthetics: Dr. J. F. W. Silk. Anæsthetist: Dr. G. B. Flux. Clinical Pathologist: Dr. Emery. Senior Medical Registrar and Tutor: Dr. H. W. Wiltshire. Senior Surgical Registrar and Tutor: Dr. T. Percy Legg. Obstetric Registrar and Tutor: Dr. E. L. Holland. Sambrooke Registrars: Mr. Arthur D. Griffith and Mr. H. E. Treadgold.

Lecturers on Final Subjects.—Medicine (Principles and Practice of): Dr. Nestor Tirard (Professor). Neuro-Pathology: Dr. W. A. Turner (Lecturer). Psychological Medicine: Dr. Steen (Professor). Surgery (Principles and Practice of): Mr. A. Carless (Professor). Surgery (Operative): Mr. F. F. Burghard (Teacher). Surgical Pathology: Mr. G. L. Cheatle (Teacher). Obstetric Medicine and Diseases of

Women and Children: Dr. John Phillips (Professor). Practical Obstetrics: Dr. Hugh Playfair (Lecturer). Diseases of Children: Dr. G. F. Still (Professor). Pathology: Dr. N. Dalton (Professor). Forensic Medicine: Dr. W. R. Smith (Professor). Hygiene: Dr. W. J. R. Simpson (Professor). State Medicine: Dr. Hewlett (Professor) and Mr. D. Somerville (Demonstrator). Bacteriology: Dr. Hewlett (Professor) and Dr. F. E. Taylor. Ophthalmic Surgery: Mr. L. V. Cargill. Aural Surgery: Mr. A. H. Cheatle (Lecturer). Dermatology: Dr. A. Whitfield (Professor). Anæsthetics: Dr. J. F. W. Silk. Dental Surgery: Mr. A. S. Underwood (Professor). Diseases of the Skin: Dr. A. Whitfield (Professor).

Fees.—The composition fee for Hospital work and Final subjects of the curriculum is 75 guineas in one sum, or 77 guineas if paid in two instalments, on entrance and on commencement of second year of study respectively. For information and prospectus application should be made to the Dean of the Hospital, or to Mr. Clifton Kelway, the Secretary of the Medical School, Portugal-street, W.C. For information regarding fees, curriculum, &c., in Public Health and Bacteriology application should be made to Professor Hewlett.

Athletics.—The King's College Hospital Clubs and Societies Union was formed in 1908 and consists of the Medical and Musical Societies, the Hospital Common Room, and the various athletic and sports clubs. Students' subscription is included in the fees mentioned above.

Scholarships and Prizes.—For the first two scholarships in the list here shown a perpetual course at King's College is required. The money value and subjects of examination are as follows:—(*a*) and (*b*) Two Warneford Scholarships, tenable for four years, £25 each per annum, Divinity, English History, Latin, Greek, French, German, and Mathematics; (*c*) Sambrooke Exhibition, £100, Mathematics, Physics, Inorganic Chemistry, Botany, and Zoology; (*d*) Rabbeth Scholarship, £20, Preliminary Scientific Subjects; (*e*) and (*f*) Two Science Exhibitions, open to students under 19 years of age and tenable for two years, £30 and £20 per annum respectively, Mathematics, Mechanics, Physics, &c.; (*g*) Medical Entrance Scholarship, £50, Anatomy and Physiology, open to students who (1) propose to take a degree at any British University and have passed the examination there in Biology, Chemistry, and Physics, and who (2) will become perpetual students at King's College from date of entering upon Scholarship; (*h*), (*i*), (*j*) and (*k*), Two Medical Entrance Exhibitions in Arts and two in Science, £50 each, tenable for five years, successful candidates to study at King's College and King's College Hospital; (*l*), (*m*), and (*n*), Three Medical Scholarships, £40 for fourth-year students, £20 for third-year students, and £20 for second-year students; (*o*) and (*p*), Two Sambrooke Registrarships, open to matriculated students who have filled certain appointments in hospitals, £50 each; (*q*) Daniel Scholarship, open to six-months' laboratory students, and tenable for two years, £20 per annum, Chemistry; (*r*) Carter Prize, £15, Botany; (*s*) Tanner Prize, £10, Obstetrics and Diseases of Women and Children; (*t*) Todd Prize, £4 4*s*. and medal, Clinical Medicine.

LONDON HOSPITAL.—The hospital has 922 beds in constant use and no beds are closed. It is the only general hospital for East London—i.e., for a million and a half people. In-patients last year, 15,257; out-patients, 222,822; accidents, 12,508; major operations, 5060. Owing to the enormous number of patients more appointments are open to students than at any other hospital. Resident accoucheurs, receiving-room officers, house physicians, house surgeons, emergency officers, pathological assistants, out-patient clinical assistants, senior dressers to out-patients, &c.: 137 of these qualified appointments are made annually and more than 150 dressers, clinical clerks, &c., appointed every three months. All are free to students of the College. Holders of resident appointments have free board. Special classes are held for the University of London, the Fellowship of the Royal College of Surgeons, and other higher examinations. Special entries for medical and surgical practice can be made. Lectures and classes are held throughout the year to suit the requirements of candidates desirous of obtaining the diploma in Public Health. The Lecturer on Public Health has his offices in the College, enabling the candidates to attend daily to work under his supervision. These courses are recognised both by the Universities of Oxford, Cambridge, London, &c., and by the Examining Board in England. A reduction is made from the fees to the sons of members of the profession. A Students' Hostel has recently been opened on the hospital ground. The Clubs Union Athletic Ground is within easy reach of the hospital. The Metropolitan and other railways have stations close to the hospital and the college.

Staff.—Consulting Physician: Dr. Hughlings Jackson. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. Couper, Mr. McCarthy, Sir Frederick Treves, Bart., Mr. Tay, Mr. Mansell Moullin, and Mr. Hurry Fenwick. Consulting Obstetric Physician: Dr. Herman. Consulting Dental Surgeon: Mr. Barrett. Consulting Aural Surgeon: Mr. Mark Hovell. Consulting Anæsthetist: Sir Frederic Hewitt. Physicians: Dr. Francis Warner, Dr. Percy Kidd, Dr. Frederick J. Smith, Dr. W. J. Hadley, Sir Bertrand Dawson, K.C.V.O., Dr. Henry Head, Dr. Robert Hutchison, and Dr. Lewis Smith. Assistant Physicians: Dr. Wall, Dr. Grünbaum, and Dr. Thompson. Surgeons: Sir Frederic Eve, Mr. J. Hutchinson, Mr. T. H. Openshaw, Mr. H. P. Dean, Mr. P. Furnivall, Mr. Rigby, and Mr. Sherren. Assistant Surgeons: Mr. Lett, Mr. Russell-Howard, Mr. R. Warren, Mr. Frank Kidd, and Mr. R. Milne. Obstetric Physicians: Dr. Lewers and Dr. Andrews. Physician to the Skin and Phototherapy Departments: Dr. Sequeira. Ophthalmic Surgeons: Mr. A. B. Roxburgh and Mr. W. T. Lister. Surgeon to the Throat Department: Dr. Lambert Lack. Aural Surgeon: Mr. Hunter Tod. Surgeon in charge of the Orthopædic Department: Mr. Openshaw. Medical Officer in charge of the Radiographic Department: Dr. Gilbert Scott. Medical Officer in charge of the Physico-Therapeutical and Tyrnauer Baths Departments: Dr. R. S. Woods. Analyst to the Hospital: Mr. Hugh Candy. Bacteriologist to the Hospital: Dr. W. Bulloch. Assistant Bacteriologist: Mr. P. Fildes. Pathological Institute: Dr. H. M. Turnbull, Director; Dr. G. B. Bartlett, Assistant Director. Clinical Pathologists: Dr. P. N. Panton; Assistant, Dr. H. L. Tidy. Dental Surgeons: Mr. H. Chapman, Mr. F. M. Farmer, Mr. G. Northcroft, Mr. G. P. Pollitt, Mr. E. C. Sprawson, and Mr. J. Sim Wallace. Anæsthetists: Dr. Probyn-Williams, Mr. Clapham, and Mr. Daly. Assistant Anæsthetists: Dr. Austin Cooper and Mr. Bligh Wall.

Lecturers.—Medicine: Dr. Hadley. Clinical Medicine the Physicians and Assistant Physicians. Cardiac Research: Dr. J. Mackenzie. Surgery: Mr. J. Hutchinson. Clinical Surgery: the Surgeons and Assistant Surgeons. Anatomy: Dr. Wright, Mr. R. Warren, Mr. R. Milne, Mr. A. J. Walton, and Mr. W. S. Perrin. Physiology and Histology: Dr. Leonard Hill, Dr. Martin Flack, Dr. Miller, and Mr. R. A. Rowlands. Chemistry: Mr. Hugh Candy and Mr. Twort. Physics: Dr. A. H. Fison and Mr. Griffith. Biology: Mr. G. P. Mudge and Mr. R. A. Buddicom. Pathology—General and Surgical: Dr. W. Bulloch. Special: Dr. H. M. Turnbull. Clinical: Dr. P. N. Panton. Midwifery and Diseases of Women: Dr. H. R. Andrews. Clinical Obstetrics: the Obstetric Physicians. Practical Obstetrics: Dr. R. D. Maxwell. Forensic Medicine—(1) Public Health: Dr. J. C. Thresh; and (2) Medical Jurisprudence and Toxicology: Dr. F. J. Smith. Public Health and Sanitary Science: Dr. W. Bulloch, Dr. J. C. Thresh, and Mr. Candy. Mental Diseases: Dr. J. Kennedy Will. Materia Medica, General Therapeutics, Pharmacology, and Practical Pharmacy: Dr. Francis Warner, Dr. Grünbaum, and Mr. F. A. Hocking. Ophthalmic Surgery: Mr. A. B. Roxburgh. Diseases of the Throat: Dr. Lambert Lack. Aural Surgery: Mr. Hunter Tod. Orthopædic Surgery: Mr. Openshaw. Foods and Dietetics: Dr. R. Hutchison. Operative Surgery: Mr. H. P. Dean. Demonstrators of Morbid Anatomy: Dr. F. J. Smith, Dr. W. J. H. Hadley, Dr. Grünbaum, Dr. Theodore Thompson, and Dr. C. H. Miller. Bacteriology: Dr. W. Bulloch and Dr. P. Fildes. Pathological Histology: Dr. W. Bulloch. Inoculation Department: Dr. J. T. Western and Dr. T. H. C. Benians. Anæsthetics: Dr. R. J. Probyn-Williams, Mr. Clapham, and Mr. Daly. Elementary Clinical Medicine: Dr. Grünbaum and Dr. Thompson. Medical Tutor: Dr. Thompson. Elemental Clinical Surgery: Mr. Howard and Mr. Warren. Surgical Tutor: Mr. Lett. Obstetric Tutor: Dr. R. D. Maxwell.

Sir Jonathan Hutchinson and Sir Frederick Treves, Bart., Emeritus Professors of Surgery, Mr. Hurry Fenwick, Emeritus Professor of Urology, and Sir Frederic Hewitt, Emeritus Lecturer on Anæsthetics, will give courses of

lectures during the year. The Schorstein Memorial Lectures in Clinical Medicine will be given on Oct. 3rd and Oct. 4th, at 4 P.M. by Dr. James Mackenzie, Lecturer on Cardiac Research to the Hospital. Dean: William Wright, M.B., D.Sc., F.R.C.S.

Scholarships and Prizes.—At this school the successful candidate for the first items in the list here shown must enter as a full student. The money value and subjects of examination are as follows:—(*a*) Price Scholarship £120; (*b*) and (*c*) two Entrance Scholarships, £60 and £35 respectively, subjects of Preliminary Scientific M.B. Examination at the University of London; (*d*) Epsom College Scholarship, free education, subjects of Preliminary Scientific Examination as above; (*e*) Price Scholarship, open to students of Oxford and Cambridge Universities, £60, Human Anatomy and Physiology; (*f*) and (*g*) two Buxton Scholarships, £30 and £20 respectively, subjects of Preliminary Examination in Arts; (*h*), (*i*), and (*j*) three Scholarships for Clinical Work, £20 each, Medicine, Surgery, and Obstetrics; (*k*) Sutton Prize, £20, Pathology; (*l*) Duckworth Nelson Prize, biennial, £10, Pathology, Practical Medicine, and Surgery; (*m*) Letheby Prizes (3), £30, Chemistry; (*n*) and (*o*) two Scholarships £25 in Anatomy and Physiology, £20 in Anatomy and Biology; (*p*), (*q*), (*r*), (*s*), (*t*), (*u*) seven Dressers' Prizes, amounting to £30, zeal, efficiency, and knowledge of Elementary and Minor Surgery; (*v*) Hutchinson Prize, triennial, £40, Clinical Surgery; (*w*) and (*x*) two Practical Anatomy Prizes, £6 and £4 respectively; (*y*) Andrew Clark Prize, biennial, £26, Clinical Medicine and Pathology; (*z*) James Anderson Prizes, £9, Clinical Medicine; (*a a*) Douro Hoare Prize, £5, Physiology; and (*b b*) Wynne Baxter Prize, £5 5*s*., Forensic Medicine.

Medical Research Funds.—Research Fund of £20,000 and the Eliza Ann Alston Endowment Fund for Medical Research provide valuable scholarships for men wishing to undertake research or desirous of preparing Theses for University degrees.

ST. MARY'S HOSPITAL.—301 beds, 31 of which are situated in the Clarence Wing and are devoted to cases requiring treatment by therapeutic inoculation. The number of in-patients treated during 1910 was 4318. The number of out-patients was 27,144 with 27,402 casualty cases, a total of 54,546. The situation of the hospital and Medical School in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it exceptionally convenient for students' rooms, a register of which is kept by the authorities for the use of students.

Laboratories, &c.—The Medical School provides for the entire curriculum. Special laboratories are in use for Biology, Chemistry, and Physics, a series of lecture theatres and laboratories for anatomy and physiology, and a spacious and well-lighted dissecting-room. The Pathological Department is under the direction of Sir Almroth Wright, F.R.S., and a block of consulting-rooms and laboratories in the New Wing of the Hospital has been equipped for the department of Therapeutic Inoculation to meet the increased amount of work in that department. During the past year 214 in-patients have received treatment in the department. A special laboratory is provided for the study of chemical pathology.

Appointments.—All clinical appointments in the hospital are free to students of the Medical School and the resident medical officers are chosen by competitive examination. Six house physicians, six house surgeons, four obstetric officers, and two Resident Medical Officers for the Inoculation Wards are appointed in each year and receive board and lodging in the hospital. Two resident anæsthetists are appointed in each year and receive a salary at the rate of £100 per annum, with board and lodging. Two casualty house surgeons are appointed in each year upon the same conditions. Several assistants in the department of Therapeutic Inoculation are appointed annually at salaries of £100 per annum and upwards, the total sum available for salaries of assistants in this department being £1600 per annum. In addition to the above, the senior appointments, medical and surgical registrar, casualty physician, demonstrator of anatomy, physiology, and biology are made annually.

Clubs, &c.—The amalgamated clubs include all the various athletic clubs, as well as the rifle club, medical society, &c There is a students' club on the Hospital premises, the membership of which is included in the amalgamated clubs. The athletic clubs' ground is situated at Park Royal, Acton, and is easy of access from the Medical School. It consists of Rugby and Association football grounds, tennis courts, and a large cricket pitch, and has a large and well-equipped pavilion.

Special Tuition.—In addition to systematic courses of lectures and demonstrations special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S.

Preliminary Scientific Course.—Special classes, including lectures and laboratory work, are held throughout the year under recognised teachers of the University of London.

The composition fee for full students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum or by payment of two annual instalments of 35 guineas (£36 15*s*.) and 30 guineas (£31 10*s*.) respectively. University students who have not completed their examination in Anatomy and Physiology pay an annual fee of 25 guineas (£26 5*s*.) until they have passed these examinations, and then pay the composition fee. Separate courses of lectures, laboratory work, or hospital practice may be taken. The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

Staff.—Consulting Physician: Dr. Lees. Consulting Surgeons: Mr. A. T. Norton, Mr. Edmund Owen, Mr. Herbert Page, Mr. A. J. Pepper, Mr. G. P. Field (Aural), Sir G. Anderson Critchett, Bart. (Ophthalmic), Sir Malcolm Morris (Skin), Mr. Morton Smale (Dental), and Dr. Scanes Spicer (Throat). Consulting Anæsthetist: Mr. Henry Davis. Physicians: Dr. Sidney Phillips, Dr. A. P. Luff, and Dr. Wilfred Harris. Surgeons: Mr. J. Ernest Lane, and Mr. Warren Low. Physicians in charge of Out-Patients: Sir John Broadbent, Bart., Dr. W. H. Willcox, and Dr. R. H. Miller. Surgeons in charge of Out-Patients: Mr. W. H. Clayton-Greene, Mr. Maynard Smith, and Mr. Fitzwilliams. Obstetric Surgeon: Dr. Montagu Handfield-Jones. Obstetric Surgeon in charge of Out-Patients: Dr. W. J. Gow. Physician in charge of Children's Department: Dr. Sidney Phillips. Ophthalmic Surgeon: Leslie Paton. Assistant Ophthalmic Surgeon: Mr. G. Coats. Physician to the Skin Department: Dr. Graham Little. Dental Surgeon: Mr. W. H. Dolamore. Surgeons to the Ear, Nose, and Throat Department: Dr. G. William Hill and Mr. C. I. Graham (assistant). Administrators of Anæsthetics: Dr. Blumfeld, Mr. Collum, and Mr. Henry Chaldecott. Director in Medical Charge of Inoculation Department: Sir Almroth Wright. Dean: Sir John Broadbent.

Lecturers.—Clinical Medicine: Dr. Sidney Phillips. Clinical Surgery: Mr. Ernest Lane. Medicine: Dr. A. P. Luff, Dr. Harris, and Sir John Broadbent. Surgery: Mr. V. Warren Low. Practical and Operative Surgery: Mr. Maynard Smith and Mr. Fitzwilliams. Pathology: Sir A. E. Wright and Dr. Spilsbury. Bacteriology: Sir A. E. Wright and Dr. Freeman (assistant lecturer). Pathological Chemistry: Dr. W. H. Willcox and Mr. J. Webster (demonstrator). Midwifery and Gynæcology: Dr. M. Handfield-Jones. Materia Medica and Therapeutics: Dr. R. H. Miller. Forensic Medicine: Dr. Willcox. Neurology: Dr. Harris. Descriptive and Surgical Anatomy: Mr. J. Ernest Frayer. Demonstrator: Mr. D. W. Daniels. Physiology and Histology: Dr. H. E. Roax and Dr. Ellison (demonstrator). Biology: Dr. W. G. Ridewood. Demonstrator: Mr. A. S. Horne. Chemistry: Dr. G. Senter and Mr. R. W. Davies (demonstrator). Physics: Mr. W. H. White. Hygiene and Public Health: Dr. W. H. Willcox. Mental Diseases: Dr. R. H. Cole. Diseases of the Eye: Mr. Leslie Paton. Diseases of the Ear, Nose, and Throat: Dr. G. William Hill and Mr. Graham. Diseases of the Skin: Dr. Graham Little. Dental Surgery: Mr. Dolamore. Medical Tutor: Dr. Willcox. Surgical Tutor: Mr. Clayton-Greene. Obstetric Tutor: Dr. T. G. Stevens. Medical Registrar: Mr. C. M. Wilson. Surgical Registrar: Mr. V. Z. Cope. Department for Nervous Diseases: Dr. Wilfred Harris. Practical Pharmacy: Mr. E. A. Andrews. School Secretary: Mr. B. E. Matthews.

Scholarships and Prizes.[1]—The money value and subjects of

[1] The number and value of Entrance Scholarships will be altered in September, 1912.

examination of these are as follows: (*a*), (*b*), (*c*), and (*d*), four Natural Science Scholarships awarded by competition in September, 1911, £145, £50, £50, and £25 respectively; (*e*) and (*f*), two University Scholarships open to students from any British University, £52 10*s*. each, Natural Science; (*g*) Epsom College Scholarship awarded by nomination, representing free tuition; (*h*) Gold Medal, £20, an Essay on Some Special Point in Clinical Medicine; (*i*) Dermatology Prize, awarded twice in each year, £5 5*s*.; (*j*) Meadows' Prize, awarded in alternate years, £8, Obstetrics; (*k*) nine Winter Session Prizes, £2 2*s*. each, subjects of the medical curriculum; and (*l*) nine Summer Session Prizes, £2 2*s*. each, subjects of the medical curriculum.

MIDDLESEX HOSPITAL.—The hospital contains 355 beds, which includes a special wing for patients suffering from cancer, consisting of five wards, containing 47 beds; here cancer patients are received and attended for a period limited only by the duration of their disease. The number of patients treated last year were: Out-patients, 54,240; in-patients, 5434. Cancer: Out-patients, 93; in-patients, 153.

The Hospital and Medical School are fully equipped for the theoretical and practical teaching of all the subjects included in the examinations in Medicine and Surgery in the United Kingdom and for the diploma in Public Health; and ample laboratory and class-room accommodation is provided for the teaching of the various subjects of the curriculum and for original research in Medicine, Pathology, and Bacteriology. A Maternity Ward in which students receive systematic instruction in Obstetric Medicine has recently been added to the hospital.

Special Classes are held to prepare students for the Second M.B. (Lond.) Examinations and for the Primary and Final Examinations for the diploma of F.R.C.S. Eng.

Attached to the Cancer Wing of the hospital is a special research laboratory and in connexion with this there are the Emden Cancer Research Scholarship, the Richard Hollins Research Scholarship, the Salters' Company Cancer Research Scholarship, and a Cancer Research Scholarship.

Hospital Appointments.—All hospital appointments are allotted to students without any extra fee. The following 18 resident appointments—six house physicians, six house surgeons, two obstetric house physicians, two casualty medical officers, and two casualty surgical officers—are annually filled from the pupils of the hospital, each appointment extending over six months.

A Residential College to accommodate a limited number of students adjoins the hospital. Breakfast, luncheon, and dinner are supplied in the College Hall at moderate charges.

The Amalgamated Students' Club includes the following: the Medical Society, the Common Room Society, the cricket club, the football clubs, the athletic clubs, the rowing club, the musical society, the chess club, the lawn tennis club, and the hockey club. The athletic ground, which is eight acres in extent, is situated within easy access at Park Royal. There is a gymnasium within the precincts of the Medical School.

Fees.—The Composition Fee for the entire curriculum is 135 guineas, or 145 guineas if paid in three instalments. The fee for London University students is 145 guineas; for those who have passed the First Examination for Medical Degrees 120 guineas. The fee for the Dental Curriculum is 54 guineas, or 60 guineas if paid in two instalments. Students who have completed the study of Anatomy and Physiology and passed First Examination for Medical Degrees are received on special terms.

Lecturers.—Winter Session: Anatomy: Dr. Cameron. Demonstrator: Dr. Gladstone. Embryology: Dr. Gladstone. Biology and Physiology: Mr. Goodall. Demonstrator: Mr. Earle. Chemistry: Dr. Kellas. Emeritus Lecturer in Medicine: Sir R. D. Powell, Bart., M.D. Medicine: Dr. Pasteur and Dr. Wynter. Practical Medicine: Dr. Voelcker. Emeritus Lecturer in Surgery: Sir Henry Morris, Bart. Surgery: Sir Alfred Pearce Gould, K.C.V.O., Mr. Bland-Sutton, and Mr. Murray. Practical Surgery: Mr. Kellock. Operative Surgery: Mr. Kellock. Practical Midwifery: Dr. Bonney. Pathology: Dr. Voelcker. Forensic Medicine and Toxicology: Dr. Wethered. Clinical Lectures in Medicine: The Physicians. Clinical Lectures in Surgery: The Surgeons. Clinical Lectures on Diseases of the Ear, Throat, and Nose: Mr. S. Hastings. Lectures in Ophthalmology: Mr. Lang. Lectures in Dental Surgery: Mr. Nowell. Public Health and Bacteriology: Mr. Foulerton. Summer Session: Pharmacology and Therapeutics: Dr. R. A. Young. Midwifery: Dr. Comyns Berkeley. Pathological Histology: Dr. Voelcker. Practical Toxicology: Dr. Kellas. Mental Diseases: Dr. Bond. Lectures in Dermatology: Dr. Pringle. Anatomy, Chemistry, and Physiology: as in Winter Session. Tutors—Medicine: Dr. Campbell Thomson; Surgery: Mr. Handley; Obstetrics: Dr. Taylor.

Staff.—Consulting Physicians: Dr. W. Cayley, Dr. Sidney Coupland, and Sir Richard Douglas Powell, Bart. Physicians: Sir James Kingston Fowler, K.C.V.O., Dr. W. Pasteur, and Dr. W. E. Wynter. Physicians to Out-patients: Dr. A. F. Voelcker, Dr. F. J. Wethered, Dr. H. Campbell Thomson (Dean of the Medical School), and Dr. R. A. Young. Consulting Physician to the Skin Department: Dr. R. Liveing. Physician to the Skin Department: Dr. J. J. Pringle. Consulting Obstetric Physician: Dr. W. Duncan. Obstetric Physician: Dr. Comyns Berkeley. Assistant Obstetric Physician: Dr. Victor Bonney. Consulting Surgeons: Sir Henry Morris, Bart., and Mr. Andrew Clark. Surgeons: Sir Alfred Pearce Gould, K.C.V.O., Mr. Bland-Sutton, and Mr. Murray. Surgeon to Out-patients: Mr. Kellock. Assistant Surgeons: Mr. W. S. Handley and Mr. Gordon Taylor. Ophthalmic Surgeon: Mr. W. Lang. Assistant Ophthalmic Surgeon: Mr. Arnold Lawson. Consulting Aural Surgeon: Mr. Stephen Paget. Aural Surgeon: Mr. Somerville Hastings. Consulting Dental Surgeon: Mr. W. Hern. Dental Surgeon: Mr. Nowell. Assistant Dental Surgeon: Mr. H. W. Turner. Curator of the Museum and Pathologist: Dr. Lakin. Registrars: Dr. MacCormac, Mr. Rowntree, Dr. F. E. Taylor, and Dr. E. Musgrave Woodman. Resident Medical Officer: Mr. A. E. Johnson. Anæsthetists: Mr. T. G. A. Burns, Mr. H. P. Noble, and Mr. H. Charles. Assistant Anæsthetist: Mr. R. E. Apperly.

Scholarships and Prizes.—Holders of the Entrance Scholarships are required to become general students of the school. The money value and subjects of examination are as follows: (*a*), (*b*), and (*c*), three Entrance Scholarships, £100, £50, and £25 respectively; (*d*) Entrance Scholarship for Students from the Universities of Oxford or Cambridge, £50, Anatomy and Physiology, including Histology; (*e*) Freer Lucas Scholarship for Students of Epsom College, on nomination of Headmaster, £126; (*f*) and (*g*), two Broderip Scholarships for Senior Students, £60 and £40 respectively, Clinical subjects; (*h*) Freeman Scholarship, £30, Obstetrics and Gynæcology; (*i*) Hetley Clinical Prize for Fifth-Year Students, £25; (*j*) John Murray Gold Medal and Scholarship, awarded every third year, £25, Theoretical and Practical Medicine; (*k*) Lyell Medal and Scholarship, £55 5*s*., Surgical Anatomy and Practical Surgery; (*l*) Leopold Hudson Prize, £11 11*s*., Surgical Pathology and Bacteriology; (*m*) second year's Exhibition, £10 10*s*., Anatomy and Physiology; (*n*) "Emden" Cancer Research Scholarship tenable for three years, £100; (*o*) Richard Hollins Research Scholarship, £105; (*p*) Salters' Company Cancer Research Scholarship, £100; and (*q*) Cancer Research Scholarship, £60.

ST. THOMAS'S HOSPITAL.—This hospital received its present charter from King Edward VI., but as a monastic institution was in existence prior to the year 1207. The building occupies a unique position by the river, opposite the Houses of Parliament, and contains 604 beds. The in-patients last year numbered 7316, whilst the number of attendances as out-patients, including the casualty and light departments, was 240,277. There are departments for the treatment of women, children, the eye, ear, nose and throat, skin, and teeth. Departments for light treatment, X rays, and physical exercises are also special features. Exceptional facilities are offered in the hospital laboratories for the study of general pathology, clinical pathology, and of treatment by serums and vaccines. Surgical operations take place in the main theatres every day except Saturdays at 2 P.M. Clinical teaching in the wards, out-patients' and special departments is available every day of the week. Clinical lectures are delivered every Wednesday during the sessions. All appointments in the hospital are open to students without extra fee. Casualty officers and resident anæsthetists, house physicians, house surgeons, obstetric house physicians, ophthalmic house surgeons, and out-patient officers are appointed and hold office for six months. They are provided with rooms and commons in the hospital free of expense. Clinical assistants to all the special departments are appointed every three months; they

are non-resident. A resident assistant physician and a resident assistant surgeon, at a salary of £100 each, are appointed biennially; also four hospital registrars (medical, surgical, obstetric, and ophthalmic), the two former receive a salary of £100 and the two latter £50. An assistant in the clinical laboratory, at a salary of £137 10*s*. per annum, and an assistant pathologist, at a salary of £137 10*s*. are from time to time appointed. Appointments open to students before qualification: Clinical clerks and dressers for in- and out-patients are selected from students who have completed their third year's work. The accident dressers are provided with board and lodging during their periods of special duty. Every student acts as clerk in the post-mortem room and in one of the pathological laboratories, takes his turn on maternity duty under proper supervision in the maternity ward, containing 20 beds, which affords students full facilities for maternity training (this obviates any necessity for seeking instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district), and is practically instructed in the administration of anæsthetics by one of the hospital anæsthetists. On completion of his term as clerk or dresser he is expected to fill appointments in one or more of the special departments. In their earlier years of study students are selected as assistants to the lecturers in the preliminary and intermediate subjects. The Medical School is fully equipped for the teaching of all subjects of the curriculum. A fine museum and large library are at the disposal of the students. There are three lecture theatres, an unusually large and well-ventilated dissecting-room, and special laboratories for biology, chemistry, physics, physiology, and pathology. The post-mortem room, where demonstrations are given every day, is ventilated by the electric fan and provided with cold storage. The Students' Club comprises a spacious restaurant and magnificent smoking and reading room. There is no occasion for students to leave the hospital buildings during working hours. The athletic ground of the Amalgamated Clubs at Chiswick is over nine acres in extent and is easily accessible from Waterloo Station. The curriculum is arranged to meet the requirements of all the Examining Bodies. Special classes are held for the examinations at the University of London and for the First and Final Fellowship Examinations of the Royal College of Surgeons of England. Tutorial classes in all subjects precede the various examinations. There is a special course for the Diploma in Public Health. The hospital is easily accessible from all parts. It is close to the Waterloo and Westminster Bridge Stations (L. & S.W., Bakerloo, and District Railways). Electric trams which pass the doors connect it with all parts of South London. A register of lodgings and a list of medical men and others who are willing to receive boarders is kept by the secretary, Mr. G. Q. Roberts, who will give any further information required.

Fees.—The annual composition fee is 30 guineas, covering all tutorial classes—in addition to a fee on entrance. Post-graduate study is afforded to qualified practitioners by a joint ticket which admits to the practice of 14 hospitals (general and special) on terms which may be ascertained from the secretary.

Staff.—Consulting Physicians: Dr. Harley and Dr. Sharkey. Consulting Surgeons: Mr. S. Jones and Mr. B. Pitts. Consulting Obstetrical Physician: Dr. Gervis. Consulting Ophthalmic Surgeons: Mr. Liebreich and Mr. Nettleship. Consulting Anæsthetist: Mr. W. Tyrrell. Consulting Dentist: Mr. C. E. Truman. Physicians: Dr. Acland, Dr. Hawkins, Dr. Mackenzie, Dr. Turney, and Dr. Perkins. Surgeons: Mr. G. H. Makins, C.B., Mr. Battle, Mr. Ballance, M.V.O., and Mr. Robinson. Physicians to Out-patients: Dr. Dr. Box, Dr. Russell, Dr. Buzzard, and Dr. Cassidy. Surgeons to Out-patients: Mr. Cuthbert S. Wallace, Mr. E. M. Corner, Mr. Percy W. G. Sargent, and Mr. C. A. R. Nitch. Obstetric Physician: Dr. Tate. Obstetric Physician to Out-patients: Dr. Fairbairn and Dr. Hedley. Ophthalmic Surgeons: Mr. Lawford and Mr. Fisher. Physician for Diseases of Children: Dr. Box. Surgeon for Diseases of Children: Mr. C. A. R. Nitch. Surgeon for Diseases of the Throat: Mr. W. G. Howarth. Physician for Diseases of the Skin: Dr. E. Stainer. Surgeon for Diseases of the Ear: Mr. Marriage. Dental Surgeon: Mr. R. McKay. Resident Assistant Physician: Dr. De Wesselow. Resident Assistant Surgeon: Mr. C. M. Page. Anæsthetists: Dr. H. Low, Dr. Bevan, Dr. Mennell, Dr. Hedley, and Dr. Howitt. Pharmaceutist: Mr. J. A. Jennings. Curator of Museum: Mr. S. G. Shattock. Director of Laboratories: Mr. L. S. Dudgeon. Superintendent of X Ray Department: Dr. Greg. Physical Exercise Department: Mr. R. Timberg.

Lecturers and Demonstrators.—Anatomy: Mr. F. G. Parsons and Dr. Wood-Jones. Chemistry: Dr. Le Sueur. Physiology: Dr. E. Mellanby and Dr. A. Mavrogordato. Biology: Mr. Cutting. Pathology and Bacteriology: Mr. Shattock and Mr. Dudgeon. Surgery: Mr. Battle and Mr. Robinson. Medicine: Dr. Sharkey and Dr. Mackenzie. Practical and Operative Surgery: Mr. Robinson, Mr. Wallace, and Mr. Corner. Comparative Anatomy: Mr. Parsons. Applied Anatomy: Dr. Box. Anæsthetics: Dr. Low. Physics: Mr. Brinkworth. Clinical Medicine: The Physicians. Clinical Surgery: The Surgeons. Midwifery and Diseases of Women: Dr. Tate and Dr. Fairbairn. Diseases of the Eye: Mr. Lawford and Mr. Fisher. Pharmacology and Therapeutics: Professor Dixon. Throat Disease: Mr. W. G. Howarth. Obstetrical Demonstrators: Dr. Fairbairn and Dr. Hedley. Practical Medicine: Dr. Perkins, Dr. Box, Dr. Russell, and Dr. Cassidy. Surgical Classes: Mr. Wallace, Mr. Corner, Mr. Sargent, Mr. Fisher, and Mr. Shattock. Forensic Medicine and Toxicology: Dr. E. Smith and Dr. Haas. Mental Diseases: Dr. R. Percy Smith. Public Health: Professor Simpson, C.M.G. Tropical Medicine: Dr. Sandwith. Instruction in Vaccination by Dr. Cope. Dean of the School: Dr. E. Stainer. Sub-Dean: Dr. C. R. Box. Secretary: Mr. G. Q. Roberts, from whom any further information may be obtained.

Scholarships and Prizes.—At this school there are five Entrance Scholarships—namely, two in Arts, equivalent to the tuition fees for the first medical examination; two in Natural Science of the value of £150 and £60 respectively, to be taken out in tuition fees; and the University Scholarship of £50 in Anatomy, Physiology, and Chemistry. The money value and subjects of examination of the remainder are as follows:—(*a*) and (*b*), two College Prizes, one for second-year students and one for third-year students, £10 and £5 respectively; (*c*) William Tite Scholarship for second-year students, £25; (*d*) and (*e*), Musgrove Scholarship or (alternately) Peacock Scholarship each for third-year students and tenable for two years, £35 each; (*f*) three College Prizes for fifth-year students of £10 each and three of £5 each; (*g*) Cheselden Medal, Surgery and Anatomy; (*h*) Mead Medal, Medicine, Pathology, and Hygiene; (*i*) Toller Prize, Medicine, Pathology, and Hygiene; (*j*) Bristowe Medal, Pathology and Morbid Anatomy; (*k*) Solly Medal and Prize, biennially, Surgical Reports; (*l*) Medal for the most distinguished fifth-year student; (*m*) Wainwright Prize, Medicine, Pathology, and Hygiene; (*n*) Hadden Prize, Pathology; (*o*) Beaney Scholarship, £50 biennially, Surgery and Surgical Pathology; (*p*) Sutton Sams Prize, biennially, reports of cases in Obstetric Medicine; (*q*) Grainger Testimonial Prize, £15, Anatomy and Physiology; (*r*) Salters' Company Research Fellowship, tenable for three years, £100 annually, Pharmacology; and (*s*) Louis Jenner Research Scholarship, tenable for two years, £60 annually, Pathology.

UNIVERSITY COLLEGE, LONDON.—University College has been constituted a University centre for the teaching of medical sciences. The College Faculty of Medical Sciences comprises the Departments of Physics, Chemistry, Botany, and Zoology (the Preliminary Medical Sciences); also the Departments of Anatomy, Physiology, and Pharmacology (the Intermediate Medical Sciences), and the Departments of Hygiene and Public Health and of Pathological Chemistry (Post-graduate Study).

Faculty of Medical Sciences.—Composition fees.—For the courses required by the University of London. 1. For the First Medical (Preliminary Scientific) Course, 26 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. 2. For the Second Medical (Intermediate) Course, 58 guineas if paid in one sum; 63 guineas if paid in two instalments of 32 guineas and 31 guineas respectively. This fee entitles to attendance on Anatomy and Physiology during three years and to one attendance on Organic and Applied Chemistry, Pharmacology, and Materia Medica, and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

For the medical education required by the Examining

Board in England and the Society of Apothecaries. First examination, Parts I., II., III., 21 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. First examination, Part IV., and second examination, 58 guineas if paid in one sum, and 63 guineas if paid in two instalments of 32 guineas and 31 guineas respectively. This fee entitles to attendance during three years and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

Professors and Lecturers.—1. First Medical (Preliminary Scientific) Course.—Chemistry:—Professor: Sir William Ramsay, K.C.B., F.R.S.; assistant professors: Samuel Smiles, D.Sc., N. T. M. Wilsmore, D.Sc., and R. W. Gray, Ph.D.; teachers of chemistry to medical students: R. H. Aders-Plimmer, D.Sc., and W. B. Tuck, D.Sc.; demonstrator: H. J. Page. Physics:—Professor: F. T. Trouton, F.R.S.; assistant professor: A. W. Porter, B.Sc.; assistants: N. Eumorfopoulos, B.Sc., A. O. Rankine, D.Sc., and D. O. Wood, B.Sc. Botany:—Professor: F. W. Oliver, M.A., D.Sc., F.R.S.; assistant professor: T. G. Hill, A.R.C.S. Zoology:—Professor: J. P. Hill, D.Sc.; assistants: W. N. F. Woodland, D.Sc., and C. H. O'Donoghue, B.Sc. 2. Second Medical (Intermediate) Course.—Anatomy:—Professor: G. D. Thane, LL.D.; assistant and curator of the museum: D. E. Derry, M.B., Ch.B.; demonstrators: H. T. Mant, M.S., F.R.C.S., and E. K. Martin, M.B., B.S., F.R.C.S.; assistant demonstrators: L. S. B. Tasker and G. B. King. Physiology:—Professor: E. H. Starling, M.D., F.R.S.; assistant professors: W. M. Bayliss, D.Sc., F.R.S., G. A. Buckmaster, M.D., and R. H. Aders-Plimmer, D.Sc. Pharmacology:—Professor: A. R. Cushny, M.D., F.R.S. Organic Chemistry:—Professor: J. N. Collie, F.R.S.; assistant professor: Samuel Smiles, D.Sc.

Scholarships and Prizes.—At University College the various exhibitions, prizes, medals, &c., which are given have a relation to medical study. The first three items on the present list require a complete intermediate course at University College. The money value and subjects of examination are as follows:—(*a*) The Bucknill Scholarship, 135 guineas; (*b*) and (*c*) two Entrance Exhibitions, 55 guineas each, Chemistry, Physics, Botany, and Zoology; (*d*) Cluff Memorial Prize, £15 biennially, Anatomy, Physiology, and Chemistry; (*e*) Schäfer Prize in Physiology, £18 triennially; (*f*) Sharpey Physiological Scholarship, £105, Biological Sciences; (*g*) Morris Bursary for sons of deceased professional men, by nomination, tenable for two years, £16 a year; and (*h*) five Gold and five Silver Medals awarded annually in various departments.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Dean: Raymond Johnson, B.S., F.R.C.S. Vice-Dean: G. F. Blacker, M.D., F.R.C.P., F.R.C.S. Secretary: L. R. Thomas. Fees for Preliminary and Intermediate Course: See under University College. For the Final M.B., B.S. (London) Course, 80 guineas if paid in one sum, 82 guineas if paid in two instalments, as follows—first year, 50 guineas; second year, 32 guineas. This fee entitles to attendance on Lectures and Hospital Practice during three years and to one attendance on Practical Pathology and Practical Surgery. Vaccination and attendance at a Fever Hospital are not included. Students who obtain a medical qualification within three years of the time of commencing this course are not required to pay an additional fee for further attendance. This course of instruction is also suitable for the corresponding examinations at the Universities of Oxford, Cambridge, and Durham, and for the medical education required by the Examining Board in England and the Society of Apothecaries.

There are over 300 beds in the hospital.

Special Departments, Clinical or Laboratory Facilities.—Those who are desirous of carrying out original research in Pathology, including Morbid Anatomy, Bacteriology, Experimental Pathology, and Chemical Pathology are admitted to work in the laboratories of the school by the Director of Pathological Studies and Research. A special course of instruction is given for preparation for the examinations for Diplomas in Public Health of the various universities and examining bodies; also special courses of Lectures and Demonstrations in Anæsthetics, Diseases of the Eye, Ear, Nose, and Throat, Skin, and Diseases of the Teeth, in Electrical and Radioscopic Diagnosis and Treatment, and in Clinical and Tropical Pathology. These courses are designed for senior students and graduates.

Appointments tenable by Students.—Clerkships and dresserships to the physicians, surgeons, anæsthetist, and pathologist are allotted amongst the students of the hospital. Maternity students are appointed each month and reside in the Students' House connected with the Medical School and Hospital. Eight house physicians and house surgeons, four senior and four junior obstetric assistants are selected annually by examination from among the senior students who have a medical qualification. The house physicians and house surgeons reside free in the hospital for six months, and the senior obstetric assistants for three months. In addition to these posts there are certain special appointments which are vacant from time to time and are filled by senior students of the hospital: 1. The Resident Medical Officer. This officer is appointed for a period of two years and is chosen from amongst the more senior recent residents of the hospital. 2. The Surgical Registrar is also chosen from among the more senior recent residents of the hospital. 3. The Obstetric Registrar. 4. A Casualty Medical Officer and a Casualty Surgical Officer are appointed, each for a period of six months. 5. Deputy Anæsthetists. During the absence of one or another of the Anæsthetists in the summer months a senior qualified student is appointed as a substitute and is granted a special certificate.

Museum of Pathological Anatomy.—The Museum, a spacious and well-lighted room, is open for study from 9 A.M. to 5 P.M. The collection is divided into three sections—medical, surgical, obstetrical and gynæcological. The surgical section is a particularly complete one and contains examples of every variety of surgical disease and injury. Diseases of the skin are well illustrated by a number of wax models which are conveniently displayed in glass cases. The obstetrical and gynæcological section is very complete. Microscopic sections of most of the specimens in the Museum have been prepared and are available for the use of students on application to the Curator. The Museum contains 1100 admirable paintings by Sir Robert Carswell and Sir Charles Bell and a collection of old surgical instruments formerly belonging to Robert Liston.

The Anatomical Museum of the University of London, University College, is open to all students of University College Hospital and Medical School on the recommendation of the School Committee.

The Medical Library is open daily for the purposes of study to every student of the Medical School from 9 A.M. to 5 P.M., Saturdays 9 A.M. to 1 P.M. It contains about 12,500 works on medical subjects, including all the current text-books and works of reference required for study or research.

The Medical Society of University College Hospital Medical School exists for the dual purpose (1) of promoting the study of Medical and Surgical Science, and (2) of promoting social intercourse among its members. All Students of the Medical School are eligible for membership. Meetings are held once a fortnight for the purpose of discussing subjects connected with the study of medicine and the allied sciences and for the exhibition of cases of pathological interest. One room in the Medical School is specially reserved as a Reading Room and is provided with current medical works and periodicals. The society also possesses an osteological and a pathological collection for the use of its members. In its social aspect the society includes various athletic clubs and has the management of three rooms on the ground floor of the Medical School, which are supplied with newspapers, magazines, writing materials, chess- and draught-boards, &c., solely for the use of its members. The society also superintends the commodious gymnasium of the Medical School. The Athletic Ground, which is used in conjunction with the Union Society of the University of London University College, is situated near the Great Western Railway station at Perivale and is within easy reach of the Hospital and School, about 35 minutes by train from Gower-street station. The following clubs are connected with the society: Cricket Club, Rugby Football Club, Association Football Club, Hockey Club, and Lawn-Tennis Club. The society also has the use of the College racquets and fives courts for its members. The affairs of the society are conducted by a committee elected annually by the members.

Residence of Students.—A register of boarding residences is kept in the office of the Medical School for the convenience of students; these residences are not under the control of the school authorities. The Students' House in University-street contains large and comfortable rooms. The

Maternity Students occupy them on payment of a moderate charge.

Private Instruction.—Gentlemen who desire assistance in their studies should consult the Dean, Professors, or Lecturers.

Hospital Staff.—Consulting Physicians: Sir William R. Gowers, Dr. H. C. Bastian, Sir John Williams, Bart., Dr. F. T. Roberts, and Sir Thomas Barlow, Bart. Physicians: Sir John Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, and Dr. F. J. Poynton. Assistant Physicians: Dr. C. Bolton and Dr. T. R. Elliott. Obstetric Physicians: Dr. H. R. Spencer and Dr. G. F. Blacker. Physician to Skin Department: Dr. A. M. H. Gray. Consulting Surgeons: Sir John Tweedy (Ophthalmic) and Sir Victor Horsley. Surgeons: Mr. A. E. Barker, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. Raymond Johnson. Assistant Surgeons: Mr. Wilfred Trotter and Mr. H. Morriston Davies. Ophthalmic Surgeons: Mr. Percy Flemming and Mr. J. H. Parsons. Professor and Lecturer on Public Health: Dr. Henry R. Kenwood. Dental Surgeons: Mr. Sidney Spokes and Mr. H. J. Relph. Anæsthetists: Dr. Dudley Buxton and Dr. H. J. Scharlieb. Assistant Anæsthetist: Dr. A. Beresford Kingsford. Surgical Registrar: Mr. G. E. O. Williams. Resident Medical Officer: Dr. E. M. Cowell, B.S., F.R.C.S. Pathologist: Mr. T. W. P. Lawrence. Officer in Charge of Electro-Radiographic Department: Mr. R. H. Cooper. Pharmacist: Mr. R. R. Bennett.

Teaching Staff.—Medicine—The Principles and Practice of Medicine: Dr. Sidney Martin. Clinical Medicine: Sir John Rose Bradford, Dr Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, Dr. F. J. Poynton, Dr. C. Bolton, and Dr. T. R. Elliott. Therapeutics: Dr. H. Batty Shaw. Surgery—The Principles and Practice of Surgery: Mr. Arthur E. J. Barker. Clinical Surgery: Mr. Arthur E. J. Barker, Mr. Rickman J. Godlee, Mr. Bilton Pollard, Mr. Raymond Johnson, Mr. Wilfred Trotter, and Mr. H. Morriston Davies. Practical Surgery: Mr. Raymond Johnson and Mr. H. Morriston Davies. Surgical Anatomy: Mr. H. T. Mant. Midwifery and Gynæcology—Dr. H. R. Spencer. Clinical Midwifery and Gynæcology: Dr. H. R. Spencer and Dr. G. F. Blacker. Diseases of Childhood: Dr. F. J. Poynton, Mr. Raymond Johnson, Mr. Percy Flemming, and Mr. Herbert Tilley. Pathology and Morbid Anatomy—General Pathology: Dr. Charles Bolton. Practical Pathology: Dr. F. H. Thiele, Mr. T. W. P. Lawrence, Mr. D. Embleton, and Mr. S. H. Warren. Laboratory and Special Instruction: Dr. Charles Bolton. Chemical Pathology and Clinical Pathology: Dr. F. H. Thiele. Museum of Pathological Anatomy and Post-mortem Examination: Mr. T. W. P. Lawrence. Forensic Medicine: Dr. F. J. Poynton. Diseases of the Eye—Ophthalmic Medicine and Surgery: Mr. Percy Flemming. Clinical Ophthalmology: Mr. Percy Flemming and Mr. J. Herbert Parsons. Diseases of the Ear and Throat: Mr. Herbert Tilley. Diseases of the Skin: Dr. A. M. H. Gray. Psychiatry: Mr. Bernard Hart. Dental Surgery: Mr. Sidney Spokes and Mr. H. J. Relph. Instruction in the Use of Anæsthetics: Dr. Dudley W. Buxton. Electro-radiographic Department: Mr. R. Higham Cooper. Practical Pharmacy: Mr. R. R. Bennett.

Scholarships and Prizes.—At this School the first two Scholarships (*a*) and (*b*) require a complete course at University College and University College Hospital Medical School; the second two (*c*) and (*d*) require a final course at the Medical School. The money value and subjects of examination are as follows:—(*a*) Entrance Scholarship, Bucknill, 135 guineas, Chemistry, Physics, Botany, and Zoology; (*b*) Epsom Free Medical Scholarship, subjects of Preliminary Scientific Examination and nomination by Epsom College; (*c*) and (*d*) two Entrance Exhibitions, 80 guineas each, Anatomy and Physiology; (*e*) Graham Scholarship in Pathology £200 per annum for two years, awarded by the Senate of the University of London; (*f*) Atkinson Morley Scholarship, tenable for three years, £45 per annum, Surgery; (*g*) Atchison Scholarship, tenable for two years, £55 per annum; (*h*) Filliter Exhibition, £30, Pathology; (*i*) Erichsen Prize, £10 10*s*., Practical Surgery; (*j*) two Senior and two Junior Fellowes Clinical Medals for Clinical Medicine; (*k*) two Liston Gold Medals for Clinical Surgery; (*l*) Alexander Bruce Gold Medal for Pathology and Surgery; and (*m*) Tuke Silver and Bronze Medals for Pathology.

WESTMINSTER HOSPITAL.—The hospital contains 215 beds and affords relief to upwards of 2000 in-patients and 30,000 out-patients annually. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædic practice, for Diseases of Women, for Diseases of Children, for Radiography, and for the Light Treatment. The Anatomical, Pathological, and Materia Medica Museums are open to all students of the school.

A medical and a surgical registrar, each with a salary of £50, are appointed annually. Two house physicians, three house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are provided with rooms and commons; also one assistant house physician and one assistant house surgeon with commons only. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students of the hospital.

By a scheme for the concentration of the teaching of the preliminary and intermediate subjects of the curriculum, which has the support of the London University, an arrangement has been made by the Westminster School for the teaching of these subjects at King's College. Students, however, join the Westminster Medical School as formerly and may compete for Entrance Scholarships as heretofore.

There is laboratory accommodation for practical work in Chemistry, Physics, Biology, Anatomy, Physiology, Histology, Pathology, and Bacteriology, and a new Clinical Laboratory has recently been erected. Facilities for research are afforded in all the laboratories.

For out-door recreation the following clubs exist: the Athletic Sports Club, the Cricket, Lawn Tennis, and Swimming Clubs, and the Rugby and Association Football Clubs. For in-door recreation there are the Students' Club, the Chess Club, and the Guthrie Society, the last-named being a debating club. These clubs and societies together constitute the Clubs Union, for membership of which students are not required to pay, the expense being covered by the entrance fee to the school.

Staff.—Consulting Medical Staff: Sir Bryan Donkin and Sir William H. Allchin. Consulting Surgical Staff: Mr. Richard Davy, Mr. G. Cowell, and Mr. N. C. Macnamara. Medical In-patient Staff: Dr. de Havilland Hall, Dr. W. Murrell, and Dr. R. G. Hebb. Obstetric Physician: Dr. G. H. Drummond Robinson. Surgical In-patient Staff: Mr. C. Stonham, Mr. W. G. Spencer, and Mr. A. H. Tubby. Medical Out-patient Staff: Dr. A. M. Gossage, Dr. Purves Stewart, Dr. Eric Macnamara, and Dr. Carmalt-Jones. Physician for Diseases of the Skin: Dr. T. Colcott Fox. Assistant Obstetric Physician: Dr. S. Dodd. Surgical Out-patient Staff: Mr. W. Turner, Mr. Arthur Evans, Mr. Rock Carling, and Mr. J. M. G. Swainson. Surgeon in Charge of the Throat Department: Mr. P. R. W. De Santi. Ophthalmic Surgeon: Mr. G. Hartridge. Surgeon in charge of the Orthopædic Department: Mr. A. H. Tubby. Surgeon in charge of the Ear Department: Mr. P. R. W. De Santi. Dental Surgeons: Mr. C. W. Glassington and Mr. E. Gardner. Administrators of Anæsthetics: Dr. N. W. Bourns and Dr. V. B. Orr. Assistant Anæsthetist: Dr. Cecil Hughes. Physician Pathologist: Dr. R. G. Hebb. Assistant Pathologist and Curator of Museum: Dr. J. A. Braxton Hicks. Medical Registrar: Dr. de Souza. Surgical Registrar: Mr. R. Farrant. Pharmacist: Mr. A. E. Tanner. Secretary: Mr. S. M. Quennell.

Lecturers.—Clinical Medicine: Sir William Allchin, Dr. Hall, Dr. Murrell, and Dr. Hebb. Clinical Surgery: Mr. Stonham, Mr. Spencer, and Mr. Tubby. Clinical Gynæcology: Dr. Drummond Robinson. Medicine: Dr. Murrell, Dr. Hebb, Dr. Gossage, Dr. Purves Stewart, Dr. Macnamara, Dr. Duncan, and Dr. Carmalt-Jones. Diseases of the Skin: Dr. Colcott Fox. Insanity: Dr. Stoddart. Surgery: Mr. Spencer. Ophthalmic Surgery: Mr. Hartridge. Surgery of the Throat and Nose: Mr. De Santi. Orthopædic Surgery: Mr. Tubby. Aural Surgery: Mr. De Santi. Dental Surgery: Mr. Glassington. Anæsthetics: Dr. Bourns. Operative Surgery: Mr. Turner. Surgical Anatomy: Mr. Arthur Evans. Practical Surgery: Mr. Rock Carling (Dean of the school) and Mr. Swainson. Surgical Pathology: Mr. Turner. Midwifery and Diseases of Women: Dr. Drummond Robinson. General Pathology and Morbid Anatomy: Dr. Hebb. Post-mortem Demonstrations: Dr. Hebb. Materia Medica, Therapeutics, and Pharmacology: Dr. Dixon. Demonstrator of Practical Pharmacy: Mr. A. E. Tanner. Forensic Medicine: Dr. Bernstein. Toxicology: Dr. H. Wilson Hake. Public

Health: Dr. S. Monckton Copeman. Bacteriology: Dr. Bernstein. Anatomy: Dr. Waterston. Demonstrators of Practical Anatomy: Mr. Ritson and Mr. Hickey. Physiology: Dr. Halliburton. Practical Physiology and Histology: Dr. Halliburton, Dr. Lyle, and Dr. Rosenheim. Biology: Dr. Bottomley and Dr. Dendy. Chemistry and Practical Chemistry: Dr. Thomson, Mr. Jackson, and Mr. Kirkaldy. Physics: Dr. Barkla, Dr. Allen, Mr. Nicol, and Dr. W. Wilson. Secretary and Librarian: Mr. W. Fryer.

Scholarships and Prizes.—The following Entrance Scholarships are offered for competition:—Winter Session: (*a*) Arts Scholarship, the "Guthrie," £60. (*b*) Science Scholarships: Natural Science Scholarship, £60; Chemistry and Physics Scholarship, £30; and Two Scholarships in Anatomy and Physiology, £50 each. (*c*) Epsom Scholarship: Free Medical education to a Foundation Scholar of Epsom College, or a Scholarship of 60 guineas to a pupil who has passed the First Examination of the University of London for Medical Degrees in July of the current year. The entrance fee is payable by the Epsom Scholar. The presentation entitles him to remission of five consecutive annual payments. Summer Session: The Governors' Scholarship, for Chemistry and Physics, £40; and Two Scholarships in Anatomy and Physiology, £50 each. During the period of study the following prizes may be competed for: Sturges Prize in Clinical Medicine, about £6, Notes of Cases; Clinical Surgery Prize, £5, Notes of Cases; Chadwick Prize, £21 in books or instruments, Medicine and Surgery, including Pathology and Applied Anatomy and Physiology; Frederic Bird Medal and Prize, open to Fourth-year Students, £14 in medal and books or instruments—Midwifery, Diseases of Women, Medicine, and Pathology; Abrahams Prize in Clinical Pathology, 5 guineas, a Paper and Tests in Practical Work; Alfred Hughes Memorial Prize, open to Second year Students, about £5 in books or instruments—Anatomy; Carter Gold Medal and Prize for Botany, open to Students of not more than three years' attendance, gold medal and books of the joint value of £15; Jelf Medal awarded to Third-year Students; Second-year Scholarship, £20, Elementary Anatomy, Physiology, Histology, and Organic Chemistry; Daniell Scholarship, tenable for two years, £20, Chemistry; Rabbeth Scholarship, open to First-year Students, £20, Class Examinations in the Preliminary Scientific Course; and the Sambrooke King's College Scholarship in Science, value £25.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—The fee for the medical course for the degrees of the University of London and for the diplomas of the Royal Colleges of England, after the completion of the First Medical Examination Course, is £135 in one sum, or £145 in four instalments. The fee for the First Medical classes is £25. The fee for the course for the University of Durham, the Society of Apothecaries, and the Conjoint Colleges of Scotland, including Elementary Science, is £140 in one sum, or £150 in four instalments.

The hospital contains 165 beds, of which 78 are reserved for surgical, 64 for medical, 13 for gynæcological, six for ophthalmic, and four for isolation cases. The number of in-patients treated during the past year was 2225. There is also a department for attending women in their confinements at their own homes. Students can also attend the in-patient and out-patient practice of the New Hospital for Women.

Special classes for the First Medical Examination of the University of London are held and special courses of instruction in Anatomy, Physiology, and Practical Pharmacology are provided for students preparing for the Second Medical Examination of the University of London.

Students after qualification can hold at the Royal Free Hospital the posts of house physician, house surgeon, obstetric assistants, clinical assistants, anæsthetists and assistant anæsthetist, medical and surgical registrars, medical electrician, and museum curator; and at the Medical School the posts of demonstrators in the departments of Anatomy, Physiology, Chemistry, and museum curator. They can also hold posts at the New Hospital for Women, which is officered entirely by medical women.

The School buildings have been entirely rebuilt in recent years and there are spacious, well-equipped laboratories, which afford every facility for efficiency of teaching and practical work in all departments.

There are residential chambers at 8, Hunter-street, with accommodation for 17 students, and the Secretary can be consulted on the subject of other residences for students. There is a Tennis Club with a gravel court at the School, and also hockey, boating, and other clubs.

Staff.—Consulting Physician: Dr. S. West. Physicians: Dr. Harrington Sainsbury, Dr. J. W. Carr, and Dr. A. G. Phear. Assistant Physicians: Dr. W. P. S. Branson and Dr. Langmead. Consulting Surgeons: Mr. W. Rose and Mr. A. B. Barrow. Surgeons: Mr. J. Berry, Mr. E. W. Roughton, and Mr. W. H. Evans. Assistant Surgeons: Mr. T. Percy Legg and Mr. Cunning. Consulting Neurologist: Dr. Farquhar Buzzard. Consulting Physician for Diseases of Women: Mrs. Scharlieb, M.S., M.D. Physician for Diseases of Women: Mrs. Vaughan-Sawyer, M.S., M.D. Assistant Physician for Diseases of Women: Mrs. Willey, M.S., M.D. Ophthalmic Surgeon: Mr. H. Work Dodd. Surgeon for Diseases of Throat, Nose, and Ear: Mr. E. W. Roughton. Surgeon for Diseases of Skin: Mr. W. H. Evans. Dental Surgeon: Mrs. Handley-Read, L.R.C.P. & S., L.D.S. Senior Resident Medical Officer: Mr. A. C. Sturdy. Registrars: Miss Haslam, M.D. Brux., L.S.A., and Miss Bolton, M.D., B.S. Anæsthetists: Mrs. Berry, M.D., B.S., and Miss Turnbull, M.D., B.S. Secretary: Mr. Reginald Garratt.

Lecturers.—At the School: Anatomy and Practical Anatomy: Mr. Parsons. Physiology and Practical Physiology: Miss Cullis, D.Sc. Chemistry: Miss C. de B. Evans, D.Sc. Practical Chemistry: Miss Widdows, B.Sc. Physics: Miss E. Stoney, M.A. Biology: Mr. Mudge, A.R.C.S. Pharmacology: Dr. R. H. P. Crawfurd. Practice of Medicine: Miss Cock, M.D., and Dr. J. W. Carr. Midwifery: Mrs. Scharlieb, M.S. Gynæcology: Mrs. Vaughan-Sawyer, M.D. Forensic Medicine: Dr. Hawthorne. Toxicology: Dr. Wilson Hake. Practice of Surgery: Mr. Roughton. Operative Surgery: Mr. Roughton. Ophthalmic Surgery: Mr. Percy Flemming. Pathology: Dr. W. d'Este Emery. Mental Pathology: Dr. Stoddart. Tropical Diseases: Sir Patrick Manson. Operative Midwifery: Miss McCall, M.D., Mrs. Vaughan-Sawyer, M.D., and Mrs. Willey, M.D., M.S. Demonstrators of Anatomy, Miss A. Seaton-Smith, M.D., B.S., and Miss M. A. Blair, M.D., B.S.; of Physiology, Mrs. Tribe B.Sc.; of Chemistry, Miss Laycock, B.Sc.; of Practical Pharmacology, Miss Buchanan, M.P.S. At the Royal Free Hospital: Clinical Medicine: Dr. Sainsbury and Dr. Carr. Clinical Surgery: Mr. Berry and Mr. Roughton. Clinical Obstetrics: Mrs. Willey, M.D., M.S. Pathology: Dr. Langmead. Bacteriology: Miss Chambers, M.D., B.S. Surgical Tutors: Mr. W. Evans, Mr. Legg, and Mr. Cunning. Medical Tutors: Dr. A. G. Phear and Dr. Branson. Demonstrator of Auscultation: Dr. Phear. Demonstrator of Practical Clinical Pathology: Miss Chambers, M.D., B.S. Practical Pathology: Miss G. Gazdar, M.B., B.S.

Dean of the School, Miss Cock, M.D.; Vice-Dean, Miss Aldrich-Blake, M.D., M.S.; Honorary Secretary, Dr. May Thorne; Secretary and Warden, Miss L. M. Brooks.

Scholarships and Prizes.—At this School candidates for the second item (*b*) on the following list must be (1) not more than 20 years of age on June 1st in the year of the examination; (2) resident in the Metropolitan Police district; (3) Matriculated Students of the University of London; and (4) in need of an Exhibition for the prosecution of their medical studies. The third item (*c*) is given as the result of an examination held by the University of London in June to a student who has passed the First or Second Medical Examinations of that University held in the previous July or the July following the examination. Candidates are expected to read for the M.B., B.S. degree of the University of London. The money value and subjects of examination are as follows: (*a*) Entrance Scholarship, £30, English, Latin, Arithmetic, Euclid, and Algebra; (*b*) St. Dunstan's Medical Exhibition, tenable for three years, extendible to five years, £60, English, Latin, Arithmetic, Euclid, and Algebra; (*c*) Bostock Scholarship, tenable for two or four years, and next to be awarded in June, 1915, £60; (*d*) Mabel Webb Research Scholarship, tenable for one year and renewable, £30, Physiology, Chemistry, or Pathology; (*e*) Fanny Butler Scholarship, tenable for four years; Candidates must be willing to work in connexion with the Church of England Zenana Missionary Society; next award in September, 1914, £14 10*s.*; (*f*) John Byron Bursary, tenable from two to four years, for students already in the School requiring assistance for the prosecution of their medical studies, application to the Secretary by March 31st; next

award in March, 1912, £20; (*g*) Helen Prideaux Scholarship, awarded every second year to a student who has become qualified during the two years immediately preceding the award, and to be spent in assisting the holder to further study, £40, Medicine, Surgery, Obstetric Medicine, and Pathology. Three Evans Prizes of £3 3*s*., £2 2*s*., and £1 1*s*. are given in alternate years on the results of the class examination in Midwifery, and a Durham Prize, value £5, is given in alternate years on the results of the class examination in Gynæcology, and a prize of £5 is awarded in alternate years on the results of the class examination in Midwifery and Gynæcology respectively. The Evans Prize for Operative Midwifery, value £5 5*s*., is awarded yearly. Prizes of £10 each are awarded yearly in Anatomy and Physiology. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help. Prizes and Certificates of Honour are awarded in each class at the end of the session.

UNIVERSITY OF DURHAM.

One Diploma, one Licence, and six degrees are conferred —viz., the Diploma in Public Health, the Licence in Dental Surgery, and the degrees of Bachelor of Medicine, Bachelor of Surgery, Master of Surgery, Doctor of Medicine, Bachelor of Hygiene, and Doctor of Hygiene. These degrees, Diploma, and Licence are open both to Men and Women.

For the degree of *Bachelor of Medicine* there are four professional examinations. The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics. The subjects of the Second Examination are—Anatomy and Physiology. The subjects for the Third Examination are—Materia Medica and Pharmacy, Pathology, Medical Jurisprudence, Public Health, and Pathology and Elementary Bacteriology. The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children.

It is required that at least one of the five years of professional education shall be spent in attendance at the University College of Medicine, Newcastle-upon-Tyne. Candidates who have passed the First and Second Examinations of the University will be exempt from First and Second Examinations of the Conjoint Board.

For the degree of *Bachelor of Surgery* every candidate must have passed the examination for the degree of Bachelor of Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Regional Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master of Surgery* candidates must not be less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Newcastle-upon-Tyne for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.S. They must also have obtained the degree of Bachelor of Surgery of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice. The subjects of examination are:—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor of Medicine* candidates must be not less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Newcastle-upon-Tyne for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.D. They must also have obtained the degree of Bachelor of Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must present an essay prepared entirely by himself, which must be typewritten, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the essay.

Doctor of Medicine (without residence).—The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under 40 years of age and shall have been in active practice for 15 years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, and Diseases of Women and Children, Pathology (Medical and Surgical), Anatomy (Medical and Surgical), Medical Jurisprudence, and Toxicology. The fee will be 50 guineas, of which 20 guineas will be retained if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees, diploma or licence, must give at least 28 days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-upon-Tyne. In the case of the M.D. (essay) examination candidates must send in their essays six weeks before the date of the examination.

Professors—Medicine: Sir G. H. Philipson, M.D., D.C.L. Surgery: J. Rutherford Morison, F.R.C.S. Physiology: F. A. Bainbridge, M.D. Anatomy: R. Howden, M.B. Midwifery: R. P. R. Lyle. M.D. Comparative Pathology: H. J. Hutchens, M R.C.S.

Scholarships and Prizes.—In connexion with this University the following scholarships and prizes are awarded:—(*a*), (*b*), (*c*), and (*d*), Four Scholarships of £25 a year each, tenable for four years; the examination will be the September Matriculation Examination. Candidates must take English, Latin, Arithmetic, Euclid, Algebra, Geography, English History, with Greek or German, or both. (See College Calendar for special books.) Open to candidates desirous of being admitted as Medical Students. The successful candidates must take out their entire curriculum at the University of Durham College of Medicine, Newcastle-upon-Tyne. (*e*) Pears Scholarship of £50 a year, tenable for three years; Matriculation Examination. —At the College of Medicine are: (*f*) Dickinson Scholarship, interest on £400 and gold medal; examination in Medicine, Surgery, Midwifery, and Pathology. Open to full students of the College of Medicine who have passed the third M.B. Examination. (*g*) Tulloch Scholarship, interest on £400; examination in Anatomy, Physiology, and Chemistry. No student is eligible who commenced his medical curriculum more than two academical years before the date of examination. (*h*) Charlton Memorial Scholarship, interest on £700; examination in Medicine. Open to full students of the College entered for the class on the Principles and Practice of Medicine. (*i*) Gibb Scholarship, interest on £500; awarded annually as a Scholarship in Pathology to full student who passes the best examination in that subject. No student is eligible after completion of his curriculum. (*j*) Luke Armstrong Memorial Scholarship, interest on £680: original essay on some subject in Comparative Pathology. (If no essay of sufficient merit be presented the scholarship may be awarded to the candidate who, in passing the first part of the Examination for the B.Hy. Degree, obtains the highest number of marks in Comparative Pathology during the year.) Open to all Graduates in Medicine or Hygiene and candidates for these degrees who have spent six months at the University and whose age does not exceed 30 years. (*k*) Stephen Scott Scholarship, interest on £1000; original essay on any Surgical subject. Open to any graduate in Medicine or Surgery of the University or any student of the College

of Medicine. Student's age must not exceed 30 years. (*l*) Heath Scholarship, interest on £4000. For 1912: Original Essay on Inflammations of Bone—excluding Tuberculous and Syphilitic. All Graduates in Medicine or Surgery of the University are eligible. (*m*) Gibson Prize, interest on £225; examination in subject of Midwifery and Diseases of Women and Children. Open to students who have attended one course of lectures on Midwifery and Diseases of Women and Children. (*n*) Turnbull Prize and Medal; examination in Surface Anatomy. Open to students at end of their second winter session.—At the Royal Infirmary is (*o*) Goyder Memorial Scholarship, interest on £325; awarded annually to student who most distinguishes himself in Clinical Medicine and Clinical Surgery at the Royal Infirmary.

Hygiene.—The regulations with regard to the degrees in Sanitary Science will be found under the section on Public Health.

Clinical Instruction.—THE COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—A new wing has been added to accommodate the departments of physiology and bacteriology. It also contains a students' gymnasium and a set of Students' Union rooms. The new Royal Victoria Infirmary, containing upwards of 400 beds, was opened by His late Majesty King Edward VII. in 1906. In the new infirmary adequate accommodation is provided for the study of the various special subjects, in addition to the ordinary clinical work. The following Scholarships and Prizes are awarded annually:—Four University of Durham Scholarships, value £25, tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Pears Scholarship, value £50 a year, tenable for three years (when vacant). The Dickinson Scholarship, value interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680, for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late Dr. George Yeoman Heath, President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year; the next award will be in 1912. The Gibson Prize, interest on £225, in the department of Midwifery and Diseases of Women and Children. The Turnbull Prize and Medal for Surface Anatomy. At the end of each session Prizes of Books are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

NEWCASTLE-UPON-TYNE ROYAL VICTORIA INFIRMARY.—This Infirmary was founded in 1751 but has been recently rebuilt, the new hospital being opened in 1906. The number of beds is 430. The number of in-patients annually is 8000 and of out-patients 100,000. The medical students of the University of Durham attend the practice of this hospital. Clinical Lectures are delivered by the Physicians and Surgeons weekly and ward demonstrations are given daily. Tutorial classes are held by the Assistant Physicians and Assistant Surgeons weekly, and demonstrations are given in the several out-patient departments daily. Pathological demonstrations are given by the Pathologist daily or as opportunity occurs, and in the new buildings nothing has been spared in perfecting scientific equipment. In addition to medical and surgical in-patient and out-patient departments the following special departments are fully equipped for teaching students: Ophthalmic, Throat and Ear, Skin, Orthopædic, Gynæcological, Electrical, and Bacteriological. The hospital building contains the following laboratories: 1. Special Pathological Laboratory, attached to the post-mortem rooms. 2. Bacteriological Laboratory, in which all clinical bacteriological investigations are carried out—opsonic indices estimated with a view to treatment by vaccines and serums, &c. 3. There is in addition a Clinical Laboratory attached to each ward and to the out-patient department. There are five operating theatres in use in the hospital, three large theatres, a smaller one for emergencies, and an out-patient theatre. The surgical practice is especially good; more than 8000 surgical operations were performed in the last 12 months. Every facility is given to students to take out the full or any part of the hospital curriculum, and clerkships or assistantships in any of the several special departments are open to undergraduates or graduates for periods of from one to three months. There are 12 resident medical and surgical officers, three of whom are paid, and preference for these appointments is given to students who have fulfilled their curriculum in the hospital. The sessions open on April 19th and Oct. 2nd of each year. Applications for detailed information should be made to the Dean, Dr. W. E. Hume, at the hospital. The following is the staff of the hospital:—Physicians: Dr. David Drummond, Sir Thomas Oliver, Dr. T. Beattie, and Dr. W. E. Hume. Assistant Physicians: Dr. Horsley Drummond, Dr. Alfred Parkin, Dr. George Hall, and Dr. T. M. Allison. Surgeons: Mr. J. Rutherford Morison, Mr. A. M. Martin, Mr. H. B. Angus, and Mr. J. V. W. Rutherford. Assistant Surgeons: Mr. W. G. Richardson, Mr. J. W. Leech, Mr. John Clay, and Mr. G. G. Turner. Ophthalmic Surgeon: Mr. J. D. Wardale. Assistant Surgeon: Mr. T. Gowans. Throat and Ear Department: Surgeon: Mr. S. S. Whillis. Assistant Surgeon: Mr. W. F. Wilson. Gynæcological Department: Dr. R P. R. Lyle. Skin Department: Physician: Dr. Robert A. Bolam; Assistant Physician: Dr. D. W. Patterson. Orthopædic Department: Mr. A. M. Martin. Electrical Department: Dr. W. D. Arnison. Pathologist: Dr. Stuart McDonald. Assistant Pathologist: Mr. W. T. Sewell. Bacteriologist: Dr. H. J. Slade. Pathological and Analytical Chemist: Mr. P. P. Bedson, D.Sc. Anæsthetists: Dr. F. G. Armstrong, Dr. W. J. Phillips, Dr. H. H. Markham, and Dr. W. Seymour. Medical Registrars: Miss H. Gurney and Dr. T. C. Hunter. Surgical Registrars: Mr. J. W. Heslop, Mr. J. C. Stewart, Mr. R. J. Willan, Mr. Hamilton Drummond, and Mr. F. C. Pybus.

There are other institutions at which the student of medicine of the University of Durham can receive clinical instruction. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth. A special course of instruction is given in the City Hospital for Infectious Diseases by the Superintendent, the City Officer of Health, Dr. H. E. Armstrong.

NORTHUMBERLAND, DURHAM, AND NEWCASTLE INFIRMARY FOR DISEASES OF THE EYE, St. Mary's-place, Newcastle-on-Tyne.—Consulting Surgeon: Dr. F. Page. Staff Surgeons: Mr. A. S. Percival and Mr. H. P. Bennett. Assistant Surgeons: Dr. Stanley Robson. Honorary Anæsthetists: Dr. O. W. Ogden and Dr. T. H. Livingstone. House Surgeon: Dr. A. R. Gunn. **Matron**: Miss C. Crump. Secretary: Mr. Richard Smith, 61, Westgate-road, Newcastle-on-Tyne. Out-patients for 1910, 7859; in-patients, 314.

UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., Ch.B., M.D., Ch.M., and also a degree and a diploma in Public Health. The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Elementary Biology. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognised by the University. The students of the Medical Faculty can be members of the University Club, the University Athletic Club, and the University Officers' Training Corps, while they possess a guild—the Guild of Undergraduates—which is designed to be a recognised medium of communication between the teachers and the taught. The University Medical Society and the Dental Students' Society also offer opportunities of coöperation for mutual benefit.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—The student must have passed either the Matriculation Examination of the University or one of the following

examinations. For the present the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of medical students, provided always that such examination shall have included the subjects of English, Latin, Mathematics, and any one of the following: Greek, French, German, or any other modern foreign language, together with Chemistry or Experimental Mechanics, or some other branch of Experimental Physics, and that all the subjects have been passed at one examination: (*a*) the previous examination of the University of Cambridge; (*b*) Responsions of the University of Oxford; (*c*) the Preliminary or Matriculation Examination of a recognised University; (*d*) the (Higher) Certificate of the Oxford and Cambridge Examinations Board; (*e*) the Oxford or Cambridge Senior Local Examination. A Matriculation Examination will commence on Sept. 11th, 1911. First Examination.—Chemistry and Physics and Elementary Biology. Second Examination.—Anatomy and Physiology. Third Examination.—Pathology and Bacteriology, Materia Medica and Practical Pharmacy. Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, Public Health, and Therapeutics. Two years' hospital work must have been accomplished. Final Examination.—Medicine, Surgery, Midwifery, Diseases of Women, Mental Diseases, and Ophthalmology. Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital and lunatic asylum. Vaccination instruction must be taken out and courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

Degrees of Doctor of Medicine and Master of Surgery.—At the end of one year from the date of having passed the final M.B., Ch.B. examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these degrees will be required to comply with the following regulations. Every candidate for the degree of M.D. shall present a thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations.

A thesis may be presented in any of the following departments of study: (*a*) Anatomy, including Comparative Anatomy, (*b*) Physiology, (*c*) Human or Comparative Pathology, (*d*) Bacteriology, (*e*) Pharmacology, (*f*) Therapeutics, (*g*) Medicine, (*h*) Mental Diseases, (*i*) Preventive Medicine or Public Health, (*j*) Toxicology, (*k*) Legal Medicine, (*l*) Midwifery.

Candidates for the degree of Ch.M. are required to comply with the following regulations:—At the end of one year from the date of having passed the final M.B., Ch.B. Examination candidates will be eligible to present themselves for the higher degree of Master of Surgery. Candidates for this degree will be required to comply with the following regulations: 1. Every candidate shall present a thesis, embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below; in addition the candidates will be required to pass a general examination in Principles and Practice of Surgery and to perform operations on the cadaver. 2. It will be in the power of the board of examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. 3. The candidate may be examined in that department of the medical curriculum from which the subject of his thesis is chosen and the examiners may require to see the notes of original observations on which the thesis is based, (*a*) Surgery, (*b*) Pathology, (*c*) Bacteriology, (*d*) Gynæcology, (*e*) Ophthalmology.

Degree in Public Health.—For the regulations for this degree and for the diploma in the same subject see p. 641.

Fees.—Matriculation, £2; First Examination, £2; Second Examination, £2; Third Examination, £2; Fourth Examination, £2; Final Examination, £8; M.D. or Ch.M., £10.

Professors—Physics: J. H. Poynting, Sc.D., F.R.S. Chemistry: P. H. Frankland, Ph.D., F.R.S. Elementary Biology: F. W. Gamble, D.Sc., F.R.S. Medicine: R. Saundby, M.D., and A. H. Carter, M.D. Surgery: G. Barling, F.R.C.S., and Jordan Lloyd, F.R.C.S. Anatomy: Peter Thompson, M.D. Physiology: E. W. Wace Carlier, M.D. Therapeutics: Sir R. M. Simon, M.D. Forensic Medicine: J. T. J. Morrison, F.R.C.S. Hygiene and Public Health: A. Bostock Hill, M.D. Midwifery: E. Malins, M.D. Diseases of Women: Thomas Wilson, Ch.M., M.D., F.R.C.S. Pathology: R. F. C. Leith, F.R.C.P. Edin. Lunacy and Mental Disease: (Vacant.) Ophthalmology: Priestley Smith, F.R.C.S.

At the University of Birmingham the following Scholarships are awarded:—(*a*) Myers Travelling Studentship of £150, tenable for one year, awarded by vote of committee to M.B., Ch.B. Birm., B.Sc. candidates, tenable at one of certain German universities; (*b*) Ingleby Scholarship of £10, tenable for one year, awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of Midwifery and Disease of Women; (*c*) Sydenham Scholarship of £42, tenable for three years, award of Council to orphan sons of medical practitioners; (*d*) Sands Cox Scholarship of £42, tenable for three years, awarded to the candidate, not being more than 19 years of age, taking the highest marks at the July Matriculation; (*e*) Dental Scholarship of £37 10*s*., Open Competitive Examination in subjects learned during apprenticeship; (*f*), (*g*), (*h*), and (*i*) Four Queen's Scholarships of £10 10*s*. each, awarded to candidates taking highest "first-class" marks at Second, Third, Fourth, and Final M.B. Examinations; (*j*) George Henry Marshall Scholarship of £10, awarded annually, for the encouragement of Research Work in Ophthalmology; and (*k*) Russell Memorial Prize, a prize of books, value about £2, awarded annually to the student who, not being of more than six years' standing as a student of the School of Medicine of the University, shall pass the best examination in the subject of Nervous Diseases.

Clinical Instruction.—The medical students of the University receive their clinical instruction by attending the amalgamated practice of the General Hospital and the Queen's Hospital, details of which follow.

The clinical instruction of the Birmingham medical students is carried on under the direction of the University Clinical Board. The hospitals present an excellent field for clinical work, possessing more than 500 beds, treating annually 8000 in-patients and 100,000 out-patients. The students spend part of their curriculum in each hospital, and thus have every opportunity of acquiring a varied, full, and practical knowledge of their professional work. The curriculum is adapted in the first place to meet the needs of the students of the University of Birmingham, but it is also well adapted to the requirements of students preparing for the examinations of all other universities and licensing bodies. At the General Hospital there are open to the students the following appointments: A resident medical officer, elected annually (£100); a resident surgical officer, elected annually and eligible for re-election for three years (£100); a resident pathologist, elected for six months (£50); three surgical casualty officers, elected annually and eligible for re-election (£50); three house physicians and four house surgeons hold office for six months, receiving board, residence, and salaries at the rate of £50 a year; one house surgeon to the gynæcological, ophthalmic, and aural departments is elected every six months, receiving board, residence, and a salary of £50 a year; two assistant house surgeons are elected every three months, receiving board, residence, and salaries at the rate of £40 a year; a resident medical officer at the Jaffray Hospital, who is elected annually but is eligible for re-election, and who receives £150 a year; and a resident medical assistant at this hospital, who is not necessarily qualified, is provided with board and residence, and holds office for three months. At the Queen's Hospital there are open to the student the following appointments: Three house physicians, three house surgeons, and one obstetric and ophthalmic house surgeon, who hold office for six months and have salaries at the rate of £50 a year. Thirty-eight other appointments of varying value are at the City Workhouse and Workhouse Infirmary, at the Birmingham General and Branch Dispensaries, at the Birmingham Lunatic Asylums, at the City Fever Hospitals, at the Children's Hospital, at the Birmingham and Midland Eye Hospital, at the Orthopædic and Spinal Hospital, at the Maternity Hospital, and at the Ear and Throat Hospital.

THE BIRMINGHAM GENERAL HOSPITAL.—The General Hospital contains 342 beds, and of these 327 are in daily use, upwards of 5500 in-patients passing through the wards yearly. There are special wards for children, for gynæcological, septic and infectious cases, and special beds are reserved for eye, ear, and skin cases. Some

62,500 out-patients are treated there annually. The post-mortem department is in a separate building. It consists of a mortuary with a small viewing room, a post-mortem room proper, and laboratories for bacteriology and morbid histology. In addition there are separate rooms in the main building, adjoining the various medical and surgical wards, for clinical pathology and these are under the direction of special officers. There are four operating theatres, all designed and fitted on the most modern lines. In connexion with the hospital is the Jaffray Suburban Hospital of 56 beds at Gravelly Hill. The arrangements for clinical teaching at this hospital are very thorough. In addition to the clinical teaching given in the wards and out-patient department by the honorary staff medical and surgical tutorial classes are held for senior and junior students, while clinical instruction is given in all the special departments by the gentlemen in charge of them.

Staff of General Hospital.—Consulting Physician: Lord Ilkeston. Consulting Obstetric Officer: Dr. Edward Malins. Physicians: Dr. Robert Saundby, Sir Robert M. Simon, Dr. T. Stacey Wilson, and Dr. T. Sydney Short. Surgeons: Sir Thomas F. Chavasse, Mr. Gilbert Barling, Mr. William F. Haslam, and Mr. George Heaton. Obstetric Physician: Dr. Thomas Wilson. Ophthalmic Surgeon: Dr. D. C. Lloyd-Owen. Aural Surgeon and Laryngologist: Dr. F. W. Foxcroft. Physician in Charge of Skin Department: Dr. A. Douglas Heath. Assistant Physicians: Dr. James W. Russell and Dr. A. Stanley Barnes. Dr. William H. Wynn and Dr. J. E. H. Sawyer. Assistant Surgeons: Mr. Albert Lucas, Mr. Leonard P. Gamgee, Mr. Frank Barnes, and Mr. Seymour Barling. Assistant Obstetric Officer: Mr. H. B. Whitehouse. Visiting Pathologist: Dr. J. C. Sholto Douglas. Anæsthetists: Dr. Sydney Haynes, Dr. W. J. McCardie, and Mr. R. H. R. Whitaker. Surgical Photographers and Radiographers: Mr. J. Hall-Edwards and Mr. F. Emrys-Jones. Dental Surgeon: Mr. A. T. Hilder.

THE QUEEN'S HOSPITAL.—Similar arrangements for clinical teaching are made here, and the material also is excellent. Ward and tutorial classes are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons. There are also special departments for gynæcology and ophthalmology.

Staff of Queen's Hospital.—Consulting Physicians: Sir James Sawyer, Dr. C. W. Suckling, and Dr. A. H. Carter. Consulting Surgeons: Mr. Frank Marsh and Mr. Bennett May. Consulting Ophthalmic Surgeon: Mr. Priestley Smith. Physicians: Dr. O. J. Kauffmann, Dr. J. Douglas Stanley, and Dr. J. G. Emanuel. Surgeons: Mr. Jordan Lloyd, Mr. J. T. J. Morrison, and Mr. C. A. Leedham-Green. Ophthalmic Surgeon: Mr. Wilfrid Allport. Obstetric Officer: Dr. C. E. Purslow. Physician for Out-patients: Dr. L. G. J. Mackey. Surgeons for Out-patients: Mr. W. Billington, Mr. A. W. Nuthall, and Mr. B. J. Ward. Pathologist: Dr. L. G. Parsons. Radiographer: Mr. F. Emrys-Jones.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Honorary Consulting Physician: Dr. R. Saundby. Honorary Consulting Surgeon: Mr. D. C. Lloyd-Owen. Surgeons: Mr. H. Eales, Mr. E. W. Wood-White, and Mr. J. Jameson Evans. Dental Surgeon: W. Madin, B.D.S. Anæsthetist: Dr. S. W. Haynes. Radiographers: Mr. Hall-Edwards and Mr. Emrys-Jones. This hospital possesses 110 beds, and there is an average daily attendance of out-patients of 250. This institution is recognised by Universities and the Royal College of Surgeons, England, and Royal College of Physicians, London, as an ophthalmic hospital at which clinical instruction in ophthalmology may be received. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations.

UNIVERSITY OF LIVERPOOL.

The student must pass either (1) the University Matriculation Examination, or (2) the Final Examination for Graduation in Arts of any university in Great Britain and Ireland, or (3) the Matriculation Examination of the University of London, or (4) the Higher Certificate Examination of Oxford and Cambridge Joint Board, or (5) the Senior Local Examination of Oxford or Cambridge, or (6) some other examination of equal standard accepted by the Joint Matriculation Board. The course of professional study, subsequent to passing the Matriculation Examination and having been registered as a medical student, extends over five years. The degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of 21 years on the day of graduation. At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination. The other three years may be passed at any college or medical school recognised for this purpose by the University. Candidates must pass three examinations entitled respectively: the First Examination, the Second Examination, and the Final Examination. The fee is £5 for each examination. The subjects of the First Examination are: (1) Chemistry, Inorganic and Organic; (2) Biology (Zoology and Botany); and (3) Physics. The examination is divided into two parts—namely, (1) Chemistry and Physics, and (2) Biology; and candidates may present themselves in these parts separately. The subjects of the Second Examination are (*a*) Anatomy and Physiology (including Physiological Chemistry and Histology), and (*b*) Materia Medica, Pharmacy, and Pharmacology. Candidates may present themselves in *a* or *b* separately. The subjects for the Final Examination are: (1) General Pathology and Morbid Anatomy; (2) Therapeutics; (3) Forensic Medicine and Toxicology, and Public Health; (4) Obstetrics and Diseases of Women; (5) Surgery, Systematic, Clinical, and Practical; and (6) Medicine, Systematic and Clinical, including Mental Diseases and Diseases of Children. The Final Examination is divided into three parts, the first consisting of subject (1), the second of subjects (2) and (3), the third of subjects (4), (5), and (6). Candidates may present themselves in these parts separately. Candidates for the third part must have completed the fifth year of medical study.

Degrees of Doctor of Medicine and Master of Surgery.—No candidate will be admitted to the degrees of Doctor of Medicine or Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examinations for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine: provided always that original work published in scientific journals or separately shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. No candidate shall be admitted to the degree unless his application after report from the Faculty of Medicine shall have been accepted by the Senate. Candidates may be required to undergo examination in any subject connected with the dissertation. The subjects of examination for the degree of Master of Surgery are: (1) Surgical Anatomy, (2) Surgery, (3) Operative Surgery, (4) Clinical Surgery, (5) Ophthalmology, and (6) Pathology and Bacteriology.

Diploma in Ophthalmic Surgery.—A Diploma in Ophthalmic Surgery has been instituted for candidates who possess a qualification or Diploma in Medicine which entitles to registration in the United Kingdom. The examination for the Diploma will be held twice a year, at the end of the summer and autumn terms. Candidates before presenting themselves for examination, and subject to having obtained a registrable qualification or diploma, must have attended: (*a*) a three months' course of study in the anatomy, physiology, and pathology of the eye in the University; and (*b*) a course of instruction extending over not less than three terms in an ophthalmic clinic recognised by the University. The subjects of examination are: (1) The anatomy and histology of the visual organs and centres; (2) the physiology of vision; (3) physiological optics; (4) bacteriology in relation to diseases of the eye; (5) the morbid anatomy of diseases of the eye; (6) the diagnosis and treatment of diseases of the eye; (7) the estimation and correction of errors of refraction. The fee for the examination is £5 5*s*., and for each subsequent examination £3 3*s*.

Professors—Inorganic Chemistry: E. C. C. Baly, F.R.S. Physical Chemistry: F. G. Donnan, Ph.D., F.R.S. Physiology: C. S. Sherrington, M.D., F.R.S. Physics: L. R.

Wilberforce, M.A. Natural History: W. A. Herdman, D.Sc., F.R.S. Botany: R. J. H. Gibson, M.A. Anatomy: A. Melville Paterson, M.D. Medicine: T. Robinson Glynn, M.D. Surgery: Rushton Parker, F.R.C.S. Pathology: Vacant. Midwifery and Gynæcology: H. Briggs, M.D. Therapeutics: J. H. Abram, M.D. Hygiene: E. W. Hope, D.Sc. Forensic Medicine: R. J. M. Buchanan, M.D. Tropical Medicine: Major Ronald Ross, C.B., F.R.S. Bio-Chemistry: B. Moore, D.Sc. Entomology: R. Newstead, M.Sc., A.L.S.

At this University the following Scholarships and Fellowships are awarded:—(*a*) and (*b*), Robert Gee Entrance Scholarships, two annually, of £25 each, tenable for two years, Joint Matriculation Board Examination held in July, open to First M.B. Course Students; (*c*) Lyon Jones Scholarship, No. 1, of £21 per annum, tenable for two years, Competitive Examination among Junior Students in First M.B. Subjects, Perpetual Course at the University; (*d*) Lyon Jones Scholarship, No. 2, of £21, Competitive Examination among Senior Students in Anatomy, Physiology, Pharmacology, and Materia Medica; (*e*) Derby Exhibition of £15, Competitive Examination among Fourth- or Fifth-year Students in Clinical Subjects, and Clinical School Exhibition of £15 annually for Fourth- or Fifth-year students; (*f*) University Scholarship of £25 for one year, awarded on results of Second Examination for the degrees; (*g*) Holt Fellowships, Physiology and Pathology, of £100 each, for one year; this and the following six Fellowships are awarded by vote of Faculty to Student after graduation, for Teaching and Original Research; (*h*) Gee Fellowship, Anatomy, of £100, for one year, for Teaching and Research; (*i*) Alexander Fellowship, Pathology, of £100, for one year, for Research in Pathology, as are also the following four Fellowships; (*j*) Johnston Colonial Fellowship, Pathology, Bacteriology, and Bio-Chemistry, of £100, for one year; (*k*) John W. Garrett International Fellowship, Physiology, Pathology, and Bio-Chemistry, of £100, for one year; (*l*) Thelwall Thomas Fellowship, Surgical Pathology, of £100, for one year; (*m*) Ethel Boyce Fellowship in Gynæcological Pathology, of £100, for one year; the last two are awarded by vote of Faculty to graduate, and are for Research.

Medical School Buildings.—Spacious and well-equipped class-rooms and laboratories have been erected for the practical study of all the important scientific subjects which form the basis of medicine. Medical research has also been endowed with several new laboratories in which students can pursue research work after graduation. All the laboratories and class-rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle. The most recent additions are the Johnston Laboratories for Experimental Medicine, Bio-Chemistry, and Tropical Medicine, and the new building for Anatomy, Surgery, Toxicology, Ophthalmology, and Dental subjects. The departments of Physiology and Pathology are accommodated in the large block provided by the generosity of the late Rev. S. A. Thompson Yates in 1898. The Anatomical department is situated in a separate block and has a complete suite of rooms, including a large and well-stocked museum and a well-lighted dissecting room on the upper floor measuring 70 by 40 feet.

Fellowships and Scholarships.—Fellowships, scholarships, and prizes of over £1000 are awarded annually. A Holt Fellowship in Pathology and Surgery of the value of £100 for one year is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the Pathological department. A Holt Fellowship in Physiology, awarded under similar conditions of the value of £100 for one year. A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. A Johnston Colonial Fellowship in Pathology, Bacteriology, and Bio-Chemistry (£100 a year, renewable). A John W. Garrett International Fellowship in Physiology, Pathology, and Bio-Chemistry (£100 a year, renewable). An Ethel Boyce Fellowship in Gynæcological Pathology (£100 a year, renewable). A Thelwall Thomas Fellowship (£100 a year, renewable) in Surgical Pathology. Two Lyon Jones Scholarships of the value of £21 each for two years are awarded annually—a Junior Scholarship, open at the end of the first year of study to Liverpool University students, on the subjects of the First M.B. Examinations, and a Senior Scholarship, open to all students in the school on the subjects of Anatomy, Physiology, Pharmacology, and Materia Medica. A University Scholarship of £25 awarded on the results of the second examination for the degree. The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years. A Clinical School Exhibition of £15 for one year awarded under similar conditions. The Torr Gold Medal in Anatomy, the George Holt medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases. Two Robert Gee Entrance Scholarships of the value each of £25 per annum for two years are offered annually for competition. The holder is required to take out the Course for the University Degrees in Medicine. Communications should be addressed to the Dean, Mr. K. W. Monsarrat, The University, Liverpool.

Clinical Instruction.—The Clinical School of the University now consists of four general hospitals—the Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, and the Stanley Hospital; and of five special hospitals—the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children, St. Paul's Eye Hospital, and St. George's Hospital for Skin Diseases. These hospitals contain in all a total of 1050 beds. The organisation of these hospitals to form one teaching institution provides the medical student and the medical practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom. All the hospitals are within easy access from the University; those which are situated at any distance are readily reached by the tramway service of the city. The period of hospital practice extends over the last three years of medical study. During the first two years of this period no student will be permitted to change his attendance from one general hospital to another except at the commencement of an academic term. It is a regulation of the school that not more than five of the six terms of these two years shall be spent at any single general hospital. During the final year of hospital practice a student is permitted to attend the practice of all the general hospitals without restriction. The regulations demand only that his attendance shall be regular and to the satisfaction of the Hospitals' Board. There are a large number of appointments to house physicianships and surgeonships both at the general and special hospitals which are open to qualified students of the school. These appointments (20) in most cases carry salaries ranging from £60 to £100 per annum. Applications for further information regarding the Medical Curriculum should be addressed to the Dean of the Faculty of Medicine.

School of Veterinary Medicine.—A school of Veterinary Medicine in connexion with the University was opened in October, 1904; full courses of instruction for the Veterinary Curriculum will be provided and students will be prepared for the M.R.C.V.S. A diploma in Veterinary Hygiene is now granted by the University.

Public Health Department.—This is located in a separate building known as Ashton Hall, in which full courses of instruction are given to D.P.H. students for the D.P.H. of the University and the diplomas of other Examining Boards (see p. 641).

Special Diplomas.—The University has instituted diplomas in Anatomy, Bacteriology, Bio-chemistry, and Parasitology. A special course of study of three terms' duration is required in the subject chosen for the diploma and allied subjects.

School of Pharmacy.—Complete courses of instruction are provided adapted to the requirements of candidates preparing for either the Minor or Major Examinations of the Pharmaceutical Society of Great Britain.

Prospectuses and further information may be had on application to the Dean of the Faculty of Medicine, University of Liverpool.

Royal Infirmary Staff.—Consulting Physicians: Dr. A. T. H. Waters, Dr. T. R. Glynn, Dr. R. Caton, and Sir James Barr. Physicians: Dr. T. R. Bradshaw, Dr. J. H. Abram, and Dr. R. J. M. Buchanan. Assistant Physicians: Dr. John Hay and Dr. O. T. Williams. Consulting Surgeon: Mr. R. Parker. Surgeons: Mr. F. T. Paul, Mr. R. A. Bickersteth, and Mr. W. T. Thomas. Assistant Surgeons:

Mr. T. C. Littler-Jones, Mr. R. E. Kelly, and Mr. F. A. G. Jeans. Gynæcological Surgeon: Mr. T. B. Grimsdale. Assistant Gynæcological Surgeon: Mr. W. B. Bell. Ophthalmic Surgeon: Mr. T. H. Bickerton. Surgeon to the Throat Department: Mr. J. M. Hunt. Physician to the Skin Department: Dr. L. Roberts. Dental Surgeon: Mr. E. J. M. Phillips. Pathologist: Dr. E. Glynn. Anæsthetists: Mr. W. Fingland, Mr. F. W. Bailey, Mr. H. Armstrong, and Mr. A. J. O'Leary.

David Lewis Northern Hospital Staff.—Physicians: Dr. T. Bushby and Dr. W. B. Warrington. Consulting Surgeons: Mr. W. M. Campbell and Mr. C. Puzey. Surgeons: Mr. D. Harrisson, Mr. R. W. Murray, and Mr. K. W. Monsarrat. Ophthalmic Surgeon: Mr. A. N. Walker. Surgeon to the Orthopædic Department: Mr. W. H. Broad. Dental Surgeon: Mr. W. Matthews. Pathologists: Dr. H. L. Murray, Dr. J. Owen, and Dr. R. Stenhouse Williams. Anæsthetists: Mr. R. Stevenson and Dr. H. J. Knox. Medical Tutor: Dr. P. Hick. Surgical Tutor: Mr. R. O. Knowles.

Royal Southern Hospital Staff.—Consulting Physicians: Dr W. Williams and Dr. William Carter. Consulting Surgeons: Mr. Robert Hamilton and Dr. William Alexander. Honorary Physicians: Dr. C. J. Macalister, Dr. J. L. Roberts, and Professor Sir Ronald Ross. Honorary Surgeons: Mr. R. Jones, Mr. G. P. Newbolt, and Mr. Douglas Crawford. Honorary Assistant Surgeon: Mr. S. R. W. Armour. Honorary Medical Officer for Tropical Diseases: Professor Sir Ronald Ross. Honorary Dermatologist: Dr. F. H. Barendt. Honorary Ophthalmic Surgeon: Mr. R. J. Hamilton. Honorary Aural Surgeon: Mr. G. C. Lee. Honorary Laryngologist: Dr. W. Permewan. Honorary Pathologist in Tropical Medicine: Dr. J. W. W. Stephens. Radiologist: Dr. D. Morgan. Honorary Dental Surgeon: Mr. J Royston. Anæsthetists: Dr. F. M. Gardner-Medwin, Dr. S. A. Smith, Dr. T. E. Jones, and Dr. W. J. Bennett Jones.

Stanley Hospital Staff.—Consulting Physician: Dr. R. I. Richardson. Consulting Surgeons: Mr. J. Bark and Mr. K. A. Grossmann. Physicians: Dr. A. G. Gullan and Dr. J. Owen. Surgeons: Mr. F. C. Larkin and Mr. A. J. Evans. Gynæcology: Miss F. Ivens, M.B., M.S. Ophthalmic Physician: Dr. J. Grimshaw. Laryngologist: Mr. J. E. McDougall. Dentist: Mr. J. Woodford Williams.

School of Tropical Medicine.—The school is affiliated with the University of Liverpool and the Royal Southern Hospital of Liverpool. Three courses of instruction are given every year. Two of these last for three full months and are called respectively the Lent Course, from Jan. 6th to April 5th; and the Autumn Course, from Sept. 15th to Dec. 13th. The Third Course, called the Short Course, lasts one month, from June 1st to the 30th. The full course consists (1) of a systematic series of lectures on Tropical Medicine and Sanitation delivered by the Professor of Tropical Medicine at the University; (2) of additional lectures on Special African and other Diseases, delivered at the University; (3) of systematic lectures and demonstrations on Tropical Pathology and Parasitology by the Walter Myers Lecturer at the University; (4) of similar instruction on Medical Entomology by the Lecturer on Economic Entomology at the University; (5) of Practical Work on the Bacteriology of Typhoid, Dysentery, Cholera, Plague, and Malta Fever by the Assistant Lecturer on Tropical Bacteriology; and (6) of clinical lectures and demonstrations delivered at the Royal Southern Hospital by the Physician in charge of the Tropical Ward, the Professor, and the Walter Myers Lecturer. The instruction given occupies six hours a day for five days a week during the course. Teaching under headings 3, 4, and 5 above is delivered in the laboratory of the school at the University, which contains accommodation for 30 students, with all necessary appurtenances, including a well-equipped museum, a class library, and access to the general departmental library. Teaching under heading 6 is given in the tropical ward and the attached clinical laboratories of the Royal Southern Hospital on two or three afternoons a week. At the end of each course an examination is held by the University for its diploma of Tropical Medicine (D.T.M.), which is open only to those who have been through the course of instruction of the school. The examination lasts three days and consists (1) of papers on Tropical Medicine, Tropical Pathology, and Tropical Sanitation and Entomology respectively; (2) of a clinical examination; and (3) of an oral examination. The results are declared as soon as possible afterwards. Those who do not wish to undertake the examination are given a certificate of attendance if their attendance has been satisfactory. The Short Course consists entirely of Practical and Clinical Laboratory Work, given at the laboratory at the University and at the Royal Southern Hospital. The fee for the full course of instruction is 13 guineas, with an extra charge of 10*s.* 6*d.* for the use of a microscope if required. The fee for the examination is 5 guineas. Applications should be made to the Dean of the Medical Faculty, University of Liverpool, from whom prospectuses may be obtained. Two University Fellowships of £100 a year each are open to students of the school, amongst others. Accommodation for research work is to be had both at the University Laboratory of the school and at its Research Laboratories at Runcorn (16 miles distant from Liverpool). Since it was instituted nine years ago the school has employed 25 different investigators paid out of its funds and has despatched to the tropics 21 scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in 21 special memoirs with many plates and figures, besides text-books and numerous articles in the scientific press. Since 1906 the memoirs have been succeeded by the "Annals of Tropical Medicine and Parasitology," published by the Committee and open to outside contributors (apply to the Secretary, B 10, Exchange-buildings, Liverpool). The Mary Kingsley Medal is awarded by the school for distinguished work in connexion with Tropical Medicine, and has been given to Sir David Bruce, Professor Koch, Dr. Laveran, Sir Patrick Manson, and others.

THE VICTORIA UNIVERSITY OF MANCHESTER.

Four degrees in Medicine and Surgery are conferred by the University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Matriculation Examination (Faculty of Medicine), or to have passed such other examination as may be recognised by the University for this purpose.[1]

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will have attained the age of 21 years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination.

The First Examination.—The subjects of examination are as follows:—(1) Inorganic Chemistry and Physics; (2) Biology; and (3) Elementary Organic Chemistry and Bio-Chemistry. Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects. The Examination is divided into three parts: Part 1, Inorganic Chemistry and Physics; Part 2, Biology; Part 3, Elementary Organic Chemistry and Bio-Chemistry; and the candidates may pass in these parts separately under certain conditions.

The Second Examination.—The subjects of examination are as follows:—(1) Anatomy; (2) Physiology, including Physiological Chemistry and Histology. Candidates may pass in (1) and (2) separately under certain conditions.

The Third Examination.—(1) Pathology; (2) Pharmacology and Therapeutics; (3) Hygiene. These subjects may be taken separately under certain conditions.

The Final Examination.—The subjects of examination are as follows:—(1) Medicine, Systematic and Clinical (including Mental Diseases and Diseases of Children); (2) Surgery, Systematic, Clinical, and Practical; (3) Obstetrics and

[1] 1. The Board will grant exemption from the Matriculation Examination to graduates of any university of the United Kingdom, provided Latin has formed part of one of the degree examinations. 2. For particulars of the conditions under which holders of Certificates from the Universities of Oxford, Cambridge, and London are entitled to exemption, the Calendar of the Joint Matriculation Board should be consulted. The fee for registering external Certificates when exemption is granted is £1.

Gynæcology (including Clinical and Practical); (4) Forensic Medicine (including Toxicology). These subjects may be taken separately under certain conditions.

Candidates for the Final Examination must have completed the fifth year of medical study.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates may elect either (1) to present an original dissertation; or (2) to undergo an examination. The dissertation must embody the results of personal observation or original research, either in some department of medicine or of some science directly relative to medicine. The examination, which will be partly written, partly practical, is in the Principles and Practice of Medicine, in Pathology, and in some other subject to be selected by the candidate.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; and (6) Pathology and Bacteriology.

Professors—Physics: E. Rutherford, D.Sc., F.R.S. Chemistry: H. B. Dixon, M.A., F.R.S. Organic Chemistry: W. H. Perkin, D.Sc., F.R.S. Zoology: S. J. Hickson, D.Sc., F.R.S. Botany: F. E. Weiss, D.Sc. Cryptogamic Botany: W. H. Lang, M.B., B.Sc., F.R.S. Physiology: W. Stirling, D.Sc. Anatomy: Grafton Elliot Smith, M.A., M.D., F.R.S. Materia Medica: R. B. Wild, M.D. Public Health and Bacteriology: A. S. Delépine, M.B., C.M., M.Sc. Pathology: J. Lorrain Smith, M.D. Clinical Medicine: Judson S. Bury, M.D., B.Sc., F.R.C.P. Systematic Medicine: George R. Murray, M.A., M.D. Systematic Surgery: J. W. Smith, M.B., C.M., F.R.C.S. Clinical Surgery: William Thorburn, B.Sc., M.D., B.S., F.R.C.S. Obstetrics and Gynæcology: Sir W. J. Sinclair, M.D. Forensic Medicine: J. Dixon Mann, M.D.

Communications should be addressed to the Registrar, The University, Manchester.

Scholarships, Fellowships, and Prizes.—At this University there are 22 Foundation Scholarships, 12 Exhibitions, five being for subjects connected with medical study, a Surgical Prize, a Fellowship, Research Fellowships in Public Health, and Honorary Research Fellowships. 13 Scholarships are Entrance Scholarships, three are Medical, and there are one each for Surgery, Biology, Physiology, and Diseases of Children, and one General Medical and Surgical. Three of the Exhibitions are for Physiology, one for Anatomy, and one for French and German. The Surgical Prize, named "The Dumville," is awarded for the subjects of Systematic, Practical, and Operative Surgery, Surgical Anatomy, and Surgical Pathology, £15. The Leech Fellowship (£100) is for the encouragement of study and research, and is open to persons who have graduated M.B., Ch.B. in the University. The Honorary Research Fellowships, tenable for two years, conferring the right of free use of the laboratories, are awarded generally in October on application, with evidence of capacity for independent investigation.

The following entrance scholarships are offered for award to persons of either sex proposing to enter a medical course of study at the University:—Seaton—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years. Subjects as in Dalton. Dreschfeld Memorial—£30, tenable for one year. Subjects: those of July Matriculation Examination. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar, and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). Dora Muir.—£25 per annum, tenable for three years (open to women only). Candidates may select such of the subjects as they desire from amongst those set for the other Entrance Scholarships. James Gaskill.—£35, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics, Chemistry. Credit given for knowledge of Classics, Elements of English Language, Literature, and History, and French and German. Manchester Grammar School.—£25 per annum, tenable for three years. The examinations for all these scholarships are held in the month of May. Kay-Shuttleworth (Sir James Phillips).—£30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics, Chemistry. Entrance Scholarships in Medicine.—One or more Scholarships in each year will be offered for proficiency in Arts or Science. The Scholarships are of the value of £100 each, which will be set off against fees as follows: £60 against the University class fees and £40 against the Infirmary fees.

The Platt Biological Scholarship of £50 for one year is awarded to the candidate who shows the most promise of ability for prosecuting original research in Zoology and Botany, and the holder is to devote his time to research in Zoology or Botany. The Robert Platt Physiological Scholarship of £50 for two years, with the subjects of Physiology and Comparative Anatomy, is open to candidates whether or not previously students of the University. There are two Dauntesey Medical Scholarships of £35 each for one year, with the subjects of Zoology, Botany, and Chemistry. These Scholarships are open to all students preparing for a medical course who shall not have attended lectures or laboratory courses on Human Anatomy or Physiology, or a purely medical or surgical course in the University or in any other medical school in the United Kingdom. Candidates must not be more than 25 years of age on Oct. 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies. The subjects of the Turner Scholarship of £20, for students who have completed a full course of medical study in the University, are: Medicine, Pathology (written and practical), Obstetrics, Practical Surgery, Ophthalmology, Forensic Medicine, and Public Health. The John Henry Agnew Scholarship of £30, awarded on the results of an examination, partly written and partly clinical, on Diseases of Children, Medical and Surgical, is open for competition annually to all students in the medical department who have pursued a regular course of medical study in the University extending over a period of not less than four years or more than six years and have attended the course of lectures on Diseases of Children. The Ashby Memorial Scholarship, value £100, is open to duly qualified medical men and women who intend to pursue research in diseases of children.

The Professor Tom Jones Memorial Surgical Scholarship of £100 for one year is awarded on the result of evidence submitted by the candidate who must have either graduated in the University or have obtained the Diploma of the Conjoint Colleges. The Graduate Scholarship in Medicine of the value of £25 to £50 for one year is awarded on the results of the Final Examination for M.B., Ch.B. The Theodores Exhibition of £15 for one year has the subjects of French and German, and the successful candidate is required to enter for a regular University course. There are two Robert Platt Exhibitions of £15 each for first and second-year students in physiology, and the Sydney Renshaw Exhibition of £15 is for second-year students in physiology. The Professor Tom Jones Exhibition in Anatomy, value £25, is for first-year students in anatomy. The Dumville Surgical Prize of £15 is awarded after examination in Systematic, Practical and Operative Surgery, Surgical Anatomy, and Surgical Pathology. A gold medal is awarded for distinction on obtaining the degree of M.D.

The Medical School.—This medical school is located in a large building, which forms a part of the University. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the

fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, a large extension of the school buildings was made in 1895. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating 50 students, lighted from both sides and also from the roof, completely equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of the students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, accommodating 250 students, has been provided, and the existing accommodation for students is supplemented by the provision of a larger common room.

Clinical Studies.—The clinical and practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital, a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted in the Infirmary, which in the new buildings together with the associated hospitals at Cheadle will contain 1158 beds, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary.

Public Health.—The regulations with regard to the Degrees in Sanitary Science will be found under the special section on p. 641.

Clinical Instruction.—THE MANCHESTER ROYAL INFIRMARY.—The New Royal Infirmary has been built on the pavilion system, near the University, between the recently enlarged Eye Hospital and the new St. Mary's Hospital for Women and Children, and has accommodation for 592 beds. Of these, 52 are allotted to the Special and Emergency Departments; the 540 remaining beds are allocated as follows: 240 for medical practice and 300 for surgical practice (180 for men and 120 for women and children). The medical side consists of five units, each unit having a testing room for the scientific investigation of morbid products and a class-room. The surgical beds are also arranged in five units, each unit having its own operation theatre, with anæsthetising, recovery, sterilising, testing, and apparatus rooms, and its own class-room attached. Of these units four on each side are already occupied. The fine educational block provides very handsomely for the wants and comforts of the students, there being separate suites of rooms for the men and the women, and also a large common reading room, a lecture theatre, and a museum. The present annual average number of in-patients is 8000, of out- and home-patients 33,000, and the list of casualties in the accident room has averaged 16,000 per annum. About 6000 operations are performed annually in the operation theatres. Associated with the Infirmary are: (1) the Convalescent Hospital at Cheadle, containing 136 beds; (2) the Royal Lunatic Hospital at Cheadle, accommodating with its branches 430 patients; and (3) the Central Branch in Piccadilly for casualty and out-patient work. The Associated Hospitals thus contain 1158 beds and are under the same management. Women students are admitted to the practice of the Infirmary on the same terms as men.

Fees.—Medical Practice: Three months, 5 guineas; six months, 8 guineas; 12 months. 12 guineas; full period required by the Examining Boards, 25 guineas.

In addition to the list of scholarships given under the general heading, "The Victoria University of Manchester," two Entrance Scholarships in Medicine of the value of £100 each are offered annually by the Council of the Manchester University and the Medical Board of the Manchester Royal Infirmary for proficiency in Arts and Science subjects respectively. The Bradley Memorial Scholarship in Clinical Surgery, value £20, is offered annually in the Summer Session. Gentlemen are eligible who are in their fifth or sixth year of study, have completed their dresserships, and have spent two years in clinical work at the Manchester Royal Infirmary. One Medical and one Surgical Clinical Prize of the value of 6 guineas are offered annually. (The other scholarships and prizes are in the College Syllabus.) Annual appointments may be held by those who have attended the practice of the infirmary: a Surgical Registrar (£75); a Pathological Registrar (£100); a Medical Registrar (£75); a Surgical Tutor (£30); a Director and Assistant Directors of the Clinical Laboratory (£200, £75, and £40); an Assistant Medical Officer (£105); Three Assistant Surgical Officers (£35 each); Five Anæsthetists (£50); a Medical Officer for home patients (£150); and a Medical Officer for Radiography and Electricity Department (£100). The following resident appointments are also made annually: Resident Medical Officer (£150); Resident Surgical Officer (£150); Resident Medical Officer at the Convalescent Hospital at Cheadle (£150); two Medical Officers at the Central Branch, £100 each. An Assistant Medical Officer at the Convalescent Hospital is appointed every six months at a salary of £80 per annum. The following unpaid appointments are open to those who have attended the practice of the Infirmary:—House Surgeons: Two Senior and Two Junior House Surgeons are appointed every three months for a term of six months. House Physicians: Ten House Physicians are appointed during each year for a term of six months. Also every six months officers are appointed to the Accident Room, and the Gynæcological, Ear and Throat Departments. The House Surgeons and House Physicians and Resident Assistant at Cheadle must possess registrable qualifications. Consulting Physician: Dr. Graham Steell. Physicians: Dr. Judson S. Bury, Dr. A. T. Wilkinson, Dr. E. S. Reynolds, Dr. G. R. Murray, and Dr. R. T. Williamson. Assistant Physicians: Dr. E. M. Brockbank, Dr. E. N. Cunliffe, and Dr. F. Craven Moore. Pathologist: Dr. J. Lorrain Smith. Consulting Surgeons: Mr. Walter Whitehead, Mr. F. A. Southam, and Mr. G. A. Wright. Surgeons: Mr. W. Thorburn, Mr. J. W. Smith, Mr. A. H. Burgess, and Mr. J. H. Ray. Assistant Surgeons: Mr. E. D. Telford, Mr. C. Roberts, Mr. P. R. Wrigley, and Mr. H. H. Rayner. Anæsthetist: Mr. Alexander Wilson. Consulting Obstetric Physician: Dr. Lloyd Roberts. Gynæcological Surgeon: Dr. A. Donald. Assistant Gynæcological Surgeon: Dr. W. E. Fothergill. Ophthalmic Surgeon: Dr. A. Hill Griffith. Aural Surgeon: Dr. William Milligan. Dental Surgeon: Mr. W. A. Hooton. Resident Medical Officer: Dr. D. E. Core. Resident Surgical Officer: Mr. W. H. Hey. Pathological Registrar: Dr. W. B. Anderton Medical Registrar: Dr. F. E. Tylecote. Surgical Registrar: Mr. R. Ollerenshaw. Director of the Clinical Laboratory: Dr. G. E. Loveday. Assistant Directors of the Clinical Laboratory: Dr. A. Ramsbottom and Dr. C. E. Lea. Anæsthetists: Dr. S R. Wilson, Mr. Edward Moir, Dr. E. Falkner Hill, Dr. T. Coogan, and Dr. G. Jefferson. Assistant Medical Officer: Dr. A. Ramsbottom. Assistant Surgical Officers: Mr. W. R. Douglas and Mr. Howard Buck. Surgical Tutor: Mr. W. R. Douglas. Medical Officer for Home Patients: Dr. George Ashton. Medical Officer for Radiography and Electricity Department: Mr. A. E. Barclay. Resident Superintendent of the Royal Lunatic Hospital at Cheadle: Mr. W. Scowcroft. Medical Officers, Central Branch: Mr. C. H. Hibbert and Mr. J. W. Bride. General Superintendent and Secretary: Mr. Walter G. Carnt.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury and Gartside-street, Manchester.—The hospital contains 168 beds and 26 in the Convalescent Home, St. Anne's-on-Sea. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the new Out-patient Department, Gartside-street, Manchester. Physicians: Dr. Hutton, Dr. Heywood, and Dr. Lapage. Surgeons: Mr. J. Howson Ray, Mr. C. Roberts, and Mr. H. H. Rayner. Honorary Consulting Surgeon: Mr. G. A. Wright. Honorary Consulting Pathologist: Professor R. Lorrain Smith. Honorary Surgeon for Throat,

Nose, and Ear Diseases: Mr. F. H. Westmacott. Pathologist: Dr. W. Mair. Honorary Dental Surgeon: Mr. Barron J. Rodway. Resident Medical Officers: Mr. G. G. Wray and Dr. Rupert Briercliffe. Medical Officer at the Dispensary: Dr. Hugh Ashby. Assistant Medical Officers: Dr. Maude Marsden and Dr. Batty. During 1910 there were 2702 in-patients, and 34,135 new out-patients were under treatment at the Dispensary, and there were 105,534 attendances made by out-patients. Secretary: Mr. H. J. Eason.

THE MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road, Manchester.—The hospital contains 70 beds. Out-patients are seen daily from 8.30 to 10 A.M. Honorary Consulting Physicians: Dr. W. N. Maccall and Dr. T. C. Railton. Honorary Consulting Surgeons: Mr. Frederick A. Southam. Honorary Physician for Women: Dr. T. Arthur Helme. Honorary Surgeon for Women: Mr. Arnold W. W. Lea. Honorary Physician: Dr. J. J. Cox. Honorary Physicians for Children: Dr. C. H. Melland and Dr. A. A. Mumford. Honorary Assistant Surgeon for Women: Mr. Harold Clifford. Honorary Surgeon for Children: Mr. R. Ollerenshaw. Honorary Assistant Physician for Children: Dr. A. C. Sturrock. Honorary Ophthalmic Surgeon: Dr. H. H. McNabb. Anæsthetists: Mr. G. A. Barrow, Dr. T. W. Chaff, and Dr. C. H. Lee. Pathologist: Dr. H. R. Clarke. Assistant Medical Officers: Dr. Whitworth and Mr. R. W. Walsh. Honorary Dentist: Mr. W. A. Hooton. House Surgeon: Dr. David H. Paul.

UNIVERSITY OF LEEDS.

Candidates presenting themselves for Matriculation in the Faculty of Medicine must pass an examination in English (Language or Literature) and English History, Mathematics and Latin, and in two of eight optional subjects. Exemption from the matriculation examination is granted to graduates of any university of the United Kingdom provided Latin has formed part of one of the degree examinations.

Four degrees in Medicine and Surgery are conferred—viz.: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), also Degrees and Diplomas in Dental Surgery and a Diploma in Public Health.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of 21 years on the day of graduation, and that they have attended courses of instruction approved by the University extending over not less than five years, two of such years, at least, having been passed in the University subsequently to the date of passing the First Examination. Candidates must also satisfy the examiners in the several subjects of the following examinations entitled respectively: the Matriculation Examination, or such other examination as may have been recognised by the Joint Matriculation Board in its stead; the First Examination; the Second Examination; and the Final Examination.

The First Examination.—The First Examination consists of: Part I., Physics and Chemistry; Part II., Biology. Candidates will be allowed to pass the two parts separately.

The Second Examination.—The Second Examination consists of: Part I., Anatomy and Physiology; Part II., Materia Medica and Pharmacy. Candidates will be allowed to pass the two parts separately.

The Final Examination.—The Final Examination consists of: Part I., Pathology and Bacteriology. Part II., Forensic Medicine and Public Health. Part III., Medicine: Systematic and Clinical, including Mental Diseases and Diseases of Children; Surgery: Systematic, Clinical and Practical; Obstetrics and Gynæcology: Systematic, Clinical, and Practical; Pharmacology and Therapeutics. Candidates will be allowed to pass Parts II. and III. separately or together, and they may present themselves for examination in Part I. at the end of the tenth term.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine; provided always that original work published in scientific journals or in the Proceedings of learned societies, or separately, shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Every candidate is also required to furnish certificates of attendance in accordance with the regulations of the University. The subjects of examination are as follows: Surgical Anatomy, Surgery, Operative Surgery, Clinical Surgery, Ophthalmology, Pathology, and Bacteriology.

Diploma in Public Health.—The regulations for this diploma will be found on p. 641.

Professors—Physics: W. Bragg, M.A., F.R.S. Chemistry: A. Smithells, B.Sc., F.R.S. Organic Chemistry: J. B. Cohen, B.Sc. Zoology: W. Garstang, M.A. Botany: J. H. Priestley. Anatomy: J. K. Jamieson, M.B. Physiology and Histology: De Burgh Birch, M.D. Pathology: A. S. Grünbaum, M.D. Clinical Medicine: A. G. Barrs, M.D. Medicine: T. W. Griffith, M.D. Surgery: R. L. Knaggs, F.R.C.S. Clinical Surgery: B. G. A. Moynihan, F.R.C.S. Obstetrics: J. B. Hellier, M.D. Public Health: J. S. Cameron, M.D. Therapeutics: H. J. Campbell, M.D. Forensic Medicine: F. W. Eurich, M.D.

At the University of Leeds (School of Medicine) there are two Scholarships and six Prizes. The Entrance Scholarship, value £73 2*s.* 6*d.*, is awarded on the results of the Joint Matriculation Board Examination held in July after a complete course of lectures and practical classes at the Leeds School. The Infirmary Scholarship, value £42, is awarded on the results of the First M.B. Examination of the University of Leeds after a complete course of hospital practice and clinical lectures at Leeds Infirmary. The Hardwick Prize of £10 is awarded after competitive examination in Clinical Medicine among Clinical Clerk Students of two years' standing. The McGill Prize of £10 is awarded after competitive examination among advanced surgical students in Clinical Surgery. The Thorp Scholarship of about £25 is awarded annually to a student or graduate who undertakes research in some subject in Public Health or Forensic Medicine.

Clinical Instruction.—THE LEEDS GENERAL INFIRMARY, in connexion with this medical faculty, has accommodation for 524 in-patients, including 88 beds at branch hospitals in the country. During the last year 7935 in-patients and 51,243 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical lectures are given in Medicine and Surgery by the Physicians and Surgeons. There are Medical, Surgical, Ophthalmic, Aural, Electro-therapeutic, and Radiographic Departments, in each of which special instruction is imparted to students. A Gynæcological and Extern Obstetric Department, in which there were 509 confinements, together with Laryngeal and Skin Clinics, are in operation. Several valuable prizes are given at the end of each session. The following appointments at the Infirmary are annually open to students (for some of them, however, a registered legal qualification is required): Non-resident: clinical pathologist, £300; assistant clinical pathologist, £150; senior anæsthetist, £50; 7 anæsthetists, £25. Resident: medical officer, £150; surgical officer, £150; casualty officer, £125; ophthalmic, £100; ophthalmic house surgeon, £50. These appointments are made annually and holders are eligible for re-election. Resident medical officer to the Ida Hospital, for six months; honorarium £30. Obstetric officer, for six months; 6 house physicians, for six months; 4 house surgeons, for 12 months; 24 physicians' clerks, for six months; 24 surgeons' dressers, for six months; 16 ophthalmic and aural surgeons' dressers, for three

months; 12 gynæcological ward clerks, for three months; 16 gynæcological out-patient clerks, for three months; 24 maternity clerks, for one month; 24 assistant physicians' clerks, for three months; 8 dermatological clerks, for three months; 8 laryngological clerks, for three months; 24 assistant surgeons' dressers, for three months; 8 assistant ophthalmic surgeons' dressers, for three months; 24 dressers in the casualty-room, for three months; 24 post-mortem room clerks, for three months; 8 laboratory assistants, for three months. There are appointments open to students in other medical institutions in the town and also in the West Riding (Lunatic) Asylum.

The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, the Maternity Home, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds students. The buildings of the Medical School are placed close to the Infirmary and contain complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy are some of the most striking features of the buildings. Provision for the convenience of students, in the shape of a common room, a refectory, &c., are made. The classes in Systematic and Practical Chemistry, Physics, Botany, and Zoology are held in the Science and Arts Department of the University, in College-road. Two Entrance Scholarships are offered: one, of the value of £73 2*s.* 6*d.*, covering admission to all requisite lectures; and the other, of the value of 40 guineas, covering the cost of admission to the medical and surgical practice of the infirmary.

Staff of Leeds General Infirmary.—Consulting Physicians: Sir Thomas Clifford Allbutt, K.C.B., Dr. John E. Eddison, and Dr. Charles M. Chadwick. Consulting Surgeons: Mr. Thomas Pridgin Teale, Mr. A. W. Mayo Robson, and Mr. Edward Ward. Consulting Eye and Ear Surgeon: Mr John Albert Nunneley. Consulting Obstetric Physician: Dr. James Braithwaite. Consulting Dental Surgeon: Mr. T. S. Carter. Physicians: Dr. Thomas Churton, Dr. Alfred George Barrs, and Dr. T. Wardrop Griffith. Surgeons: Mr. Harry Littlewood, Mr. R. Lawford Knaggs, Mr. B. G. A. Moynihan, and Mr. Walter Thompson. Surgeons to the Eye and Ear Department: Mr. H. Secker Walker and Mr. A. L. Whitehead. Obstetric Physician: Dr. J. B. Hellier. Physician with Charge of Out-patients: Dr. E. F. Trevelyan. Assistant Physician: Dr. W. H. Maxwell Telling. Assistant Surgeons: Mr. J. Faulkner Dobson, Mr. H. Collinson, Mr. L. R. Braithwaite, and Mr. A. Coupland. Surgeon to Out-patients in the Eye and Ear Department: Mr. G. Constable Hayes. Pathologist: Dr. Albert S. Grünbaum. Dental Surgeon: Mr. J. B. Hordern. Medical Officer in Charge of the Electro-Therapeutic Department: Mr. L. A Rowden. Clinical Pathologist: Mr. M. J. Stewart. Assistant Clinical Pathologist: Miss C. Eglington. Medical Tutor: Dr. George W. Watson. Surgical Tutor: Mr. Alfred Gough. Anæsthetists: Dr. Douglas Seaton, Mr. J. Nicholson, Dr. T. P. Rowling, Dr. G. E. St. Clair Stockwell, Dr. Frank Dobson, Dr. F. Whalley, Dr. Macvean, and Dr. F. Marshall Greaves.

UNIVERSITY OF SHEFFIELD.

Candidates for a medical degree shall have matriculated in the University or have passed such other examination as may be recognised for this purpose by the University and sanctioned by the Joint Matriculation Board. The subjects required by the General Medical Council must be included in the Matriculation Examination or its recognised substitute.

The Degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

Degrees of Bachelor of Medicine and Bachelor of Surgery.—A candidate for the degrees of M.B., Ch.B., shall produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the University, one at least being subsequent to the passing of the First Examination.

The First Examination.—The subjects of examination are chemistry, physics, and biology. The examination is divided into two parts: Part I., A (chemistry and physics) and B (biology); and Part II.: Organic Chemistry. Candidates may pass in each part separately. The Intermediate B.Sc. Examination in these subjects will, on payment of the required additional fee, be accepted instead of Part I. of this examination. Candidates must, after matriculation and registration as a medical student, have attended courses of instruction (lectures and laboratory work) in chemistry, physics, and biology for one year each, and special organic chemistry for one term.

The Second Examination.—The subjects of examination are anatomy, physiology, materia medica, and pharmacy. The examination is divided into two parts, A (anatomy and physiology) and B (materia medica and pharmacy), and candidates may pass in either part separately. Candidates must have completed the third winter session of professional study, must have passed the first examination, and must have attended (1) lectures on anatomy and dissections during two winter sessions and one summer session; (2) lectures on physiology during two winter sessions, practical physiology during two winter sessions, and histology during one summer session; and (3) materia medica and pharmacy for three months.

The Third or Final Examination.—The subjects of examination are divided into two parts—namely, A (forensic medicine and toxicology, public health, and pathology and morbid anatomy) and B (medicine, including pharmacology and therapeutics, mental diseases, and diseases of children, surgery, obstetrics, and gynæcology). Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination or for Part B must have completed the fifth year of study.

Degree of Doctor of Medicine.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch. B. at least one year previously, must present a thesis embodying observations in some subject approved by the professor of medicine, and must pass an examination in the Principles and Practice of Medicine.

Degree of Master of Surgery.—Candidates for the degree of Ch.M. must have passed the examination for the degrees of M.B., Ch.B. at least one year previously and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution, affording full opportunity for the study of Practical Surgery.

The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology and Bacteriology.

Professors—Physics: W. M. Hicks, Sc.D., F.R.S. Chemistry: W. Palmer Wynne, D.Sc., F.R.S. Biology: Alfred Denny. M.Sc., F.L.S. Anatomy: C. J. Patten, M.A., M.D., Sc.D. Physiology: J. S. Macdonald, B.A., L.R.C.S., L.R.C.P. Medicine: D. Burgess, M.A., M.B., F.R.C.P. Materia Medica, &c.: (vacant). Surgery: Sinclair White, M.D., M.Ch., F.R.C.S. Pathology: J. M. Beattie. M.A., M.D. Midwifery: (vacant). Public Health: Ralph P. Williams, M.D., B.S., D.P.H.

Scholarships, &c.—There are 10 scholarships and a Town Trust Fellowship. The Entrance Scholarship, value £122, is awarded after examination, but the candidate must read for a Degree in Medicine. There are two Special (1911) Scholarships, which are awarded on the results of the Joint Board Matriculation Examination, and the candidates must read for a Degree in Medicine of the University of Sheffield. They are of the values of 150 guineas and 50 guineas respectively. There are four Town Trust Scholarships, obtainable by a special examination open to boys or girls, who must have been educated in Sheffield, which are of the value of £50 each per annum. The Kaye Scholarship in Anatomy and Physiology, of £22 10*s.* for one year, is awarded after special examination of students who have completed the second Winter Session. The candidates must be natives of Sheffield. The Mechanics' Institute Scholarship of £50 per annum for one year (renewable for a second) is a post-graduate Scholarship. The Frederick Clifford Scholarship of £50 per annum for two years is available for graduates of the University residing within 40 miles. The Senate considers each application for these two latter, as also that of the Town Trust Fellowship, value £75 per annum for one year, open to graduates of the University. Full particulars as to

curriculum, scholarships, &c., may be had on application to the Registrar or to the Dean of the Medical Faculty.

Public Health.—The regulations with regard to the degrees in Sanitary Science will be found on p. 642.

The Medical School.—The new buildings of the University opened in 1905 are situated at the west end of the city, adjoining Weston Park, and the Medical department occupies the entire north wing of the University quadrangle. The various athletic and other students' societies are under the management of a Students' Representative Council, elected annually. There are large and comfortable common rooms both for men and women students. A refectory is open daily at the University where students may obtain refreshments, lunch, dinner, &c., at extremely moderate prices. The University journal *Floreamus*, edited by a committee of staff and students, is published each term. The University Hostel, Ashgate-road, is recognised by the Senate as a residence for women students, full particulars of which may be obtained of the tutor for women students. Other societies of interest to the medical student are the Biological, Chemical, and Clinical and Pathological Societies.

Clinical Instruction.—The University is within easy reach of the various hospitals with which it is connected for clinical purposes. These are as follows: The Royal Infirmary, containing 320 beds, with an annual average number of over 3800 in-patients, over 11,500 out-patients, and over 23,000 casualties; the Royal Hospital, with 191 beds, and an annual number of 3000 in-patients, over 18,000 out-patients, and over 18,000 casualties; and the Jessop Hospital for Diseases of Women, with 80 beds, over 1000 in-patients, and over 3000 out-patients; also a Maternity department, with over 350 in-patients per annum and over 500 out-patient cases attended. Special courses on Fevers are held at the City Fever Hospitals (547 beds) and on Mental Diseases at the South Yorkshire Asylum (1610 beds). For purposes of clinical practice the practices of the Royal Infirmary and Royal Hospital are amalgamated, giving a total of 511 beds for the treatment of medical, surgical, and special cases. There are special departments for the treatment of Diseases of the Eye at each institution, with wards assigned to them. In addition to these the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for Diseases of the Throat, Ear, Skin, Orthopædics, and Mental Diseases. During the last year over 6000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 45,000. The medical and surgical staffs attend daily and give clinical instruction in the wards and out-patient rooms at stated times. Clinical lectures in Medicine and Surgery are given weekly at stated times. Instruction in the practical administration of anæsthetics is given at either institution by the Anæsthetists. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—which are in the University buildings are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work and the facilities for practical study in these subjects are second to none. The department of Pathology and Bacteriology in the University is replete with every requirement for the most advanced work in these subjects. There is a large Pathological Museum in the department open daily to students. The post-mortem rooms of the Royal Infirmary and Royal Hospital are under the charge of the Professor of Pathology and afford ample material for demonstrations. In connexion with the University there is a complete dental department, fully recognised by the various examining bodies, at the Sheffield Royal Hospital.

Students who have passed their examination in anatomy and physiology can hold the usual dresserships and clerkships, the appointments being for a period of three months except in the case of casualty dresserships, which last two months. All students beginning hospital practice in Sheffield will be required to hold the post of casualty dresser before being eligible for any other of the above appointments. In addition to the laboratories above mentioned the Medical department of the University contains lecture rooms for the various subjects of the curriculum, a complete materia medica museum, and the large library and reading-room of the Medico-Chirurgical Society which is open daily to students for purposes of study.

Fees.—Composition fee of £80, payable in three instalments—viz., £24 at commencement of first year of study, £28 at commencement of second year of study, and £28 at commencement of third year of study. A composition fee of £80 entitles the student to attendance on all the courses of lectures and practical classes except pharmacy, vaccination, and instruction in anæsthetics required for a degree course in the University or for the ordinary qualifications in medicine and surgery of the Examining Boards. The composition fee does not include medical and surgical hospital practice, clinical lectures, practical instruction in mental diseases, diseases of women, and infectious diseases, the fee for the full period of both medical and surgical hospital practice required by the Examining Boards being £42 if paid in one sum at commencement of hospital practice; or £43 1*s.* if paid in two sums of 21 guineas and 20 guineas, one on beginning hospital practice, the other twelve months later.

Staff of the Royal Infirmary, Sheffield.—Physicians: Dr. W. Dyson, Dr. W. S. Porter, Dr. W. Tusting Cocking, and Dr. A. E. Barnes. Surgeons: Dr. Sinclair White, Mr. Arthur Connell, and Mr. Archibald Cuff. Medical Officer to the Skin Department: Dr. Rupert Hallam. Pathologist: Professor J. M. Beattie. Medical Officer to the Ear and Throat Department: Mr. W. S. Kerr. Ophthalmic Surgeon: Mr. G. H. Pooley. Medical Registrars: Dr. A. E. Barnes and Dr. A. G. Yates. Medical Officer in Charge of Electrical Department: Dr. Rupert Hallam. Anæsthetists: Mr. H. T. Wightman, Mr. J. Wilfred Stokes, and Dr. W. D. Mart. Clinical Pathologist: Dr. W. W King. Honorary Secretary to the Medical Staff: Mr. W. S. Kerr.

Staff of the Sheffield Royal Hospital.—Physicians: Dr. Duncan Burgess and Dr. Arthur Hall. Surgeons: Mr. Harry Lockwood and Mr. Graham Simpson. Assistant Surgeons: Mr. Garrick Wilson and Mr. F. A Hadley. Assistant Physicians: Dr. A. E. Naish and Dr. Herbert Henry. Ophthalmic Surgeon: Dr. Stanley Riseley. Assistant Ophthalmic Surgeon: Mr. Herbert Emmerson. Aural Surgeon: Dr. George Wilkinson. Physician for Mental Diseases: Mr. Gilbert E. Mould. Medical Officer to the Electrical Department: Dr. W. Harwood Nutt. Physician for Skin Diseases: Dr. E. F. Skinner. Anæsthetists: Mr. Herbert Hallam, Mr. Norton Milner, and Dr. C. Graham Murray. Pathologist: Dr. J. M. Beattie. Honorary Secretary to the Medical and Surgical Staff: Dr. Stanley Riseley. Dental Surgeons: Mr. F. G. Mordaunt, Mr. Frank Harrison, Mr. D. Dathl Davies, Mr. H. J. Morris, and Mr. C. C Drabble. Assistant Dental Surgeons: Mr. P. S. Stokes, Mr. W. J. Law, Mr. H. J. Stoner, Mr. R. Cecil Webster, and Mr. J. H. Skerritt. Honorary Secretary to the Dental Staff: Mr. W. J. Law.

There are other institutions at which the students of the University of Sheffield can receive clinical instruction. These are the City Fever Hospitals (Medical Superintendent, Dr. Egerton H. Williams), the South Yorkshire Asylum (Medical Superintendent, Dr. W. S. Kay), and the Jessop Hospital for Women, Gell-street, Sheffield. The hospital contains 56 beds for gynæcological cases and 24 for obstetric cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. A 12 weeks' course of instruction (theoretical and practical) is also provided for resident pupil midwives, the institution being approved by the Central Midwives Board as a training centre. Medical Officers: Mr. Richard Favell, Mr. Percival E. Barber, and Mr. Miles H. Phillips. Assistant Medical Officer: Mr. D. Gray Newton. Honorary Secretary to the Staff: Mr. Percival E. Barber.

UNIVERSITY OF BRISTOL.

In the Faculty of Medicine there are the following degrees:—Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.). There are also the following diplomas: Diploma in Public Health (D.P.H.), Diploma in Dental Surgery (L.D.S.), and Diploma in Veterinary State Medicine.

All candidates for degrees in Medicine, Surgery, and Dentistry are required to pass an examination called the Matriculation Examination, which must include Latin, or to pass such examination as may be regarded as equivalent by

the Senate. All courses, degrees, and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates shall be not less than 21 years of age and shall have pursued the courses prescribed by University Regulations during not less than five and a half years, of which three shall have been passed in the University, and two of these three subsequent to pass in the second examination. All candidates for the degrees of M.B., Ch.B., are required to satisfy the examiners in the several subjects of three examinations: the First Examination, the Second Examination, and the Final Examination.

The First Examination.—The subjects of examination are: Chemistry (Inorganic), Physics, and Biology, the courses pursued being those for the time being approved for the intermediate part of the B.Sc. curriculum. This part of the curriculum shall extend over one year.

The Second Examination.—The subjects of examination are: Organic Chemistry and Elementary Anatomy (Part I.) and Advanced Anatomy and Physiology (Part II.). Parts I. and II. may be passed separately or together.

The Final Examination.—The subjects of examination are: Materia Medica and Pharmacy, Pharmacology and Therapeutics. General Pathology, Morbid Anatomy, and Bacteriology (Part I.); Special Pathology, Forensic Medicine, Toxicology, and Public Health, Obstetrics (including Diseases of Women), Surgery (Systematic, Clinical, Practical, and Operative), Medicine (Systematic, Clinical, and Practical, including Mental Diseases) (Part II.). Candidates may pass I. and II. together, or separately.

Degree of Doctor of Medicine.—Candidates shall be Bachelors of the University of not less than two years' standing as such and may elect either (1) to pass an examination in General Medicine, or (2) to pass an examination in State Medicine, or (3) to present a Dissertation. The candidate who elects to pass the examination in State Medicine must hold a diploma in Public Health of some University or College, and the candidate who elects to present a Dissertation may be examined in the subject thereof.

Degree of Master of Surgery.—Candidates shall be Bachelors of not less than two years as such, during which period they shall have attended the Surgical Practice of an institution approved for the purpose. They shall pass an examination in Surgical Anatomy, Pathology, and Bacteriology, and Operative, Clinical, and General Surgery, and present to the University a Dissertation on some subject of Surgery.

Professors—Chemistry: Francis Francis, D.Sc., Ph.D. Anatomy: Edward Fawcett, M.D., C.M. Physiology: A. F. Stanley Kent, M.A. Pathology: I. Walker Hall, M.D., C.M. Obstetrics: W. C. Swayne, M.D., B.S. Surgery: C. A. Morton, F.R.C.S., and James Swain, M.D., F.R.C.S. Medicine: F. H. Edgeworth, M.D., B.C., D.Sc., and J. Michell Clarke, M.D., F.R.C.P.

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them 470 beds and extensive out-patient departments, special clinics for Diseases of Women and Children and those of the Eye, Throat, and Ear, in addition to arrangements for Dental work and large outdoor Maternity Departments.

At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for Morbid Anatomy. There are also laboratories for work in Clinical Pathology, Bacteriology, and Cytology, in which special instruction is given in these subjects. Departments are provided and well-equipped for X ray work, both for diagnosis and treatment, the various forms of Electrical treatment, including High Frequency Currents, Electric Baths, Finsen Light treatment, and Massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 140 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore upwards of 600. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments (Undergraduates).—Clinical Clerkships, Dresserships, also Ophthalmic, Obstetric, and Pathological Clerkships are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the Dressers reside in rotation free of charge.

Appointments (Post-Graduate) at the Bristol Royal Infirmary.—Two House Surgeons £100 each per annum, two House Physicians £100, Resident Obstetric and Ophthalmic House Surgeon £75, Throat, Nose, and Ear House Surgeon £75, Casualty Officer £50, Dental House Surgeon £100. All these appointments are made for 12 months, except that of Casualty Officer, which is for six months. From the resident officers a Senior Resident Officer is appointed at an additional salary of £30.

At the Bristol General Hospital.—Senior House Surgeon £150 per annum, Casualty House Surgeon £100 per annum if another resident appointment has been previously held. Two House Physicians £80, House Surgeon £80, Dental House Surgeon £200 per annum. All these appointments are for six months, except that of Dental House Surgeon, which is for two years.

Staff of the Bristol Royal Infirmary.—Honorary and Consulting Physicians: Dr. R. Shingleton Smith, Dr. H. Waldo, and Dr. J. E. Shaw. Honorary and Consulting Surgeons: Mr. E. C. Board, Mr. W. H. Harsant, Mr. A. W. Prichard, and Mr. G. Munro Smith. Honorary and Consulting Ophthalmic Surgeon: Mr. F. Richardson Cross. Honorary Physicians: Dr. A. B. Prowse, Dr. F. H. Edgeworth, Dr. J. A. Nixon (Dean), and Dr. J. R. Charles. Honorary Surgeons: Mr. J. Paul Bush, Mr. H. F. Mole, Dr. J. Swain, and Mr. T. Carwardine. Honorary Ophthalmic Surgeon: Dr. Ogilvy. Honorary Obstetric Physician: Dr. Walter Swayne. Honorary Dental Surgeon: Mr. W. R. Ackland. Honorary Physician to the Nose and Throat Department: Dr. P. Watson Williams. Honorary Assistant Dental Surgeon: Mr. F. C. Nichols. Honorary Assistant Physician: Dr. J. M. Fortescue-Brickdale. Honorary Assistant Surgeons: Mr. E. H. E. Stack and Mr. C. F. Walters. Pathologist: Dr. I. Walker Hall. Honorary Demonstrator of Morbid Anatomy: Dr. J. J. S. Lucas. Honorary Anæsthetist: Mr. A. L. Flemming. Honorary Assistant Anæsthetists: Mr. S. V. Stock and Mr. Leonard Moore. Honorary Skiagraphist: Mr. James Taylor.

Staff of the Bristol General Hospital.—Honorary and Consulting Physicians: Dr. A. J. Harrison and Dr. J. Barclay Baron. Honorary and Consulting Surgeons: Dr. George F. Atchley, Mr. Nelson C. Dobson, Mr. F. Poole Lansdown, and Mr. Chas. F. Pickering. Physicians: Dr. J. Michell Clarke, Dr. George Parker, and Dr. J. O. Symes. Surgeons: Mr. C. A. Morton, Dr. R. G. Poole Lansdown, Dr. J. Lacy Firth, and Dr. H. Greville Kyle. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to Department for Diseases of the Skin: Dr. W. Kenneth Wills. Surgeon to the Throat and Nose: Dr. J. Lacy Firth. Ophthalmic Surgeon: Mr. Cyril H. Walker. Assistant Physicians: Dr. Newman Neild and Dr. Carey F. Coombs. Assistant Surgeon: Mr. E. W. H. Groves. Assistant Physician Accoucheur: Mr. D. C. Rayner. Anæsthetists: Dr. J. Freeman and Dr. Hedley Hill. Dental Surgeon: Mr. E. A. G. Dowling. Assistant Dental Surgeon: Mr. H. J. Wyatt. Pathologist: Mr. G. Scott Williamson. Curator of Museum: Mr. G. Scott Williamson. Skiagraphist: Mr. J. Ellington Jones.

Scholarships and Prizes.—At the Bristol Royal Infirmary there are five prizes, which are restricted to perpetual students who have done the necessary qualifying work at the Infirmary. They are the Suple Medical Prize and the Suple Surgical Prize, each consisting of a gold medal of the value of 5 guineas and 7 guineas in money. The one is awarded after competitive examination in Medicine of students of the fourth and fifth years and the other after competitive examination in Surgery of students of the third and fourth years. The Henry Clark Prize, value 11 guineas, is awarded for the class work of third-year students. The Crosby Leonard Prize, value 7 guineas, is awarded after examination in Clinical Surgery, and the Augustin Prichard Prize, value 6 guineas, is awarded after examination in Surgical Anatomy.

At the Bristol General Hospital there are two scholarships and a prize, which are restricted to perpetual students who have done the necessary qualifying work at the Hospital. The Sanders Scholarship, value £22 10*s.*, is awarded after competitive examination in Medicine, Surgery, and Midwifery of fourth-year students. The Clarke Scholarship of £15 is awarded after competitive examination in surgery among students of the fourth year. The Marshall Prize,

value £12, is awarded to the best surgical dresser of the fourth year.

The Tibbits Surgical Prize of £9 9*s*. is awarded for proficiency in Practical Surgery. The Martyn Memorial Pathological Prizes of £10 each, of which there are two annually, are awarded after competitive examination in Pathology and Morbid Anatomy. A gold medal and a silver medal are given by the committees of the two institutions to the most distinguished students of the fifth year. These prizes and medals can be competed for by perpetual students of the Faculty of Medicine, University of Bristol.

Fees.—For the complete curriculum for the degrees of M.B., Ch.B., 140 guineas, or 150 guineas if paid in two instalments.

For the complete curriculum for the degree of B.D.S., including the Mechanical Laboratory work, 190 guineas; if without the Laboratory work, 115 guineas. This fee may also be paid by instalments.

For the complete curriculum for the L.D.S., including the Mechanical Laboratory, 168 guineas; if without Laboratory, 93 guineas. This fee may also be paid by instalments.

For the complete curriculum for the D.P.H., 25 guineas.

The fees for Hospital work may be paid separately. For a Medical curriculum they amount to 60 guineas; for the B.D S., 30 guineas; and for the L.D.S., 20 guineas.

Medical Practitioners and others not requiring certificates of attendance may attend the Medical and Surgical Practice of the Hospitals at the following fees:—For one month, 2 guineas; two months, 3 guineas; three months, 4 guineas; six months, 7 guineas.

Further information as to curricula and fees can be obtained from the Dean or the Registrar of the University.

UNIVERSITY OF WALES.

This University has now the privilege of granting degrees in Medicine and Diplomas in Public Health. At the three constituent Colleges of Aberystwyth, Bangor, and Cardiff there are Professors of Chemistry, Botany, Zoology, and Physics, so that the students of the University can obtain proper instruction in the ancillary subjects. The foundation of a Medical Faculty has been laid at University College, Cardiff, where there is a recognised school of medicine.

University College, Cardiff: School of Medicine.—All classes are open to both men and women students who may spend three or four out of their five years of medical study at Cardiff. The courses of instruction given at Cardiff are recognised as qualifying for the examinations of the Universities, Royal Colleges, and other licensing bodies of Great Britain and Ireland, and they are specially adapted to meet the needs of those University students studying for Cambridge and London degrees. Students who are preparing for these examinations may compound for their courses by paying a fee of £63, while a composition fee of £41 10*s*. includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board. In all cases the composition fees may be paid by instalments. Hospital instruction is given at the Cardiff Infirmary. The attention of students about to matriculate is drawn to the numerous entrance scholarships and exhibitions, varying in value from £10 to £35 per annum, offered for competition at University College, Cardiff, in April next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registrar. In the department of Public Health established in 1899 instruction is given qualifying for the D.P.H. examinations. The Council of the College has appointed a Professor of Pathology and Bacteriology. Further information may be obtained from the Dean of the Faculty of Medicine.

Lecturers.—Physics: Professor A. L. Selby. Chemistry: Professor C. M. Thompson. Zoology: Professor W. N. Parker. Botany: Professor A. H. Trow. Anatomy: Professor David Hepburn. Physiology: Professor J. B. Haycraft. Materia Medica and Therapeutics: Dr. W. Mitchell Stevens. Pathology and Bacteriology: Professor Emrys-Roberts. Hygienic Chemistry: Mr J. H. Sugden. Public Health and Hygiene: Dr. E. Walford and one Lecturer to be appointed. Midwifery (for Midwives): Dr. E. J. Maclean.

Clinical Instruction.—Students can attend the practice of the Cardiff Infirmary, which contains 196 beds.

CARDIFF INFIRMARY.—Founded 1837. 196 beds In-patients, 2483; out-patients, 21,917. Consulting Physicians: Dr. W. T. Edwards, Dr. William Taylor, and Dr. C. T. Vachell. Consulting Surgeon: Mr. T. Wallace. Consulting Dental Surgeon: Mr. John C. Oliver. Physicians: Dr. H. R. Vachell and Dr. A. E. Taylor. Surgeons: Mr. P. Rhys Griffiths, Mr. William Sheen, and Mr. J. Lynn Thomas. Assistant Physicians: Dr. W. Mitchell Stevens, Dr. Cyril Lewis, and Dr. Alfred Howell. Assistant Surgeons: Mr. H. G. Cook, Mr. Cornelius A. Griffiths, and Mr. William Martin. Ophthalmic Surgeons: Mr. F. P. S. Cresswell and Mr. R. Russell Thomas. Assistant Ophthalmic Surgeon: Mr. D. Leighton Davies. Gynæcologists: Dr. Ewen J. Maclean and Mr. E. Tenison Collins. Ear, Throat, and Nose Surgeon: Mr. D. R. Paterson. Pathologists: Dr. H. A. Schölberg and Professor Emrys-Roberts. Sanitary Adviser: Dr. E. Walford. Anæsthetists: Mr. Frederick W. S. Davies and Mr. Alexander Brownlee. Dental Surgeons: Mr. W. Kittow and Mr. Thomas Quinlan. Electrical Department: Dr. Owen L. Rhys. Resident Medical Officer: Dr. C. W. Shepherd.

SWANSEA GENERAL AND EYE HOSPITAL AND SWANSEA HOSPITAL CONVALESCENT HOME.—Hospital established 1817, Home 1903. Hospital 141, Convalescent Home built for 20 beds and one cot. Consulting Physicians: Dr. D. A. Davies, Dr. John A. Rawlings, Dr. F. Knight, and Dr. J. S. H. Roberts. Consulting Surgeons: Mr. J. Thomas and Mr. H. A. Latimer. Physicians: Dr. E. Le C. Lancaster and Dr. D. E. Evans. Surgeons: Mr. W. F. Brook and Mr. R. C. Elsworth. Obstetric Physician: Mr. R. N. Jones. Ophthalmic Surgeon: Dr. Frank G. Thomas. Assistant Ophthalmic Surgeon: Mr. H. E. Quick. Surgeon to the Throat, Nose, and Ear Department: Dr. A. F. Blagdon-Richards. Assistant Physicians: Dr. A. W. Cameron and Dr. C. L. Isaac. Assistant Surgeon: Mr. E. Reid. Vaccine Therapist: Dr. A. Clarke Begg. Medical Officers for Outdoor Patients: Mr. E. Reid, Dr. A. W. Cameron, and Dr. C. L. Isaac. Surgeon-Dentist: Mr. H. J. Thomas. Electro-Therapeutic Officer: Mr. D. R. Edwards. Anæsthetists: Dr. W. L. Griffiths, Mr. Alban Evans, and Dr. A. Clarke Begg. Resident Medical Officers—House Surgeons: Mr. Peter Chalmers and Mr. E. V. Williams. Secretary-Superintendent: W. D. Hughes. In-patients, 1932; out-patients, 9284. Convalescent Home patients, 306.

ENGLISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Under this heading we give the regulations for the examinations enforced by the Conjoint Examining Board of the Royal Colleges of Physicians of London and Surgeons of England and of the Society of Apothecaries upon students desiring their respective diplomas of qualification. We do not give any list of schools recognised by these bodies as eligible to prepare students for their examinations beyond mentioning that all the schools which we have already described (under the heading of the Universities to which they are attached) are recognised as suitable places of instruction by the corporations granting medical diplomas. The courses of study at the principal colonial medical schools are also recognised as qualifying for the examinations of these corporations.

Any candidate who desires to obtain both the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of professional study at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. Six months of the curriculum may be spent in an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.

Professional Examinations.—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Victoria Embankment,

W.C., 14 clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the *First Examination* are—Chemistry, Physics, Elementary Biology, and Practical Pharmacy. A candidate may take this examination in three parts at different times (Chemistry and Physics must be taken together until the required standard is reached in both or in one of these subjects, but a candidate will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other). A candidate will be admitted to examination in Chemistry and Physics, in Practical Pharmacy, and Elementary Biology on producing evidence of having passed the required Preliminary Examination and of having received instruction in these subjects at a recognised institution, but he may take Pharmacy at any time during the curriculum. Certificates must be produced of 180 hours' instruction and laboratory work in chemistry; 120 hours' instruction and laboratory work in physics; and 120 hours' instruction and laboratory work in biology. These courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. Synopses of the subjects of examination may be obtained on application. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry, Physics, or Biology he must produce evidence of further instruction at a recognised Institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the *First Examination* are as follows: For the whole examination, £10 10*s.*; for re-examination after rejection in Parts I. and II., £3 3*s.*; and for re-examination in each of the other parts, £2 2*s.*

The subjects of the *Second Examination* are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination on production of the required certificates of professional study. The study of Anatomy and Physiology before passing in two of first three parts of the First Professional Examination is not recognised.

A candidate referred on the *Second Examination* will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the *Second Examination* are: £10 10*s.* for the whole examination and £6 6*s.* for re-examination after rejection.

The subjects of the *Third* or *Final Examination* are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for Parts I., II., and III. of the examination separately or together at the expiration of not less than two years (24 months) from the date of passing the Second Examination, on production of the certificates of study required for the respective parts, provided that the examination is not completed before the expiration of five years from the date of passing the Preliminary Examination—viz., Part I., Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology, and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Instruction in the Administration of Anæsthetics; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum. Part II., Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser; Instruction in the Administration of Anæsthetics; and Clinical Instruction in Ophthalmology. Part III., Midwifery, of having attended all the above courses as well as Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; of having discharged the duties of Clinical Clerk in the Gynæcological Wards or Out-patient Department; and of having conducted 20 Labours.

The fees for admission to the *Third* or *Final Examination* are as follows: For the whole examination, £21. Part I. For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, Forensic Medicine, and Public Health, £5 5*s.*; for re-examination in Practical Pharmacy (if taken at this examination), £2 2*s.* Part II. For re-examination in Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances, £5 5*s.* Part III. For re-examination in Midwifery and Diseases Peculiar to Women, £3 3*s.*

A candidate referred on the *Third* or *Final Examination* will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

Students of recognised universities in England, Scotland, and Ireland, who have passed examinations for a degree in Medicine at their universities in the subjects of the First and Second Examinations of the Examining Board, may enter for the Final Examination at the expiration of two years from the date of passing in Anatomy and Physiology, on production of the required certificates.

Graduates in Medicine of certain recognised Indian, Colonial, and Foreign universities may present themselves for the Final examination under special conditions which can be ascertained on application to the Secretary.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the English Conjoint Board, the Royal College of Physicians of London and the Royal College of Surgeons of England grant honour diplomas, which no longer give the right to practise professionally if held separately. The Royal College of Physicians of London has two such diplomas, the *Fellowship* which is a purely honorary distinction and the *Membership* which is obtained by examination.

Membership.—Every candidate for the Membership of the College must furnish proof of having attained the age of 25 years. Candidates must not be engaged in trade, dispense medicine, make any engagement with a chemist, or any other person for the supply of medicine, or practise medicine or surgery in partnership, by deed or otherwise. Any candidate being already registered or having passed a qualifying examination in accordance with the Medical Act of 1886, who has obtained the degree of Doctor or Bachelor of Medicine at a University in the United Kingdom, in India, or a British colony, or who has obtained a foreign qualification entitling him or her to practise medicine or surgery in the country where such qualification has been conferred, wherein the courses of study and the examinations to be undergone previously to graduation have been adjudged by the Censors' Board to be satisfactory, will (if the Censors think fit) be admitted to the Pass Examination. The nature and extent of this examination will, in the case of each

candidate, be determined by the Censors' Board. All other candidates must produce proof of having passed the examinations required for the Licence of the College. The examination is directed partly to pathology and partly to the practice of medicine and may be modified in circumstances to be ascertained by application to the Registrar. For example, candidates under 40 years of age are examined in an ancient or modern language, a test from which their seniors are exempt. The fee for admission as a Member of the College is 40 guineas, except when the candidate for Membership is a Licentiate of the College, in which case the fee already paid for the Licence shall be deducted from the 40 guineas. The fee for the examination is £6 6*s*.

Fellowship.—The *Fellows* are selected annually from the ranks of the *Members*.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: THE FELLOWSHIP.

The Royal College of Surgeons of England confers its diploma of Fellow upon a few distinguished persons in an honorary capacity. Two Members of long standing may also be elected to the Fellowship annually. But the bulk of the Fellows obtain the diploma as the result of examination.

Fellowship.—The examination for the Fellowship is divided into two parts—viz., the First Examination and the Second Examination. The subjects of the First Examination are Anatomy and Physiology and the questions on these subjects may require an elementary acquaintance with Comparative Anatomy and Physiology. The examination is partly written and partly *vivâ voce*. The subjects of the Second Examination are Surgery, including Surgical Anatomy and Pathology. The examination is partly written and partly *vivâ voce* and includes the examination of patients and the performance of operations on the dead body. The examinations are held during the months of May and November of each year.

The fees for examination are :—First Examination, each admission, 5 guineas. Second Examination, each admission, 12 guineas. Of such examination fees 17 guineas will be reckoned as part of the fee payable upon admission to the Fellowship. The fee to be paid upon admission to the Fellowship is 30 guineas, except when the candidate is a Member of the College, in which case the fee is 20 guineas.

A Member of the College is admissible to the First Examination at any time after receiving his Diploma of Membership. A candidate who is not a member of the College is admissible to the first Professional Examination for the Fellowship on the production of evidence of having passed the First and Second Examinations of the Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England (or, if a member of a University recognised by the College for the purpose, of having passed the Examinations in his University equivalent to the First and Second Examinations of the Board) and on the production of certificates of attendance upon certain courses of study described in the Regulations.

A Member of the College is admissible to the Second Examination at any time after having passed the First Examination, on producing satisfactory evidence of having been engaged not less than six years in the study (or study and practice) of the profession.

A candidate who is not a Member of the College must possess the registrable surgical and medical degrees of universities recognised by the Council and must have been engaged in the study (or study and practice) of the profession for not less than four years subsequent to the date of obtaining the recognised qualification, one year of which shall have been spent in attendance on the Surgical Practice of a recognised hospital. The diploma of Fellow is not conferred upon successful candidates until they have attained the age of 25 years.

The Regulations may be obtained on application to the Secretary of the Examining Board, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

There are two examinations—Primary and Final. The Final examination is divided into Section I. and Section II. The Primary examination is held quarterly. Final examinations are held monthly. No examinations are held in the month of September.

The Primary examination consists of two parts. Part I. Elementary Biology; Chemistry, Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Materia Medica and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances. Part II. includes the Principles and Practice of Medicine, Pharmacology, Pathology, and Morbid Histology; Forensic Medicine, Hygiene, Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Section I. of the Final examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final examination consists of two Parts. Part I. Clinical Surgery; Part II. Clinical Medicine and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

The course of study for the *Primary examination* is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, 12 months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School recognised by the Society. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary.

The course of study for the *Final examination, Section I.*, includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of one winter and one summer session; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership, six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship, six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on 20 Midwifery cases. The course of medical study must extend over the above-mentioned period of 45 months and the offices of dresser or clinical clerk must be held at a hospital, or other institution recognised by the Society.

The course of study for the *Final examination, Section II.*, includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of 12 months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. No candidate is eligible for the Final

examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final examination the candidate must produce certificates: (1) of being 21 years of age; (2) of moral character; (3) of the course of medical study; (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board; and (5) of instruction in the administration of anæsthetics. Candidates intending to present themselves for examination are required to give 14 days' notice. A form for this purpose will be sent on application.

Licentiates are eligible for the Membership of the Society of Apothecaries. Particulars may be obtained on application to the clerk

The fee for the Licence is 20 guineas. The examination offices are open from 10 A.M. to 4 P.M.; on Saturdays from 10 A.M. to 1 P.M. All letters should be addressed to the Secretary, Court of Examiners, Society of Apothecaries of London, Blackfriars, E.C.

METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

THE institutions which follow provide to the medical student and medical graduate facilities for different forms of instruction and clinical observation. In each case further information can be obtained from the secretary of the hospital.

THE SEAMEN'S HOSPITAL SOCIETY possesses two hospitals—the *Dreadnought* Hospital at Greenwich, 250 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock-road and the other at Gravesend—from which the patients are transferred to the hospitals. The London School of Clinical Medicine is attached to the *Dreadnought* Hospital and the medical staff is as follows:—Physicians: Sir Dyce Duckworth, Bart., Dr. F. Taylor, Sir J. Rose Bradford, Dr. Guthrie Rankin, and Dr. S. Russell Wells. Surgeons: Sir William Bennett, K.C.V.O., Mr. W. Turner, and Mr. L. H. McGavin. Ophthalmic Surgeon: Mr. L. V. Cargill. Surgeon for Diseases of the Skin: Sir Malcolm Morris, K.C.V.O. Surgeon for Diseases of the Throat, Nose, and Ear: Mr. Richard Lake. Physician in charge of the Electrical Department: Dr. A. Howard Pirie. Assistant Physicians: Dr. Fredk. Langmead, Dr. G. M. Holmes, and Dr. Charles Singer. Assistant Surgeons: Mr. E. Rock Carling, Mr. C. C. Choyce, Mr. H. Curtis, and Mr. A. J. Walton. Assistant Physician for Diseases of the Skin: Dr. Wilfrid Fox. Assistant Ophthalmic Surgeon: Dr. R. Bickerton. Assistant Surgeon for Diseases of the Throat, Nose, and Ear: Mr. G. N. Biggs. Director of Pathology: Professor R. Tanner Hewlett. Anæsthetists: Dr. M. Horne, Dr. C. Hughes, and Dr. R. E. Delbruck. Dean: Mr. C. C. Choyce. Medical Superintendent: Dr. R. D. O'Leary. The London School of Tropical Medicine is attached to the Albert Dock Hospital of the Society and the medical staff is as follows:—Physicians: Sir Patrick Manson, K.C.M.G., and Dr. Andrew Duncan. Surgeon: Mr. J. Cantlie. Assistant Physicians: Dr. F. M. Sandwith and Dr. C. W. Daniels. Ophthalmic Surgeon: Mr. L. V. Cargill. Dental Surgeon: Mr. K. W. Goadby. Director: Mr. H. B. Newham. Medical Officer East India Dock-road Dispensary: Mr. W. H. F. Oxley. Surgeon Gravesend Dispensary: Mr. C. E. Robbs. Secretary: Mr. P. J. Michelli, C.M.G.

WEST LONDON HOSPITAL, Hammersmith-road, W.—This hospital has 160 beds, all of which are constantly in use. About 2600 in-patients and 44,000 out-patients, whose attendances number 151,000, are treated annually. Attached to the hospital is the West London Post-Graduate College. The practice of the hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms and demonstrations are given in the wards daily. Post-graduate lectures and demonstrations are given daily except Saturdays; notice of the commencement of each course is advertised in the medical journals. Special Classes are held in Diseases of the Throat and Nose, Skin, and Eye, and in Gynæcology, Medical Electricity, Operative Surgery, Bacteriology, Anæsthetics, Intestinal Surgery, Surface Anatomy, Blood and Urine, Clinical Microscopy, Tropical Medicine, Cystoscopy, Venereal Diseases, and Operative Ophthalmology. The accommodation for post-graduates consists of a large lecture room, together with reading, writing, and class rooms, &c. The hospital has a fully equipped pathological laboratory at which instruction is given in elementary bacteriology, a class being held every month. The fees for hospital practice, including lectures, are £6 6*s*. for three months or £15 15*s*. for one year. The certificate of the hospital is accepted by the Admiralty, War Office, Colonial Office, and India Office in cases of study leave. Further information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital. Physicians: Dr. Seymour Taylor, Dr. A. P. Beddard, and Dr. E. A. Saunders. Physician for Diseases of Women: Dr. Drummond Robinson. Assistant Physician for Diseases of Women: Dr. H. J. F. Simson. Surgeons: Mr. F. Swinford Edwards, Mr. L. A. Bidwell, and Mr. A. Baldwin. Surgeon for Diseases of the Eye: Mr. H. P. Dunn. Assistant Surgeon for Diseases of the Eye: Mr. Bishop Harman. Assistant Physicians: Dr. H. Pritchard, Dr. Grainger Stewart, and Dr. J. M. Bernstein. Assistant Surgeons: Mr. Donald Armour, Mr. John Pardoe, and Mr. Etherington Smith. Surgeon-Dentist: Mr. H. Lloyd Williams. Physician in charge of Throat and Nose and Aural Department: Dr. H. J. Davis. Physician in charge of Children's Department: Dr. E. A. Saunders. Surgeon in charge of Orthopædic Department: Mr. A. Baldwin. Pathologist: Dr. Bernstein. Dermatologist: Dr. P. S. Abraham. Administrators of Anæsthetics: Messrs. Rickard W. Lloyd, E. W. Lewis, G. P. Shuter, and Dr. H. M. Page. Assistant Anæsthetists: Dr. Austin Cooper, Dr. J. D. Mortimer, and Dr. W. E. Robinson. Electrician: Mr. E. D. MacDougal. X Ray Department: Dr. R. Morton. Medical Registrar: Dr. A. C. D. Firth. Surgical Registrar: Mr. O. Addison. Secretary of the Hospital: Mr. A. Betteridge.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—This hospital is recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. Besides the Honorary Staff there are two resident House Physicians, three resident House Surgeons, five Anæsthetists, Pathologist, and Resident Medical Officer. The hospital contains 182 beds which are now fully occupied. There is also a ward for children under five years of age. The large rectangular and circular wards, each of which contains 24 beds, the observation wards, the two operation theatres, general and special out-patient and pathological departments, are specially designed with a view of offering the greatest facilities for clinical work. An electrical department is also provided. The Pathological Department has been extended and a Director of Chinical Pathology appointed. The Reckitt Convalescent Home at Clacton-on-Sea belongs to the hospital. It contains 26 beds. Medical practitioners are cordially invited to see the general and special practice of the hospital. Demonstrations are given daily in the wards and out-patient departments and during the coming winter session there will be a weekly clinical lecture. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from the Secretary of the Medical Committee at the Hospital. Consulting Physicians: Sir S. Wilks, Bart., Sir R. W. Burnet, and Dr. E. C. Beale. Physicians: Dr. A. Morison, Dr. T. J. Horder, Dr. Symes Thompson, Dr. Hinds Howell, Dr. F. W. Price, and Dr. H. Tidy. Obstetric Physicians: Dr. G. F. Blacker and Dr. Cuthbert Lockyer. Physician for Skin: Dr. A. Whitfield. Consulting Surgeon: Mr. P. T. B. Beale. Surgeons: Mr. G. B. M. White, Mr. E. C. Stabb, Mr. V. W. Low, Mr. Arthur Edmunds, and Mr. C. C. Choyce. Ophthalmic Surgeons: Mr. A. S. Morton and Mr. A. H. Payan Dawnay. Throat and Ear Surgeons: Mr. J. Gay French and Mr. H. T. Mant. Dental Surgeon: Mr. C. Peyton Baly. Medical Officer in Charge of Electrical Department: Dr. Robert Knox. Director of Clinical Pathology: Dr. Ernest H. Shaw.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—This general hospital is in the midst of a densely populated neighbourhood of more than half a million inhabitants. It contains medical, surgical, gynæcological, and children's wards, having in all 125 beds. There are special departments for gynæcological cases, diseases of the eye, ear, throat, and nose, skin diseases, medical electricity and

radiography, and dentistry. Operations are performed every afternoon of the week (except Saturday) at 2.30 P.M. Clinical instruction, laboratory classes, and lectures are given daily in the wards and out-patient departments, laboratories, and lecture hall in connexion with the North-East London Post-Graduate College attached. There are four Resident Medical Officers, and Clinical Assistants are appointed under certain conditions. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, Secretary to the Medical Committee, 26, Welbeck-street, W.; or from Dr. A. J. Whiting, Dean of the North-East London Post-Graduate College, 142, Harley-street, W. Consulting Physicians: Sir James Reid, Bart., and Dr. Percy Kidd. Consulting Surgeons: Mr. Hooper May and Mr. Walter Edmunds. Physicians: Dr. R. Murray Leslie, Dr. G. P. Chappel, and Dr. A. J. Whiting. Assistant Physicians: Dr. A. G. Auld and Dr. T. R. Whipham. Surgeons: Mr. H. W. Carson and Mr. J. Howell Evans. Assistant Surgeon: Mr. E. Gillespie. Gynæcologist: Dr. A. E. Giles. Surgeon to Ear, Nose, and Throat Department: Mr. H. D. Gillies. Ophthalmic Surgeon: Mr. R. P. Brooks. Physician for Skin Diseases: Dr. G. Norman Meachen. Anæsthetists: Dr. C. F. Hadfield, Mr. J. F. Trewby, and Dr. Dunkley. Pathologist: Dr. Hunter Duncan. Bacteriologist: Dr. G. Macdonald. Secretary: Mr. F. W. Drewett.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. (Established 1873).—Physicians: Dr. Fenwick, Dr. Parkinson, and Dr. Addinsell. Assistant Physician: Dr. Kevin Byrne. Surgeon: Sir William J. Collins. Assistant Surgeon: Mr. H. J. Paterson. Assistant Ophthalmic Surgeon: Mr. J. Stroud Hosford. Dental Surgeon: Mr. A. Alexander. The hospital contains 100 beds. The in-patients in 1910 were 1289, and the out-patients and casualties numbered 26,396 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Operations: Mondays and Thursdays, 3.30 P.M.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—The Hampstead General Hospital (Haverstock Hill) and the North-West London Hospital (Kentish Town-road) are now amalgamated. The Hampstead General Hospital (114 beds) accommodates the in-patients from the districts hitherto served by both hospitals. The out-patients, with the exception of Hampstead casualty and emergency cases, attend exclusively at the North-West London Hospital, where there is a Resident Medical Officer as well as resident nurses. Consulting Physician: Sir Samuel Wilks, Bart. Physicians to In-patients: Dr. G. A. Sutherland and Sir John F. H. Broadbent, Bart. Surgeons to In-patients: Mr. J. Jackson Clarke and Mr. W. H. Clayton-Greene. Physicians to Out-patients: Dr. C. O. Hawthorne, Dr. A. Manuel, and Dr. Oliver K. Williamson. Surgeons to Out-patients: Mr. J. W. Thomson Walker, Mr. G. E. Waugh and Mr. H. Tyrrell Gray. Physician for Diseases of the Skin: Dr. S. E. Dore. Gynæcologist: Dr. F. E. Taylor. Ophthalmic Surgeon to In-patients: Sir William J. Collins. Ophthalmic Surgeon to Out-patients: Mr. Malcolm L. Hepburn. Throat and Ear: Mr. H. S. Barwell. Dental Surgeon: Mr. C. H. J. Acret. Anæsthetists: Dr. G. A. H. Barton and Mr. Hedley C. Visick. Pathologist: Dr. J. A. Torrens. Medical Officer, Roentgen Ray Department: Mr. S. Gilbert Scott. Further particulars from the secretary at the hospital (Haverstock Hill, N.W.).

NEW HOSPITAL FOR WOMEN, 144, Euston-road, N.W.—Physicians for In-patients: Miss Walker, M.D., and Miss Macdonald, M.B. Surgeons for In-patients: Miss Aldrich-Blake, M.D., M.S., and Miss Chadburn, M.D., B.S. Physicians and Surgeons for Out-patients: Miss Anderson, M.D., B.S., Miss Woodcock, M.D., B.S., Miss Bolton, M.D., B.S., and Miss Hamilton, M.D. Children's Department: Mrs. Flemming, M.D. Ophthalmic Surgeon: Miss Sheppard, M.B. Senior Assistants for Out-patients: Miss Fraser, M.B., Miss Stoney, M.D., Miss N. Payne, M.D., and Miss Davies-Colley, M.D., B.S. Obstetrician: Miss Turnbull, M.D. Anæsthetists: Miss Browne, L.S.A., Miss Turnbull, M.D., and Miss Payne, M.D. A considerable number of the students hold posts in the New Hospital under the visiting staff, and in return for much valued clinical teaching they do the work assigned to students in the wards of a general hospital. Secretary: Miss M. M. Bagster.

FRENCH HOSPITAL AND DISPENSARY, Shaftesbury-avenue, W.C.—This hospital, which was founded in 1867 to afford medical treatment for poor foreigners who speak the French language, has 73 beds. Physicians: Dr. G. Ogilvie and Dr. L. Williams. Physicians to the Out-patients: Dr. L. Vintras, Dr. H. Dardenne, and Dr. Alex. Manuel. Surgeons: Mr. E. Owen, Mr. H. de Méric, and Mr. W. H. Clayton-Greene. Obstetric Physician: Dr. S. Sunderland. Ophthalmic Surgeons: Mr. C. Higgens and Mr. G. W. Thompson. Dental Surgeon: Mr. M. Thomson. Honorary Anæsthetist: Mr. Walter Tyrrell. Anæsthetist: Dr. Percy Bott.

The French Convalescent Home and Retreat for Aged French People (at Brighton) contains 61 beds. Secretary: G. Pondepeyre.

GERMAN HOSPITAL, Dalston, N.E.—This hospital was founded in 1845 with the object of supplying medical aid to poor people speaking the German language and for cases of emergency and of accident. It has 130 beds, including a sanatorium with six beds and a convalescent home at Hitchin with 25 beds. Consulting Physician: Sir H. Weber. Consulting Surgeon: Mr. R. W. Parker. Physicians: Dr. F. P. Weber, Dr. K. Fürth, and Dr. D. O'C. Finigan. Surgeons: Mr. E. Michels, Mr. J. P. zum Busch, and Mr. G. J. Jenkins. Ophthalmic Surgeons: Mr. R. Gruber and Mr. C. Markus. Anæsthetist: Mr. C. Louis Leipoldt. Radiographer: Mr. N. S. Finzi. Dental Surgeon: Mr. W. West. Resident Medical Officers: Mr. G. Dorner, Mr. G. Leopold, Mr. H. Mendelsohn, and Mr. S. Mitterstiller.

ITALIAN HOSPITAL.—This institution was established in 1884 for the maintenance and medical treatment of Italian and Italian-speaking people, irrespective of their religious and political opinions, who may be suffering from sickness or bodily infirmity, but the sick poor of any nationality are also admitted for treatment. The institution also provides surgical and medical relief to Italians and others not being inmates of the hospital. It has 50 beds. Honorary Consulting Physician: Sir Dyce Duckworth. Honorary Consulting Surgeon: Sir Frederick Treves. Physicians: Cav. Uff. Dr. F. Melandri, and Cav. Dr. Vincent Dickinson. Assistant Physicians: Dr. Edwin L. Ash and Dr. G. Tallarico. Surgeon: Mr. George Lenthal Cheatle, C.B. Assistant Surgeon: Mr. T. P. Legg. Throat and Ear Department: Cav. J. Donelan. Ophthalmic Surgeon: Mr. Stanford Morton. Consulting Dental Surgeon: Cav. J. FitzGerald. Assistant Dental Surgeon: Mr. E. Whishaw Wallis. Anæsthetists: Dr. Hugh Richard Phillips and Mr. G. H. Longton.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Wednesday, and Friday at 2 P.M. In- and out-patient practice and electrical-room treatment at that hour. Consulting Physicians: Dr. Hughlings Jackson, Dr. Buzzard, Dr. Bastian, Sir D. Ferrier, and Sir William Gowers. Physicians: Dr. Ormerod, Dr. Tooth, Dr. James Taylor, and Dr. J. S. Risien Russell. Physicians for Out-patients: Dr. Aldren Turner, Dr. Batten, Dr. J. S. Collier, and Dr. F. Buzzard. Assistant Physicians: Dr. Grainger Stewart and Dr. Gordon Holmes. Surgeons: Sir Victor Horsley, Mr. Donald J. Armour, and Mr. Percy W. G. Sargent. Ophthalmic Surgeon: Mr. Leslie Paton. Laryngologist and Otologist: Mr. Sydney Scott. Gynæcologist: Dr. Walter Tate. Anæsthetists: Dr. Llewelyn Powell and Dr. Z. Mennell. Clinical clerks are appointed under the in-patient physicians. Lectures are given on Tuesdays and Fridays at 3.30. The hospital is a school of the University of London and has been recognised by the Conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, hospital practice, and fees should be addressed to the Secretary at the hospital.

BETHLEM ROYAL HOSPITAL.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They are permitted to reside in the hospital for a term generally not exceeding six months, commencing Jan. 1st and July 1st, and are provided with apartments, complete board, attendance, washing and a salary at the rate of £100 per annum. They are under the direction of the Resident Physician and are elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital and qualified practitioners and other students may attend for a period of three months on payment

of a fee. Lectures are also given in connexion with the London School of Clinical Medicine and the London Polyclinic. Resident Physician: Dr. W. H. B. Stoddart. Senior Assistant Physician: Dr. J. G. Phillips. Junior Assistant Physician: Dr. Ralph Brown.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton (333 beds).—The hospital contains 333 beds in the two buildings. The Sanatorium at Frimley contains 100 beds and 50 beds for paying patients. Six House Physicians reside in the hospital for a term of six months; their duties include attendance in the out-patient department. Pupils are admitted to the practice of the hospital: terms, £1 1*s*. for one month; three months, £2 2*s*.; perpetual, £5 5*s*. Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence on October 11th. Courses of instruction are given in the laboratories for one month (£5 5*s*.). Clinical Assistants are appointed to the Assistant Physicians in the out-patient department and Clinical Clerks to the Physicians in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. Consulting Physicians: Sir Richard Douglas Powell, Dr. F. T. Roberts, Dr. C. T. Williams, Dr. J. M. Bruce, Dr. T. H. Green, Dr. T. D. Acland, Sir J. K. Fowler, and Dr. P. Kidd. Physicians: Dr. R. Maguire, Dr. H. W. G. Mackenzie, Dr. S. H. Habershon, Dr. F. J. Wethered, Dr. P. Horton-Smith Hartley, and Dr. J. J. Perkins. Assistant Physicians: Dr. H. Batty Shaw, Dr. W. C. Bosanquet, Dr. R. A. Young, Dr. C. Wall, Dr. W. J. Fenton, and Dr. A. J. Jex-Blake. Consulting Surgeons: Lord Lister and Mr. R. J. Godlee. Surgeon: Mr. S. Boyd. Dental Surgeon: Mr. A. E. Ironside. Surgeon to Throat and Ear Department: Dr. Dundas Grant. Superintendent of Laboratories: Dr. A. C. Inman; X-ray Department: Dr. S. Melville. Resident Medical Officer: (vacant).

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—During the past year 1096 in-patients have been treated in the wards, and the large number of 42,931 cases since the opening of the wards in 1855. The number of out-patients treated during 1910 was 12,379 and 773,454 since the commencement of the institution in 1848. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Sub-committee at the hospital. Consulting Physicians: Dr. J. C. Thorowgood, Dr. Eustace Smith, Dr. Vincent D. Harris, Sir William S. Church, Bart., Dr. E. Clifford Beale, Dr. Harrington Sainsbury, Dr. G. A. Heron, and Sir Hugh Beevor, Bart. Consulting Surgeon: Lord Lister. Physicians: Dr. T. Glover Lyon, Dr. W. J. Hadley, Dr. E. H. Colbeck, Dr. Arnold Chaplin, Dr. Hugh Walsham, and Dr. O. K. Williamson. Surgeon: Mr. G. Lenthal Cheatle. Physicians to Out-patients: Dr. Clive Riviere, Dr. T. Lewis, Dr. Eric Pritchard, Dr. A. H. Miller, Dr. Haldin Davis, and Dr. Sydney Owen. Laryngologist: Mr. W. G. Howarth. Surgeon Dentist: Mr. Evelyn C. Sprawson. Secretary: Mr. George Watts. Secretary of the Medical Committee: Dr. Haldin Davis.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road. (80 beds.)—This hospital provides accommodation for 80 in-patients. Expenditure for 1910 £6919; income £6300. The attendance of out-patients averages 26,000 annually. Consulting Physicians: Dr. Horace Dobell, Dr. P. J. Hensley, and Professor D. W. Finlay. Physicians: Dr. W. H. White, Dr. A. Davies, Dr. J. Calvert, Dr. M. Leslie, Dr. J. H. Drysdale, and Dr. A. G. Phear. Assistant Physicians: Dr. H. E. Symes-Thompson, Dr. Kenneth Kellie, and Dr. Barty King. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. Pearce Gould, and Mr. W. Turner. Surgeon: Mr. Arthur Evans. Anæsthetist: Dr. G. H. Longton. Clinical Pathologist: Dr. Percy B. Ridge. Dental Surgeon: Mr. G. Thomson. Radiographer: Dr. A. C. Jordan. Resident Medical Officer: Dr. H. O. West. House Physician: Dr. R. C. Brewster. Secretary: Mr. A. T. Mays.

THE MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, HAMPSTEAD AND NORTHWOOD, CENTRAL OUT-PATIENT DEPARTMENT, Fitzroy-square, W.—The Hospitals contain 230 beds. Number of in-patients, 1410; out-patients, 2684. Resident Medical Staff. Lectures and Clinical Demonstrations are given by the Visiting Medical Staff at the Hospital at Hampstead and the Out-patient department. The next course begins in October, at the out-patient department. Clinical assistants are appointed to physicians in the wards, and in the out-patient department. Consulting Physicians: Sir Hermann Weber and Sir T. Clifford Allbutt, K.C.B. Consulting Surgeon: Sir W. Watson Cheyne, Bart. Physicians: Dr. J. Edward Squire, C.B., Dr. F. W. Tunnicliffe, Dr. George Johnston, Dr. T. N. Kelynack, Dr. T. D. Lister, Dr. A. Latham, Dr. F. W. Price, Dr. A. J. Whiting, and Dr. James Mackenzie. Pathologist: Dr. F. W. Price. Surgeon: Mr. James Berry. Laryngologist: Mr. Seccombe Hett. Anæsthetist: Dr. Herbert Scharlieb, C.M.G. Dental Surgeon: Mr. Leonard Balls. Secretary: W. J. Morton. Offices: 7, Fitzroy-square, W.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone-road, N.W.—This hospital receives about 1800 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly one-half of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all the Universities, Colleges, and licensing bodies. Pupil midwives and monthly nurses are received and specially trained. Fees: Medical Students, £8 8*s*. for four weeks; Qualified Medical Practitioners, £8 8*s*. for four weeks. Pupil Midwives (including board and lodging), £35 for five months (trained nurses £25 for four months); Pupil Nurses (including board and lodging), £24 for sixteen weeks (trained nurses £18 for 12 weeks). The new Residential College provides accommodation for 12 men at a time, students and qualified practitioners, and is opposite the hospital, with which it is in telephonic communication. Terms for residence and full board, 30*s*. per week. For further particulars application should be made to Mr. Arthur Watts, Secretary, at the hospital. Students join preferably on the first Monday in each month. Arrangements have been made whereby 14 Medical Students can now be admitted per month (168 per annum) to the practice of the hospital in order to receive preliminary instruction in Practical Midwifery in accordance with the recommendations of the General Medical Council. This instruction will include: (1) Practical instruction in the methods of examination of pregnant women; (2) delivery of women in labour under the direct supervision of a Medical Officer of the hospital; (3) practical instruction in the treatment of the mother and child during the puerperium, including clinics held four times weekly by the Visiting Medical Staff; and (4) instruction in the Clinical Laboratory of the hospital. The fee for hospital practice will be £5 5*s*. per calendar month. Students will be accommodated at the Residential College adjoining the hospital. Terms for residence and full board, 30*s*. per week. Consulting Physicians: Dr. George B. Brodie and Dr. W. S. A. Griffith. Consulting Surgeon: Mr. Alfred Willett. Physicians to In-patients: Dr. W. J. Gow, Dr. T. W. Eden, Dr. A. F. Stabb, and Dr. C. Hubert Roberts. Physicians to Out-patients: Dr. Thomas G. Stevens and Dr. R. D. Maxwell.

THE HOSPITAL FOR WOMEN, Soho-square, W.[1]—In connexion with the out-patient department there has been for some years a well-organised Clinical Department. Gentlemen are appointed to act as clinical assistants to the gynæcologists to out-patients. The appointments are open to qualified medical men and women. They are entitled to receive notice of all operations performed within the hospital, and every facility is afforded them by the gynæcologists in the out-patient department of obtaining experience in diagnosis and treatment and the practical use of instruments. Fee for one month £2 2*s*.; for each subsequent month the same. The hospital contains 67 beds. In the out-patient department there were over 4000 new cases during the past year, the total number of out-patient attendances being 14,500. This large number affords exceptional opportunities for examining and studying most of the varieties of the diseases of women. Applications should be made to the Dean. Consulting Physicians: Dr. C. H. Carter, Dr. E. Holland, and

[1] No returns.

Dr. Richard T. Smith. Consulting Surgeon: Mr. H. A. Reeves. Consulting Surgeon Dentist: Mr. Canton. Gynæcologists: Dr. J. A. Mansell-Moullin, Dr. Bedford Fenwick, Dr. James Oliver, Dr. J. H. Dauber, Dr. T. G. Stevens, and Dr. H. J. F. Simson. Surgeon: Mr. D. Drew. Assistant Surgeon: Mr. L. H. McGavin. Surgeon Dentist: Mr. W. J. May. Anæsthetists: Mr. C. J. Ogle and Dr. M. Horne. Registrar: Dr. W. A. Milligan.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—The hospital maintains 124 cots, and on an average 245 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months, subject to reappointment if desired. Clinical assistants (qualified men only) are from time to time appointed in the out-patient department. Any additional information may be obtained on applying to Mr. W. M. Wilcox, the Secretary, at the hospital. Physicians: Dr. Eustace Smith, Dr. J. A. Coutts, Dr. Morley Fletcher, Dr. E. Graham Little, Dr. A. M. Gossage, and Dr. Clive Riviere. Surgeons: Mr. W. Trotter and Mr. R. Warren. Assistant Physicians: Dr. O. K. Williamson and Dr. T. Fisher. Assistant Surgeons: Mr. J. E. Adams and Mr. S. Hastings. Ophthalmic Surgeon: Mr. F. Juler. Dental Surgeon: Mr. E. S. Pierrepont. Medical Officer for the Electrical Department: Dr. E. H. Browne Carthew. Medical Officer for the Casualty Department: Dr. E. Matthews. Resident Medical Officer: Dr. H. K. Waller. House Physician: Mr. G. Walker. House Surgeon: Mr. A. G. Hamilton. Secretary: Mr. W. M. Wilcox.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C., contains 240 beds, divided into 103 medical, 115 surgical, and 22 for special and infectious cases, besides 30 beds at the convalescent branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. The medical staff are recognised by the University of London as teachers in Diseases of Children. Appointments are made every three months to six medical clerkships, which are open to students of the hospital. Lectures or demonstrations are given once every week during both winter and summer sessions, which qualified practitioners are invited to attend free of charge. There is a museum in connexion with the hospital. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, one month, £2 2*s.*; three months, 5 guineas; perpetual ticket, 10 guineas. Clinical Clerks, 1 guinea for three months. Consulting Physicians: Dr. W. H. Dickinson, Sir Thomas Barlow, Bart., Dr. D. B. Lees, and Dr. F. G. Penrose. Physicians: Dr. A. E. Garrod, Dr. A. F. Voelcker, Dr. W. S. Colman, and Dr. F. E. Batten. Physicians to Out-patients: Dr. G. F. Still, Dr. F. J. Poynton, Dr. Robert Hutchison, Dr. H. Thursfield, and Dr. T. Thompson. Consulting Surgeons: Mr. Howard Marsh, Mr. Edmund Owen, Mr. John H. Morgan, C.V.O., and Mr. Bernard Pitts. Surgeons: Mr. W. Arbuthnot Lane, Mr. Thomas H. Kellock, Mr. H. Stansfield Collier, and Mr. Edred M. Corner. Surgeons to Out-patients: Mr. G. E. Waugh, Mr. H. A. T. Fairbank, and Mr. O. L. Addison. Ophthalmic Surgeon: Mr. W. H. McMullen. Aural Surgeon: Mr. G. E. Waugh. Dental Surgeon: Mr. W. Warwick James. Radiographer: Dr. Ironside Bruce. Local Medical Officer for Cromwell House: Dr. A. M. Henderson. Medical Registrar: Mr. R. S. Frew. Clinical Pathologist and Bacteriologist: Dr. Graham Forbes. Anæsthetists: Mr. Graham Scott, Dr. H. S. Sington, Mr. C. J. Loosely, and Mr. H. B. Wilson. Resident Medical Superintendent: Mr. L. E. Barrington Ward. Secretary: Mr. Stewart Johnson.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—This hospital contains 76 cots and a very extensive Out-patient Department. About ten clinical assistants, to work with the Honorary Medical Staff for Out-patients, are appointed quarterly for a period of three months; there is no salary attached to these posts; but, on the other hand, no fees are charged. Consulting Physicians: Sir J. F. Goodhart, Bart., Dr. Frederick Taylor, and Dr. Nestor Tirard. Physicians: Dr. J. Charlton Briscoe, Dr. T. R. Whipham, and Dr. D. Forsyth. Physicians in charge of Out-patients: Dr. H. C. Mann and Dr. Otto May. Physician in charge of Skin Department: Dr. S. Ernest Dore. Consulting Surgeons: Sir H. G. Howse, Mr. R. Clement Lucas, Mr. G. H. Makins, C.B., Sir F. S. Eve, Mr. F. C. Abbott, Mr. A. H. Tubby, and Mr. C. H. Fagge. Consulting Dental Surgeon: Mr. R. D. Pedley. Surgeons: Mr. H. S. Clogg and Mr. W. M. Mollison. Surgeons in charge of Out-patients: Mr. C. A. R. Nitch and Mr. P. Maynard Heath. Dental Surgeon: Mr. G. G. Packe. Ophthalmic Surgeon: Mr. R. E. Bickerton. Aural Surgeon: Mr. G. N. Biggs. Anæsthetist: Mr. F. D. S. Jackson. Radiographer: Mr. R. H. Cooper. House Physicians: Mr. J. J. S. Rowe and Mr. H. Steinbach. House Surgeon: Mr. R. M. R. Thursfield. Secretary: H. C. Staniland Smith.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W.—The hospital contains 104 beds and has a large out-patient department (over 1200 weekly); the home at Broadstairs has 50 beds. Consulting Physicians: Sir Francis Laking, Sir Wm. Henry Allchin, and Dr. Ridge Jones. Consulting Surgeons: Mr. Cowell, Mr. Pickering Pick, and Mr. D'Arcy Power. Physicians: Dr. Walter Carr, Dr. Humphry D. Rolleston, Dr. Edmund Ivens Spriggs, Dr. Charles Miller, Dr. Reginald Jewesbury, and Dr. A. C. D. Firth. Physician to Skin Department: Dr. J. M. H. MacLeod. Surgeons: Mr. H. F. Waterhouse, Mr. Joseph Cunning, and Mr. Fedde Fedden. Surgeons to the Out-patients: Mr. S. Maynard Smith, Mr. Ralph Thompson, and Mr. Harold W. Wilson. Ophthalmic Surgeon: Mr. C. Devereux Marshall. Dental Surgeon: Mr. Francis R. Smyth. Anæsthetists: Dr. Randolph Grosvenor, Dr. W. B. Grandage, and Dr. F. Stanley Hewett. Electro-Therapeutic and Radiographic Department: Mr. E. S. Worrall. Resident Medical Officer: Mr. J. B. de W. Molony. House Surgeon: Mr. M. K. Nelson. House Physician: Mr. M. N. Woods. Secretary: Mr. H. G. Evered. Out-patients are seen as under:—Diseases of the Eye: Wednesday, 2 P.M. Diseases of the Skin: Wednesday, 1.30 P.M. Whooping-cough Cases: Friday, 2.30 P.M. Medical and Surgical Cases: Mornings at 9.30. Dental Cases: Thursday, 1.30 P.M. Accidents and urgent cases are admitted at any time.

THE QUEEN'S HOSPITAL FOR CHILDREN (*late North-Eastern Hospital for Children*), Hackney-road, Bethnal Green, N.E. (Telephone 305 Dalston.) For the sick children of the poor under 12 years of age. Established 1867. 134 beds in London and 30 at the seaside branch, "Little Folks" Home, Bexhill.—During the past year 1970 in-patients and 32,975 out-patients (representing 84,317 attendances and including 17,175 casualty cases) were relieved, 741 of the in-patients being under two years of age. Consulting Physicians: Dr. W. Cayley, Dr. W. Pasteur, Dr. W. A. Wills, and Dr. James Taylor. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. Waren Tay, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. H. Percy Dean. Physicians: Dr. J. Porter Parkinson, Dr. Sheffield Neave, and Dr. R. A. Chisolm. Assistant Physicians: Dr. Eric Pritchard, Dr. Eric Bellingham-Smith, Dr. Sidney Owen, and Dr. Alexander Gow. Surgeons: Mr. Douglas Drew and Mr. P. Lockhart Mummery. Assistant Surgeons: Mr. Stephen Fenwick and Mr. Blundell Bankart. Ophthalmic Surgeon: Mr. Sydney Stephenson (Thursday, 2.30 P.M.). Physician in charge of Skin Department: Dr. J. L. Bunch. (Wednesday, 1.30 P.M.). Surgeon in charge of the Ear, Nose, and Throat Department: Mr. W. G. Howarth (Monday, 10 A.M., and Thursday, 9 A.M.). Dental Surgeon: Mr. S. F. Rose (Tuesday, 9.30 A.M., and Friday, 2.30 P.M.). Medical Radiographer: Dr. William Hampson. Pathologist and Registrar: Dr. A. W. G. Woodforde. Resident Medical Officer: Dr. L. B. Perry. Four other resident medical men (appointed half-yearly)—viz., two House Physicians and two House Surgeons. Matron: Miss Bushby. Secretary: Mr. T. Glenton-Kerr. The surgeons attend on Wednesdays at 2 P.M. and Fridays and Saturdays at 9.30 A.M.; the physicians daily at 2 P.M., except Saturday, 9.30 A.M., and Wednesday, 9.30 A.M., as well as 2 P.M. Applications for permission to attend the practice of the hospital should be addressed to the secretary.

ROYAL LONDON OPHTHALMIC HOSPITAL (Moorfields, 1804–1899), City-road, E.C. 138 beds.—This hospital, known as Moorfields Eye Hospital, was moved in 1899 to

larger buildings in City-road. In 1910 there were 2128 in-patients, the new out-patients were 50,484, and the attendances were 118,963. Operations are performed daily from 10 A.M. to 1 P.M. and four surgeons attend on each day. Students are admitted to the practice of the hospital. Fee for six months, £3 3*s.*; perpetual, £5 5*s.* Courses of instruction on the following subjects are given at the hospital periodically: (1) examination of the eye; (2) the use of the ophthalmoscope; (3) errors of refraction; (4) external diseases of the eye; (5) surgical anatomy of the eye; (6) motor anomalies; (7) pathology of the eye; (8) practical pathology; (9) bacteriology; (10) operative surgery; (11) X ray work; and (12) clinical lectures. A composition fee of £10 10*s.* will entitle students of the hospital to a perpetual ticket and will admit them once to all the above lectures and demonstrations except the classes on practical pathology, bacteriology, operative surgery, and X ray work. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. J. Couper, Mr. E. Nettleship, Sir John Tweedy, Mr. W. Tay, and Mr. A. S. Morton. Consulting Medical Officer to the X Ray Department: Mr. J. M. Davidson. Physician: Dr. J. Taylor. Surgeons: Mr. W. Lang, Mr. J. B. Lawford, Mr. E. T. Collins, Mr. W. T. H. Spicer, Mr. P. Flemming, Mr. J. H. Fisher, Mr. A. Lawson, Mr. C. D. Marshall, Mr. J. H. Parsons, and Mr. C. Worth. Assistant Surgeons: Mr. G. Coats and Mr. M. L. Hepburn. Medical Officer to the X Ray Department: Mr. E. W. H. Shenton. Curator and Librarian: Mr. A. C. Hudson. Bacteriologist: Mr. S. H. Browning. Four Refraction Assistants; 3 Resident House Surgeons; 26 Chief Clinical Assistants; 20 Clinical Assistants; and 15 Junior Assistants.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—The hospital contains 40 free beds. Patients, who number over 14,000 annually, are seen at 1 P.M., and operations performed daily at about 2 P.M. The following are the days of attendance of the surgeons: Mr. Grimsdale and Mr. Brewerton, Mondays and Thursdays; Mr. Roll and Mr. McMullen, Tuesdays and Fridays; and Mr. Dodd and Mr. Cruise, Wednesdays and Saturdays. The practice of the hospital is open to practitioners and students. Fees for six months, £3 3*s.*; perpetual, £5 5*s.* Students of the hospital are eligible for the posts of house surgeon, assistant house surgeon, pathologist, and clinical assistants. Special demonstrations and lectures will be given during the session, commencing early in October; for details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgical Staff are appointed twice a year for periods of six months. Secretary: Mr. John Hy. Johnson.

ROYAL EYE HOSPITAL, St. George's-circus, Southwark, S.E.—There are 40 beds and 2 cots. There were 75,470 attendances in the Out-patient Department last year and the new patients numbered 24,184. Operations are performed, and out-patients are seen daily at 9 A.M. and 2 P.M. The following are the days of attendance:—Afternoons: Sir William J. Collins, Wednesdays; Mr. L. V. Cargill, Tuesdays; Mr. J. Stroud Hosford, Mondays and Fridays; Mr. E. Brooksbank James, Mondays and Thursdays; and Mr. E. A. Dorrell, Saturdays. Mornings: Dr. H. Willoughby Lyle, Tuesdays and Fridays; Mr. A. D. Griffith, Mondays, Thursdays, and Saturdays; and Mr. E. A. Dorrell, Wednesdays. Courses of clinical and practical instruction in Ophthalmology will be given, commencing October, January, and May. In addition special lectures and clinical demonstrations will be given by the hospital staff on dates to be announced. Fee for the course, including three months' hospital practice, £3 3*s.* Tutorial classes for the various examinations arranged as far as possible to suit candidates. Clinical assistantships are open to fully qualified practitioners who have received a course of instruction at the hospital. Further particulars may be obtained from the Dean, J. Stroud Hosford, F.R.C.S.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—This hospital has 26 beds and possesses facilities for clinical teaching daily. Last year there were 417 in- and 13,587 out-patients (entailing 31,242 attendances). Classes of instruction in the various branches of Ophthalmology will be held during the winter session, commencing in October. The out-patient work begins at 1 o'clock and operations are performed daily between 1 and 4. Consulting Physician: Sir Dyce Duckworth, Bart. Consulting Surgeon: Mr. T. Brittin Archer. Surgeons: Mr. Ernest Clarke, Mr. A. P. L. Wells, and Mr. Stephen Mayou. Assistant Surgeons: Mr. A. C. Hudson, Mr. J. F. Cunningham, and Mr. A. Levy. Physician: Dr. Charles O. Hawthorne. Pathologist: Mr. Stephen Mayou. House Surgeon: Mr. A. A. Campbell. Dentist: Mr. E. P. May. Secretary: Mr. H. R. S. Druce.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—In addition to the new In-patient Department and operation theatre the hospital has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year 11,404 out-patients (involving 53,665 attendances) and 727 in-patients were treated. The fee for three months' attendance, 5 guineas; for six months, 8 guineas. The post-graduate teaching consists of successive series of practical demonstrations by the members of the staff delivered twice weekly during the winter and summer sessions. They are so arranged that practitioners joining at any part of the course are enabled to complete the group of subjects. A special Operative Surgery class is held at intervals. The fee for each course is 2 guineas, with daily attendance at the out-patient department during the period of the course. Details of subjects, &c., will be afforded by the Dean. Considerable attention is given to scientific work, particularly with regard to Bacteriology of the ear and respiratory passages. Operation days: in-patients, Monday, Tuesday, Wednesday, Thursday, and Friday, at 2 P.M.; out-patients, daily at 9 A.M. Consulting Physicians: Dr. Arthur Orwin and Dr. Purves Stewart. Consulting Surgeon: Sir Watson Cheyne, Bart. Consulting Ophthalmic Surgeon: Mr. Stanford Morton. Surgeons: Dr. Dundas Grant, Dr. Percy Jakins, Mr. Chichele Nourse, Dr. Abercrombie, Mr. Stuart-Low, and Dr. Andrew Wylie. Assistant Surgeons: Dr. Atkinson, Dr. McKenzie, and Mr. Gay French. Pathologist: Dr. Wyatt Wingrave. Dental Surgeon: Mr. Whishaw Wallis. Assistant Dental Surgeon: Mr. Henning James. Anæsthetists: Mr. W. Hotten George and Dr. Beresford Kingsford. Assistant Anæsthetists: Dr. Mortimer and Dr. Crampton In addition the following appointments are open to qualified members of the profession:—Six Registrars, tenable for twelve months; and sixteen Clinical Assistants, tenable for three or six months. Dean: Dr. Wyatt Wingrave. Secretary: Mr. Richard Kershaw.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Clinical Demonstrations on the Diseases of the Throat, Nose, and Ear are given daily at 2 P.M. and on Tuesday and Friday evenings at 6 P.M. Operations are performed daily at 9.30 A.M. Individual instruction is given in the examination of cases to students attending the hospital. Fees: one month's attendance, £1 1*s.*; three months, £2 2*s.*; perpetual, £5 5*s.* Detailed information may be obtained from the Hon. Secretary of the Medical Committee. Surgeons: Mr. Claud Woakes, Dr. G. Cathcart, Dr. W. H. Kelson, and Mr. Atwood Thorne. Assistant Surgeons: Mr. Sommerville Hastings, Dr. Irwin Moore, and Mr. Francis Muecke.

THE METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL.—The hospital was founded in 1838 and is situated in Grafton-street, Tottenham-court-road. The out-patient department is opened daily at 2.30 P.M. to all medical practitioners and senior students for acquiring clinical instruction and technical knowledge. Operations upon in-patients are performed on Tuesdays, Wednesdays, Thursdays, and Fridays at 10 A.M. Fee for one month's attendance at the hospital £1 1*s.*, and for three months £2 2*s.* During the forthcoming session practical demonstrations will be given by members of the staff on the diagnosis and treatment of diseases of the ear and respiratory passages. Each course may commence at any time. Consulting Surgeons: Mr. G. Saunders and Mr. J. Pickett. Surgeons: Mr. H. Pegler, Mr. F. Spicer, Mr. W. J. Horne, Mr. J. C. Potter, and Mr. B. Jones. Assistant Surgeons: Mr. A. L. Murison and Mr. E. W. Bain. Anæsthetists: Mr. C. Looseley, Mr. D. J. Munro, Mr. J. D. Mortimer, and Mr. R. Pollard. Dentist: Mr. J. A. Bowes.

ROYAL EAR HOSPITAL, Dean-street, Soho. (Founded 1816.)—Courses of instruction of a practical character in Diseases of the Ear and Nose are given by the members of the staff throughout the year. Clinical assistants are also appointed. Students may join at any time. For information address the Honorary Secretary of the Medical Board, Royal Ear Hospital, Dean-street, Soho. Surgeons: Mr. M. Yearsley, Mr. Richard Lake, Mr. R. S. Cocke, Mr. E. A.

Peters, and Mr. H. A. Kisch. Anæsthetists: Dr. Harold Siugton, Mr. Lawson, Dr. Maclean, and Dr. H. B. Wilson. Ophthalmic Surgeon: Mr. H. W. Lyle. Dental Surgeon: Mr. F. W. Barrett.

ST. PETER'S HOSPITAL FOR STONE AND OTHER URINARY DISEASES, Henrietta-street, Covent Garden. Established 1860. New Hospital opened 1882.—Honorary Surgeons: Mr. F. Swinford Edwards and Mr. P. J. Freyer. Assistant Surgeons: Mr. John Pardoe, Mr. J. W. Thomson Walker, and Mr. J. Swift Jolly. The hospital contains 30 beds for men and 2 beds for women and children. Consultations are held and operations are performed each Wednesday and Friday at 2 P.M. Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 P.M. Average beds occupied daily, 29; average out-patients seen daily, 125.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C. Rebuilt 1905.—The in-patient department, 40 beds, is at 262, Uxbridge-road, W. The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 4 P.M., and every evening (except Saturday) 6 to 8. At the afternoon clinics specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, will be given. The X ray department is in operation every afternoon except Saturday. The Chesterfield Lectures by Dr. Morgan Dockrell are given on Thursdays at 6 P.M., October to March, commencing on Oct. 5th, in the lecture room at 49, Leicester-square. At the end of the course the Chesterfield silver medal may be competed for by those who have attended three-fourths of the lectures. Physicians: Dr. Morgan Dockrell, Dr. W. Griffith, Dr. J. L. Bunch, and Dr. Knowsley Sibley. Surgeon: Mr. M. K. Hargreaves. Electro-Therapeutist: Dr. W. Hampson. There is a well-equipped laboratory where special courses in Pathology and Bacteriology of the Skin may be arranged for.

LONDON LOCK HOSPITAL AND RESCUE HOME.—This institution consists of a hospital for females in the Harrow-road and a hospital for males in Dean-street, Soho. At the latter branch an out-patient department is attached and both sexes receive treatment. In the female branch there are 145 beds and 312 patients were admitted in 1910. In the male branch there are 16 beds which during 1910 accommodated 168 patients. 32,251 out-patients were treated. Patients are seen at Dean-street on Mondays from 1 to 2 P.M. and from 6 to 8 P.M.; on Tuesdays and Wednesdays from 6 to 8 P.M.; on Fridays from 2 to 3 P.M. (female patients); and on Saturdays from 2 to 4 P.M. Consulting Surgeons: Mr. Buxton Shillitoe and Mr. J. A. Bloxam. Consulting Ophthalmic Surgeon: Mr. Henry Edward Juler. Physician: Dr. Sidney Phillips. Surgeons: Mr. J. Ernest Lane, Mr. Arthur Shillitoe, and Mr. Charles Gibbs. Surgeons to Out-patients: Mr. Charles Gibbs, Mr. Arthur Shillitoe, Mr. Charles Ryall, Mr. Herbert J. Paterson, and Mr. J. E. R. McDonagh. Pathologist: Mr. H. W. Bayly. Dental Surgeon: Mr. Spencer-Pierrepont. House Surgeon at the Female Hospital: Mr. Washington E. Wilks. House Surgeon at the Male Hospital and Out-patients' Department: Mr. A. Forster.

ENGLISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

Under this heading we include all the hospitals which are recognised by the English Royal Colleges for a part of the required attendance on medical and surgical practice, for medical clerkships, and surgical dresserships. The list includes nearly every hospital of a general character in the country having more than 150 beds, though occasionally a large hospital is omitted because equally good opportunities are afforded to students at other institutions in its neighbourhood, while a small hospital may be included because no such facilities for study are present elsewhere. The list is arranged alphabetically as to the town where the hospital is located.

BATH ROYAL UNITED HOSPITAL, Bath.—This hospital contains 130 beds. Consulting Physician: Dr. A. E. W. Fox. Consulting Surgeons: Mr. R. J. H. Scott, Mr. F. K. Green, and Mr. T. D. Ransford. Physicians: Dr. G. A. Bannatyne, Dr. T. W. Smith, and Dr. E. J. Cave. Assistant Physicans: Dr. G. E. Bowker, Dr. L. H. Walsh, and Dr. R. Waterhouse. Surgeons: Mr. H. G. Terry, Mr. F. Lace, and Mr. F. Fraser. Assistant Surgeons: Mr. W. S. Melsome, Mr. E. L. Fuller, and Mr. W. G. Mumford. Physician to Electrical Department: Dr. P. King. Pathologist and Curator of Museum: Dr. R. Waterhouse. Anæsthetist: Mr. A. de V. Blathwayt. Assistant Anæsthetist: Dr. F. G. Thomson. Dental Surgeon: Mr. W. J. Royal. Assistant Dental Surgeon: Mr. S. Carter. Secretary: Mr. J. M. Sheppard. House Surgeon: Dr. A. J. Bruce-Leckie. House Physician: Dr. V. Wiley.

BEDFORD COUNTY HOSPITAL, Bedford.—This hospital has 100 beds. Consulting Physician: Dr. G. P. Goldsmith. Consulting Surgeons: Mr. E. C. Sharpin and Mr. R. H. Kinsey. Physicians: Dr. R. Coombs and Dr. W. Phillips. Surgeons: Mr. W. Gifford Nash and Mr. Henry Skelding. Ophthalmic Surgeon: Dr. H. Goldsmith. Assistant Physicians: Dr. A. C. Perram and Dr. G. T. Birks. Assistant Surgeons: Dr. S. J. Ross and Mr. Walter Sharpin. Dental Surgeon: Mr. F. W. Williams. Secretary: Mr. W. F. Morley.

BRADFORD ROYAL INFIRMARY, Bradford.—This hospital contains 210 beds. Consulting Physicians: Dr. Reginald G. Alexander, Dr. Herbert C. Major, and Dr. David Goyder. Physicians: Dr. Henry J. Campbell, Mr. Thomas Wilmot, Dr. Richard Honeyburne, and Dr. F. W. Eurich. Consulting Surgeons: Mr. Philip E. Miall and Mr. Harry Meade. Surgeons: Mr. Charles F. M. Althorp, Dr. Thomas J. Wood, Mr. John B. Hall, and Mr. James Phillips. Gynæcologist: Dr. A. C. F. Rabagliati. Laryngologist: Dr. Andrew Little. Electrical Department: Mr. William Mitchell. Assistant Surgeons: Mr. Francis W. Goyder and Mr. Peter McEwan. Assistant Physicians: Dr. John B. Dunlop and Dr. William Wrangham. Dental Surgeon: Mr. Arthur A. Matthews.

THE ROYAL SUSSEX COUNTY HOSPITAL, Brighton (195 beds).—This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed clinical research and bacteriological department. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding 20 guineas, as the Committee of Management shall direct. Consulting Physicians: Dr. Rutter, Dr. Hollis, and Dr. Branfoot. Physicians: Dr. J. F. G. Dill, Dr. Hobhouse, and Dr. Maynard. Assistant Physicians: Dr. W. Broadbent, Dr. Hall, and Dr. Bailey. Consulting Surgeons: Mr. H. P. Blaker, Mr. W. Furner, and Mr. T. J. Verrall. Surgeons: Mr. R. F. Jowers, Mr. F. J. Paley, and Mr. A. H. Buck. Assistant Surgeons: Mr. T. H. Ionides, Mr. W. A. Bowring, and Mr. H. W. Fletcher. Honorary Medical Clinical Assistant: Dr. C. H. Benham. Honorary Surgical Clinical Assistant: Mr. A. G. Bate. Ophthalmic Surgeon: Mr. W. W. Griffin. Dermatologist: Dr. A. W. Williams. Dental Surgeon: Mr. W. R. Wood. Assistant Dental Surgeon: Mr. T. S. Worboys.

KENT AND CANTERBURY GENERAL HOSPITAL, Canterbury.—The hospital contains 104 beds. Pupils of the staff are admitted to the practice of the hospital and have the use of the library of the East Kent and Canterbury Medical Society for £7 7s. Operation day, Thursday, 11 A.M. Physicians: Dr. Harold Wacher and Dr. M. T. Williams. Consulting Surgeons: Mr. James Reid and Mr. Frank Wacher. Surgeons: Mr. J. Greasley, Mr. Sidney Wacher, Mr. Z. Prentice, and Dr. T. Whitehead Reid. Dentist: Mr. R. S. N. Faro. Secretary: Mr. Arthur J. Lancaster.

DERBYSHIRE ROYAL INFIRMARY, Derby.—This hospital contains 259 beds. Consulting Physicians: Dr. Charles A. Greaves, Dr. Winfred Benthall, and Dr. G. Rice. Physicians: Dr. Edmund Vaudrey, Dr. Maurice Parry-Jones, and Dr. Hugh Barber. Consulting Surgeons: Mr. John A. Sharp, Mr. Charles H. Hough, and Mr. John L. Wright. Surgeons: Dr. Richard H. Luce, Mr. John A. Southern, Mr. Francis L. A. Greaves, and Mr. John E. Kilvert. Ophthalmic Surgeon: Mr. Edwin Collier Green. Gynæcologist: Mr. Henry T. Hicks. Anæsthetists: Mr. W. St. A. St. John, Dr. J. D. C. Allen, and Dr. J. W. King. Pathologist: Dr. Hugh Barber. Dental Surgeons: Mr. Charles J. Allin and Mr. J. Montague Murphy.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Medical and Surgical Staff: Consulting Physician: Dr. Drake. Physicians: Dr. H. Davy and Dr. William Gordon. Surgeons: Mr. J. D. Harris, Mr. E. J Domville, Mr. Charles E. Bell, and Mr. A. C. Roper. Assistant Physician and Pathologist: Mr. Reginald V. Solly. Surgical Registrar and Assistant Pathologist: Mr. Robert Worthington. Surgeon Dentist: Mr. J. M. Ackland. Anæsthetists: Mr. Henry

Andrew and Mr. J. Shirley Steele-Perkins. The hospital contains 200 beds (including special children's wards) and has a good library, museum, dissecting room, and post-mortem room. Attendance on the practice of this hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery on application to the House Surgeon. There is also a Private Nursing Staff attached to the hospital. For particulars as to fees, &c., apply to the Matron. A new wing was added in 1897. Arrangements may be made by which gentlemen in practice desiring to increase their qualifications may have the use of the museum and library and other facilities and by which students may attend midwifery. A new Operating Theatre was opened in 1906 (the gift of Mrs. Nosworthy of Newlands, Dawlish, Devon). An Electrical Treatment Department (the gift of Mrs. M. A. Sanders) was opened in 1907 by Lady Duckworth-King.

WEST OF ENGLAND EYE INFIRMARY, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Mr. A. C. Roper and Mr. Ransom Pickard. Assistant Surgeon: Mr. G. P. Hawker. Secretary: Mr. Sidney E. Whitton. The infirmary contains 64 beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1910, 3147.

THE GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester.—This hospital, which was granted the title of "Royal" on the occasion of King Edward VII.'s visit to Gloucester in the year 1909, has 140 beds. Consulting Surgeons: Mr. J. P. Wilton, Mr. T. S. Ellis, Mr. R. M. Cole, and Mr. H. E. Waddy. Physicians: Dr. O. W. Clark and Dr. W. W. Grosvenor. Assistant Physician: Dr. D. E. Finlay. Surgeons: Mr. E. D. Bower, Mr. W. Washbourn, and Mr. G. W. Ancrum. Ophthalmic Surgeon: Mr. E. D. Bower. Assistant Surgeon: Mr. C. V. Knight. Secretary: Mr. H. P. Pike. In-patients, 1506; out-patients, 9130.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for over 200 patients, including Children's wards, and a special department for the treatment of Diseases of the Eye, so that there are excellent facilities for acquiring a practical knowledge of the profession. An appeal has just been issued, and great efforts are being made to raise the sum of £35,000, with the object of carrying out certain alterations and additions to the buildings—notably a new Out-patient Department, new wards to the Children's Pavilion, and other improvements. Of this sum £31,000 have already been promised. The new laundry has been in use for some eight or nine months, and the foundation-stones of the new out-patient department were laid on July 7th last. Physicians: Dr. S. King Alcock, Dr. H. Nicholls, and Dr. J. Russell. Surgeons: Dr. G. Stokes Hatton, Dr. Wheelton Hind, and Mr. Reginald Alcock. Assistant Physicians: Dr. W. E. L. Horner, Dr. G. H. Sowry, and Dr. E. C. Myott. Assistant Surgeons: Dr. W. C. Allardice, Dr. Harold Hartley, and Mr. Eric E. Young. Ophthalmic Surgeon: Mr. Herbert H. Folker. Assistant Ophthalmic Surgeon: Mr. R. H. Dickson. Medical Officers in Charge of the Electrical Department: Dr. G. H. List and Dr. A. H. John. Dental Surgeon: Mr. R. J. Hall. Secretary and House Governor: Dr. T. Basil Rhodes.

HULL ROYAL INFIRMARY, Hull.—This hospital contains 249 beds. Consulting Physician: Dr. Edward O. Daley. Consulting Surgeons: Sir John Sherburn, Mr. Thomas M. Evans, and Mr. Robert H. B. Nicholson. Consulting Ophthalmic Surgeon: Dr. W. C. Rockliffe. Physicians: Dr. Frank Nicholson, Dr. Frank C. Eve, and Dr. Edward Turton. Surgeons: Mr. Edmund H. Howlett, Mr. Alfred G. Francis, Mr. Henry W. Pigeon, and Mr. Edward Harrison. Ophthalmic Surgeon: Mr. A. Legge Roe. Assistant Ophthalmic Surgeon: Dr. Duncan A. Mackay. Assistant Surgeons: Mr. Harold Upcott, Mr. Edward M. Hainworth, Mr. Robert Grieve, and Mr. Guy B. Nicholson. Dental Surgeon: Mr. John C. Storey. Assistant Dental Surgeon: Mr. Arthur W. Turton. Anæsthetists: Mr. Harry L. Evans and Dr. A. T. Sissons.

LEICESTER INFIRMARY, Leicester.—Instruction in the infirmary for first-year students is duly recognised by the various examining bodies. At the General Infirmary there are 230 beds, and at the Children's Hospital in connexion 42; total 272. A new wing containing 100 beds was recently opened by H.R.H. the Duchess of Argyll, and a new Nurses' Home containing separate accommodation for 100 nurses has also been opened. A reconstruction scheme has been carried out, and £100,000 spent on bringing the accommodation of the institution to a modern standard of efficiency. This scheme has included the provision of two modern operating theatres, as well as a self-contained out-patients' department. There are eight resident medical officers—viz., two house surgeons, one house physician, two assistant house surgeons, one assistant house physician, and two dressers. All receive salaries. The dressers are given an honorarium of £10 10*s*. on completion of six months' satisfactory service. Consulting Surgeon: Mr. George C. Franklin. Physicians: Dr. Frank M. Pope, Dr. Reginald Pratt, and Dr. Astley V. Clarke. Surgeons: Mr. Charles J. Bond, Mr. Claude Douglas, Mr. Henry J. Blakesley, and Mr. Cecil E. Marriott. Ophthalmic Surgeon: Mr. Nicholas C. Ridley. Aural Surgeon: Dr. Frederick W. Bennett. Physicians to Out-patients: Dr. Robert Sevestre and Dr. T. Villiers Crosby. Surgeons to Out-patients: Mr. John S. Sloane and Mr. F. Bolton Carter. House Governor and Secretary: Mr. Harry Johnson.

NORTHAMPTON GENERAL HOSPITAL, Northampton—Two new wings were opened in 1904 and the old buildings entirely renovated and re-arranged. The number of beds is 166. Non-resident pupils are received and have every opportunity of acquiring a practical knowledge of their profession. The fee is £10 10*s*. Pupils can be received at any time. Physicians: Dr. Frank Buszard and Dr. Peverell S. Hichens. Surgeons: Mr. George H. Percival and Dr. R. A. Milligan. Ophthalmic Surgeon: Mr. E. Harries Jones. Assistant Physician: Dr. W. M. Robson. Assistant Surgeon: Mr. N. Blake Odgers. Dental Surgeon: Mr. E. Rogers Bull.

NORFOLK AND NORWICH HOSPITAL, Norwich.—This hospital has 230 beds. Non-resident pupils admitted. Fees: For three months, £3 3*s*.; for six months, £5 5*s*.; as permanent pupil, £8 8*s*. Consulting Physician: Sir P. Eade. Consulting Surgeons: Dr. Beverley and Mr. H. S. Robinson. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. S. H. Burton, Mr. D. D. Day, and Mr. H. A. Ballance. Assistant Physician: Dr. A. J. Cleveland. Assistant Surgeons: Mr. E. W. Everett, Mr. A. J. Blaxland, and Mr. D. K. Coutts. Dental Surgeon: Mr. H. F. White. Electro-Therapeutist: Dr. A. J. Cleveland. Secretary: Mr. F. G. Hazell.

NOTTINGHAM GENERAL HOSPITAL.—This hospital contains 246 beds. Consulting Physician: Dr. Henry Handford. Physicians: Dr. Charles H. Cattle, Dr. Frank H. Jacob, and Dr. William T. Rowe. Assistant Physicians: Dr. James C. Buckley and Dr. Samuel Ernest Gill. Consulting Surgeons: Mr. Rupert C. Chicken and Mr. Joseph Thompson. Surgeons: Dr. H. Owen Taylor, Mr. Alexander R. Anderson, Mr. Robert G. Hogarth, and Mr. W. Morley Willis. Assistant Surgeons: Mr. Charles H. Allen and Mr. Alexander Robert Tweedie. Dental Surgeon: Mr. John Battersby.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—This hospital contains 158 beds. Consulting Physician: Dr. R. H. Clay. Physicians: Dr. E. L. Fox and Dr. A. B. Soltau. Consulting Surgeons: Mr. P. Swain and Mr. R. H. Lucy. Surgeons: Mr. W. L. Woollcombe, Mr. H. W. Webber, and Mr. G. F. Aldous. Assistant Surgeons: Mr. C. E. R. Rendle, Mr. W. Crosbie Hamilton, and Mr. G. C. F. Robinson. Pathologist: Dr. W. L. Pethybridge. Physician in charge of X Ray and Finsen Light Department: Dr. W. Cheyne Wilson. Anæsthetists: Mr. C. H. Whiteford and Mr. E. G. Smith. Registrar and Out-patient Anæsthetist: Mr. G. S. Earl. Emergency Anæsthetist: Mr. W. L. Hodge. Dental Surgeon: Mr. G. R. Brittan.

THE ROYAL HOSPITAL, Portsmouth (founded 1847).—The number of beds is 146. Honorary Physicians: Dr. John Phillips and Dr. W. P. McEldowney. Surgeons: Mr. C. P. Childe, Mr. T. A. M. Forde, and Mr. A. B. Wright. Honorary Anæsthetist: Dr. W. J. Essery. Honorary Assistant Physicians: Dr. J. T. Leon, Dr. E. J. Davis Taylor, and Dr. H. Farncombe. Honorary Assistant Surgeons: Mr. L. Cole Baker, Mr. C. A. Scott Ridout, and Mr. H. Burrows. The hospital is a preparatory School of Medicine and Surgery; the attendance of pupils at this hospital is recognised by the Examining Boards. Particulars of the Secretary at the hospital.

ROYAL BERKSHIRE HOSPITAL, Reading.—This hospital contains 168 beds. Consulting Surgeon: Mr. James H.

Walters. Physicians: Dr. Charles W. Marriott and Dr. Francis H. Hawkins. Assistant Physicians: Dr. William T. Freeman and Dr. George S. Abram. Surgeons: Mr. William J. Maurice and Dr. J. A. P. Price. Assistant Surgeons: Dr. Lansdown M. Guilding and Mr. William J. Foster. Aural Surgeon: Mr. Arthur Roberts. Ophthalmic Surgeon: Mr. Richard P. Brooks. Consulting Dental Surgeon: Mr. Allan L. Goadby.

SALISBURY GENERAL INFIRMARY, Salisbury.—This hospital contains 120 beds. Consulting Physician: Dr. G. G. Morrice. Physicians: Dr. W. W. Ord and Mr. J. E Gordon. Surgeons: Mr. L. S. Luckham, Dr. C. G. B. Kempe, and Dr. E. T. Fison. Surgeon Dentist: (vacant). Secretary: Mr. S. B. Smith. In-patients, 86, weekly average; out-patients, 1111; attendances on casuals, 3230; dental cases, 566. Assistant Secretary: Mr. G. F. Henbest.

SALOP INFIRMARY, Shrewsbury.—This hospital has 130 beds. Consulting Physicians: Dr. E. Burd, Mr. R. W. O. Withers, Dr. E. Lycett Burd, and Dr. E. Cureton. Physicians: Dr. H. W. Gardner, Dr. R. H. Urwick, and Dr. C. V. Bulstrode. Consulting Surgeon: Mr. W. Eddowes. Surgeons: Mr. A. Jackson, Mr. H. H. B. MacLeod, and Mr. L. J. Godson. Ophthalmic Surgeon: Mr. C. G. Russ Wood. Pathologist: Dr. Paul Mathews. Radiographer: Mr. W. F. Buckle. Dental Surgeon: Mr. W. E. Harding. Secretary: Mr. Joseph Jenks. In-patients, 1242; out-patients, 2771; out-patients' attendances for the year, 26,039.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL, Southampton.—This hospital contains 130 beds. Physicians: Dr. J L. Thomas and Dr. N. E. Aldridge. Assistant Physicians: Dr. H. P. Ward, Dr. J. H. P. Fraser, and Dr. B. N. Tebbs. Surgeons Extraordinary: Mr. W. Sims and Mr. A. B. Wade. Surgeons: Mr. H. W. Shettle, Mr. J. R. Keele, and Mr. W. P. Purvis. Assistant Surgeon: Mr. G. H. Cowen. Throat and Ear Surgeon: Mr. W. P. Purvis. Dental Surgeon: Mr. A. Saunders. Electro-Therapeutic Department: Dr. N. E. Aldridge. Secretary: Mr. T. A. Fisher-Hall. In-patients, 2194; out-patients, 10,603.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—This hospital has 77 beds. Honorary Consulting Physician: Dr. G. Reid. Physicians: Dr. C. Reid and Dr. L. Gray. Surgeons: Mr. F. M. Blumer and Mr. F. H. Marson. Assistant Honorary Surgeon: Mr. F. N. Cookson. Ophthalmic Surgeon: Mr. A. B. Cridland. Surgeon Dentist: Mr. W. H. Ridge. Secretary: Mr. R. Battle. In-patients, 988; out-patients, 4469.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—This hospital has 108 beds. Honorary Consulting Physicians: Dr. W. M. Harman and Dr. H. E. Wingfield. Physicians: Dr. G. F. A. England. Dr. A. E. Bodington, and Dr. G. A. Tullis. Surgeons: Mr. C. Wace. Mr. H. J. Godwin, and Mr. F. J. Child. Honorary Ophthalmic Surgeon: Mr. J. F. Bullar. Honorary Dental Surgeon: Mr. L. M. Balding. Secretary: Mr. A. D. White.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—There are 200 beds. Special departments for Children, Gynæcology, Ear, Throat, and Nose Diseases, Electro-therapeutic and X ray departments. There is an excellent library. The resident officers are a resident surgical officer, a resident medical officer, and two house surgeons. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3*s*. a quarter, £10 10*s*. the first year, and £5 5*s*. subsequent years. A course of Practical Pharmacy is given by the dispenser. Fee £3 3*s*. for three months. Applications should be made to the Secretary of the Medical Committee.

Staff.—Consulting Physician: Dr. W. Millington. Consulting Surgeon: Mr. W. H. T. Winter. Physicians: Dr. H. Malet and Dr. J. A. Codd. Surgeons: Mr. E. Deanesly, Mr. A. H. Hunt, and Mr. W. F. Cholmeley. Assistant Physicians: Dr. A. H. Carter, Dr. E. H. Coleman, and Dr. T. H. Galbraith. Assistant Surgeons: Mr. H. Dent and Mr. C. A. Stidston. Anæsthetists: Dr. E. W. Strange and Mr. David Mann.

WORCESTER GENERAL INFIRMARY, Worcester.—This hospital has 132 beds. Consulting Physician: Dr. E. H. W. Swete. Physicians: Dr. G. W. Crowe, Dr. M. Read, and Dr. H. A. Watson. Consulting Surgeons: Mr. G. E. Hyde and Mr. T. Bates. Surgeons: Mr. T. P. Gostling, Mr. C. Pollard, and Mr. T. Bates, jun. Secretary: Mr. W. Stallard. In-patients, 1262; out-patients, 6581.

YORK COUNTY HOSPITAL, York.—This hospital contains 150 beds. Consulting Physician: Dr. Richard Petch. Physicians: Dr. Richard Turner. Dr. William A. Evelyn, and Dr. J. S. Gayner. Consulting Surgeon: Mr. Frederick Shann. Surgeons: Mr. William H. Jalland, Mr. G. Wilfred Gostling, Dr. Noel L. Hood, and Mr. Gerald S. Hughes. Consulting Ophthalmic Surgeon: Dr. Tempest Anderson. Ophthalmic Surgeon: Dr. Peter Macdonald. Electro-therapeutic Department: Dr. Hinton E. Bateman. Anæsthetist: Mr. Robert Fell. Consulting Dental Surgeon: Mr. Walter Glaisby. Dental Surgeons: Mr. Leonard A. Glaisby and Mr. H. W. Mace.

II.—SCOTLAND.

THE UNIVERSITIES.

UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

A diploma in Tropical Medicine and Hygiene (D.T.M. and H.) is granted to graduates in Medicine and Surgery of the University of not less than six months' standing. The course of study includes (1) Practical Bacteriology; (2) Diseases of Tropical Climates; (3) Tropical Hygiene; (4) a Practical Course in Medical Entomology and Protozoology and Venomous Animals; and (5) a Course of Clinical Instruction in Tropical Diseases. Any two of these courses may be taken under Extra-academical Teachers and exemption from the latter course may be granted to those graduates who have been engaged for a period of at least 12 months in the treatment of Tropical Diseases in any tropical or subtropical country. The examinations for the diploma, which will embrace all the foregoing subjects, are held in December and July of each year.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin or Greek.

No one is admitted to the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least 100 lectures, or 50 lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of

25 meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the Pharmaceutical Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, Practical Anæsthetics, Diseases of Children, Diseases of the Larynx, Ear, and Nose, and Diseases of the Skin, or such other special departments as may from time to time be determined. The candidate must have attended, under the superintendence of a registered medical practitioner, 25 cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general hospital or other public charitable institution and have conducted personally 12 or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court. Of the subjects of study, 16 in number—viz., Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh, which corresponds to the two years above referred to.

Women are admitted to graduation in medicine under practically the same conditions as men, excepting that, until provision is made in the University for instruction of women in all subjects of the medical curriculum, the regulations as to places of study contained in the foregoing paragraph do not apply to them. Women who study in Edinburgh receive their instruction from recognised Extra-Academical Teachers, who are Lecturers in the School of Medicine for Women, Surgeons' Hall.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—First, in Chemistry, Zoology, Botany, and Physics; second, in Anatomy and Physiology; third, in Materia Medica and Therapeutics and Pathology; and fourth, in Surgery, Medicine, Midwifery, Forensic Medicine, and Public Health, and clinically in Medicine, Surgery, and Gynæcology in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes. Candidates who have passed their examination in the first division of these subjects may be admitted to examination in the second division at the end of their third winter session. Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in the third division at the end of the fourth winter session. Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in the fourth or final division when they have completed the fifth year of study.

Under a new medical ordinance it is provided that candidates may pass all or any of the subjects of the first division—viz., Botany, Zoology, Physics, or Chemistry—at a university in the United Kingdom or at any other university approved by the Senate for this purpose, when such subjects qualify for a degree in arts or science. In the second division the examination in Physiology may be taken at any time and in Anatomy at any time after the first half session of the third winter session. In the third division the examination in Pathology may be taken at any time after the end of the third summer session in the case of students who begin the medical curriculum in October and at the end of the fourth summer session in the case of students who begin their medical curriculum in May. In Materia Medica the examination may be taken at any time after the end of the fourth winter session. Candidates may be admitted to examination in Practical Pharmacy and in the physical, chemical, and botanical characters of medicinal substances at any examination held after they have completed the qualifying course of study, but not later than the examination in Materia Medica. In the fourth division a student, after taking the prescribed courses of study, may be examined in Forensic Medicine and Public Health at any time, in Midwifery, Practice of Medicine, and Surgery at any time after the end of the fifth winter session, and in Clinical Medicine (including the subject of Diseases Peculiar to Women) and Clinical Surgery at the end of the fifth year of study. This new ordinance applies to students who entered the University at or after the beginning of the winter session 1907, but students who entered before that date have the option of finishing their course under the existing regulations or of taking advantage of the new ordinance.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2*s.*, and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First Division of the Examination (Botany, Zoology, Physics, and Chemistry), £6 6*s.*; for the Second Division (Anatomy, and Physiology), £5 5*s.*; for the Third Division (Pathology and Materia Medica and Therapeutics), £4 4*s.*; and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, Midwifery, Clinical Gynæcology, and Forensic Medicine and Public Health), £7 7*s.*

Bachelors of Medicine and *Bachelors of Surgery* may proceed to the degrees of *Doctor of Medicine* and *Master of Surgery* after they have spent one year in the medical or surgical wards respectively of a hospital, or the Military or Naval Medical Services, or in scientific work bearing directly on their profession, or two years in practice. In each case an examination must be passed and a thesis submitted for approval of the Faculty. The fee to be paid for the degree of M.D. is £10 10*s.*, and the fee to be paid for the degree of Ch.M. is £10 10*s.*

Diploma in Psychiatry.—Courses of instruction have also been instituted for a Diploma in Psychiatry, open to all legally qualified Medical Practitioners who conform with the Regulations. There shall be two examinations for the Diploma, the first comprising the subjects of Anatomy of the Nervous System; Physiology, Histology, and Chemistry of the Nervous System; Pathology of the Brain and Nervous System; and Practical Bacteriology in its relation to Mental Diseases; and the second examination comprising the subjects of Psychology with Experimental Psychology, Clinical Neurology, and Psychiatry (systematic and clinical). The fee for each examination shall be £5 5*s.*

Professors—Chemistry: James Walker, D.Sc., F.R.S. Zoology: J. Cossar Ewart, M.D. Botany: I. Bayley Balfour, M.D. Physiology: E. A. Schäfer, F.R.S. Anatomy: Arthur Robinson, M.D. Pathology: William Smith Greenfield, M.D. Materia Medica: Sir Thomas R. Fraser, M.D., F.R.S. Forensic Medicine: Harvey Littlejohn, M.B., F.R.C.S.E. Public Health: C. Hunter Stewart, M.B., D.Sc. Midwifery: Sir John Halliday Croom, M.D. Surgery: Alexis Thomson, M.D., F.R.C.S.E. Medicine: John Wyllie, M.D. Clinical Surgery: F. M. Caird, M.B., F.R.C.S. Clinical Medicine: Sir Thomas R. Fraser, W. S. Greenfield, M.D., and J. Wyllie, M.D.

Scholarships and Prizes.—In the University of Edinburgh many bursaries, scholarships, prizes, &c., are given, some of which, by the nature of the subject or by the conditions attached, are restricted to Medical Students, while others are open to Students in two or more Faculties, of which Medicine may be one. In the following list the money

value, the subjects of examination, or other system of selection, and any special conditions that may be imposed, are placed in that order. As "continued study" is a condition in a considerable proportion of the cases it has not been thought necessary to repeat these words.

For Students entering on or in their First Year.—Sibbald Bursaries for entrants, one or two annually, tenable for three years, each £30 per annum, Preliminary Subjects; Heriot Bursaries for entrants, seven for men and one for women annually, tenable for three years, each £30 per annum, Preliminary Subjects; Thomson Bursary, £25 per annum, tenable for four years, Distinction in Medical Preliminary Examination; Grierson Bursary No. 1, £20, Distinction in Medical Preliminary Examination; Crichton Bursaries, six annually, tenable for four years, each £50 per annum, Distinction in Medical Preliminary Examination with extra subjects, birth in Scotland; Mackie Bursary No. 1, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Junior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Chemistry; Coldstream Memorial Scholarship for intending Medical Missionaries, tenable for five years, £25 per annum; three Vans Dunlop Scholarships, Nos. 1, 2 and 3, each tenable for three years, £100 per annum, one for first place in Medical Preliminary Examination, one for Chemistry and Physics, one for Botany and Zoology; Thomson Scholarship, tenable for four years, £40 per annum, Botany, Zoology, and Mechanics.

For Students entering on or in their Second Year.—Mackie Bursary No 2, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Grierson Bursary No. 2, £20, Chemistry, Botany, Zoology, and Physics; Senior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Physiology; Sibbald Scholarship, tenable for three years, £40 per annum, Chemistry, Botany, Zoology, and Physics; Neil Arnott Prize, £37 10*s.*, Distinction in Natural Philosophy in the M.A. Examination.

For Students entering on or in their Third Year.—Grierson Bursary No. 3, £20, Anatomy and Physiology. Vans Dunlop Scholarships Nos. 4 and 5, tenable for three years, £100 per annum, one in Physiology and one in Anatomy.

For Students entering on their Fourth or Fifth Year or for Graduates.—Syme Surgical Fellowship, tenable for two years, £100 per annum, Thesis by M.B. of not more than three years' standing; Goodsir Memorial Fellowship, tenable for two years, £100 per annum, Thesis by M.B., &c., of not more than three years' standing; Leckie Mactier Fellowship, tenable for three years, £80 per annum, competition among M.B.'s of not more than three years' standing; Freeland Barbour Fellowship, £100, highest marks in Anatomy, Physiology, and Pathology in Professional Examinations, with one year's research in Midwifery as a condition; Allan Fellowship, about £55, Clinical Medicine and Clinical Surgery; three Vans Dunlop Scholarships, Nos. 6, 7, and 8, tenable for three years, £100 per annum, one in Pathology and Surgery, one in Materia Medica and Medicine, and one in Forensic Medicine, Public Health, and Midwifery; Murchison Memorial Scholarship, interest on £1000 Clinical Medicine; Stark Scholarship, £112, Clinical Medicine, with Research in Clinical Medicine as a condition; Buchanan Scholarship, £40, Midwifery and Gynæcology, with work in gynæcological ward as a condition; James Scott Scholarship, £32 10*s.*, Midwifery, with work in maternity hospital as a condition; Ettles Scholarship for the most distinguished M.B., Ch.B of the year. £31; Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology, tenable for one, two, or three years, £100 each per annum, competition among graduates; Mouat Scholarship, £55 and medal, Class and Degree Examinations in Practice of Physic; two Grierson Bursaries, Nos. 4 and 5, £10 each, one in Materia Medica and one in Pathology; McCosh Graduate's Bursary and McCosh Medical Bursary for Research, income of £5500, Distinction in Professional Subjects and Knowledge of Foreign Languages, with the condition of Study or Research in Medical Schools of Europe; Gunning Victoria Jubilee Prizes, four awarded annually, each £50, Thesis or Original Research in Anatomy, Physiology, Zoology, Botany, Chemistry, Materia Medica, Surgery, Practice of Physic, Pathology, Obstetrics, Medical Jurisprudence, and Public Health respectively; Theses Gold Medals for the best Theses for the M.D. degree; Conan Doyle Prize for the most distinguished Graduate of the year from South Africa, £32; Wightman Prize, £12, Clinical Reports on Medical Cases; Beaney Prize, £32 10*s.*, highest marks in Anatomy, Surgery, and Clinical Surgery, in M.B. and Ch.B. Examinations; Annandale Gold Medal awarded to the best candidate in Clinical Surgery for the degrees of M.B., Ch.B.; Ellis Prize, £28, Essay on Animal or Vegetable Physiology; Cameron Prize, for the most valuable addition to Practical Therapeutics during the preceding five years, annual proceeds of £2000; Milner Fothergill Gold Medal, about £20, Essay on Pharmacological or Therapeutic subject; Mackay Smith Scholarship for Students in Chemistry, tenable for two years, £25 per annum; Houldsworth Scholarship for Students or Graduates, £40, Materia Medica, with the condition of Research in Pharmacology; Mackenzie Bursaries, two annually, £20, Practical Anatomy; Pattison Prize, about £11 7*s.* 6*d.*, Clinical Reports of Surgical Cases; Dobbie Smith Gold Medal for a Botanical Essay; Anderson Henry Prize for a Botanical Essay, proceeds of £300 accumulated for three years; Dorothy Gilfillan Memorial Prize for the most distinguished Woman Graduate of the year, about £10.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1000 students avail themselves each session of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards. A post-graduate vacation course commences on August 31st.

The anatomy rooms and laboratories will open on Tuesday, Oct. 3rd, and the lectures will commence on Oct. 10th.

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school, including the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have held the office of clerk in their wards for at least six months. Six Residentships are appointed for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the Governing Board of the school call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Nicolson-square, and the New School, Bristo-street.

Lecturers and Fees.—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Dr. Ryland Whitaker (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Mr. Gemmell and Dr. T. W. Drinkwater*; Physiology (Institutes of Medicine), Dr. Alex. Goodall (£3 5*s.*); General Pathology, &c., Dr. Shennan and Dr. James Miller (£3 5*s.*); Biology, Mr. Malcolm Laurie (£3 5*s.*); Zoology, Mr. Malcolm Laurie; Physics, Dr. Dawson Turner (£3 3*s.*); Meteorology, Dr. Dawson Turner (£2 2*s.*); Bacteriology, Dr. Taylor Grant, Dr. Theodore Shennan, and Dr. James Miller: Practice of Physic, Dr. Byrom Bramwell, Dr. R. A. Fleming, Dr. Lovell Gulland, Dr. W. Russell, Dr. Harry Rainy, and Dr. E. Bramwell

(£3 5s.); Surgery, Mr. Scot Skirving, Mr. Dowden, Mr. Chiene, Mr. H. Wade, Mr. J. W. Struthers, Mr. W. J. Stuart, and Mr. L. Beesly (£3 5s.); Materia Medica, &c., Dr. Craig and Dr. F. D. Boyd† (£3 5s.); Midwifery, &c., Dr. Hart, Dr. Ballantyne, Dr. Haig Ferguson, Dr. Fordyce, Dr. Lamond Lackie, Dr. Elsie Inglis, Dr. McGibbon, Dr. Barbour Simpson, Dr. Davidson, and Dr. Watson (£3 5s.); Medical Jurisprudence, &c., Dr. Aitchison Robertson and Dr. Macmillan (£3 5s.); Public Health, Dr. Aitchison Robertson, Dr. W. Robertson, and Dr. Macmillan; Hospital Practice (Edinburgh Royal Infirmary): Physicians, Dr. Bramwell, Dr. Gibson, Dr. Philip, and Dr. Brewis for Gynæcology; Surgeons, Mr. Cotterill, Mr. Cathcart, Mr. Hodsdon, Mr. Wallace, and Mr. Miles (perpetual ticket, £12); Clinical Medicine, Dr. Byrom Bramwell, Dr. Gibson, and Dr. Philip; Dr. Brewis for Gynæcology (£3 5s.); Clinical Surgery, Mr. Cotterill, Mr. Cathcart, Mr. Hodsdon, Mr. Wallace, and Mr. Miles (£3 5s.); Diseases of the Chest, Dr. Philip† and Dr. Lovell Gulland (£2 2s.); Vaccination, Dr. Buist† and Dr. W. G. A. Robertson (£1 1s.); Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2s.); Diseases of the Eye, Dr. Sym† and Dr. J. V. Paterson (£2 2s.); Ophthalmoscopy, Dr. A. H. H. Sinclair (£2 2s.); Gynæcology, Dr. Haig Ferguson and Dr. Elsie M. Inglis (Systematic), Dr. Brewis and Dr. J. Haig Ferguson (Clinical), and Dr. J. W. Ballantyne (Advanced) (£2 2s.); Neurology, Dr. J. J. Graham Brown (£2 2s.); Clinical Methods, Dr. W. Russell (£2 5s.); Medical Electricity, Dr. Dawson Turner (£2 12s. 6d.); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2s.). Summer Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£2 2s.); Practical Physiology, Dr. Goodall (£3 3s.); Biology, Mr. M. Laurie‡ and Dr. Newbigin (£3 3s.); Practical Chemistry and Analytical Chemistry, Mr. Gemmell and Dr. Drinkwater §; Practical Bacteriology, Dr. Shennan, Dr. Taylor Grant, and Dr. James Miller; Materia Medica, Dr. Craig and Dr. F. D. Boyd; Diseases of the Eye, Dr. Sym and Dr. J. V. Paterson (£2 2s.); Medical Psychology and Insanity, Sir J. Batty Tuke and Dr. John Keay (£2 2s.); Medical Jurisprudence, Dr. Aitchison Robertson, and Dr. J. Macmillan; Public Health, Dr. Wm. Robertson (£2 2s.); Gynæcology, Dr. Brewis (£2 2s.); Midwifery Lectures, Dr. Ballantyne, Dr. Haig Ferguson, Dr. W. Fordyce, Dr. Lamond Lackie, Dr. Elsie Inglis, Dr. McGibbon, Dr. Barbour Simpson, Dr. Davidson, and Dr. Watson (£3 5s.); Operative Surgery, Mr. Dowden, Mr. Scot Skirving, Mr. Chiene, Mr. H. Wade, Mr. J. W. Struthers, Mr. W. J. Stuart, and Mr. L. Beesly (£3 3s.); Practical Pathology, Dr. Shennan and Dr. James Miller (£3 8s.); Physics, Dr. Turner‡ (£3 3s.); Practical Medicine and Physical Diagnosis, Dr. Fleming, Dr. Lovell Gulland, and Dr. Harry Rainy (£3 3s.); Clinical Medicine, Dr. Bramwell and Dr. Gibson (£2 2s.); Vaccination, Dr. Buist and Dr. W. G. A. Robertson (£1 1s.); Neurology, Dr. Bruce and Dr. Graham Brown; Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2s.); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2s.); Medical Electricity, Dr. Dawson Turner; Meteorology, Dr. Dawson Turner.

Special Classes for Women, Winter Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£4 4s.); Chemistry (Lectures and Practical), Dr. T. W. Drinkwater (£3 5s. and £3 3s.); Practice of Physic, Dr. E. Matthew (£3 5s.); Surgery, Mr. Beesly (£3 5s.); Midwifery and Diseases of Women, Dr. J. W. Ballantyne; General Pathology, Dr. James Miller (£3 5s.); Physiology (Institutes of Medicine), Dr. Goodall (£3 5s.); Materia Medica, &c., Dr. Craig (£3 5s.); Clinical Medicine, Dr. Lovell Gulland, Royal Infirmary (£3 5s.); Clinical Surgery, Mr. Miles, Royal Infirmary (£3 5s.); Physics, Dr. Dawson Turner (£3 3s.); Vaccination, Dr. W. G. A. Robertson (£1 1s.); Practical Gynæcology, Dr. Brewis (£2 2s.); Diseases of the Eye, Dr. W. G. Sym; Bacteriology, Dr. J. Taylor Grant; Tropical Diseases, Major D. G. Marshall; Fevers, City Hospital. Summer Session: Practical Anatomy, Dr. Ryland Whitaker (£2 2s.); Practical Chemistry, Dr. T. W. Drinkwater (£3 3s.); Materia Medica, &c., Dr. Craig (£3 3s.); Operative Surgery and Surgical Anatomy, Mr. Beesly (£3 3s.); Materia Medica and Therapeutics, Dr. Wm. Craig (£3 3s.); Practical Materia Medica, Dr. Wm. Craig; Medical Jurisprudence and Public Health, Dr. Aitchison Robertson (£3 5s.); Public Health, Dr. W. Robertson; Clinical Medicine, Dr. W. Russell; Clinical Surgery, Mr. Miles, Royal Infirmary (£3 5s.); Practical Physiology and Histology, Dr. Goodall (£3 3s.); Practical Pathology, Dr. James Miller (£3 3s.); Biology, Dr. Newbigin (£3 3s.); Physics, Dr. Dawson Turner (£3 3s.); Ophthalmology, Dr. Sym (£2 2s.); Insanity, Sir J. Batty Tuke and Dr. John Keay (£2 2s.); Practical Gynæcology, Dr. J. W. Ballantyne (£2 2s.); Practical Medicine, Clinical Methods, Dr. W. Russell; Vaccination, Dr. W. G. A. Robertson; Tropical Diseases, Major Marshall; Medical Electricity, Dr. Dawson Turner.

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, payment of which is distributed over the period of study. There is no composition fee.

Further particulars regarding the school, also its calendar, may be had on application to the Dean of the School, 11, Bristo-place, Edinburgh.

* Lectures, £3 5s.; Practical, £3 3s.; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3s.; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.—The Edinburgh School of Medicine for Women provides all the classes required for a complete curriculum. The classes qualify for the University Degree in Medicine, for the Diploma of the Royal Colleges, and for the Triple Qualification. The lecturers of the school are specially recognised by the Court of Edinburgh University for the education of women who propose taking the degree in medicine of the University of Edinburgh. Most of the classes are held in Surgeons' Hall. The office of the school and a sitting-room and other conveniences are provided in the same building for the use of the women students. The clinical instruction of the students is conducted in the wards of the Royal Infirmary, specially set apart for the purpose; in the Royal Hospital for Sick Children; in the City Hospital for Infectious Diseases; at Bangour Asylum; and at the various public dispensaries. The fees and the regulations as to the course of study are the same as for the male students. Further particulars can be obtained from the Dean of the School of Medicine for Women, Surgeons' Hall, Edinburgh.

Clinical Instruction.—ROYAL INFIRMARY, Edinburgh.—This hospital has over 900 beds and 60 cots for children, the average daily number of patients for 1909 being 845. Beds are set apart for clinical instruction by the professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the ordinary physicians and surgeons. Special instruction is given on Diseases of Women, Physical Diagnosis, Diseases of the Skin, Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin, and also to cases of Incidental Delirium or Insanity. There are also large and complete Medical-Electrical and X Ray and Bathing Departments. Three wards are specially set apart for Clinical Instruction to Women Students. Post-mortem examinations are conducted in the anatomical theatre by the pathologist and his assistants, who also give practical instruction in Pathological Anatomy and Histology. The fees for hospital attendance are as follows—viz: Perpetual ticket, in one payment, £12; annual ticket, £6 6s.: six months, £4 4s.; three months, £2 2s.; monthly, £1 1s. Separate payments amounting to £12 12s. entitle the student to a life ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows:—1. Resident physicians and surgeons are appointed and live in the house free of charge. The appointment is for six months but may be renewed at the end of that period by special recommendation. 2. Non-resident house physicians and surgeons and clinical assistants are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologist.

Staff: Medical Department.—Consulting Physicians: Sir

J. O. Affleck and Dr. Alexander James. Consulting Gynæcologists: Professor Sir J. Halliday Croom and Emeritus Professor Sir A. R. Simpson. Consulting Physician for Diseases of the Skin: Dr. W. Allan Jamieson. Professors of Clinical Medicine: Sir T. R. Fraser, Dr. W. S. Greenfield, and Dr. John Wyllie. Ordinary Physicians and Lecturers on Clinical Medicine: Dr. Byrom Bramwell, Dr. Geo. Gibson, Dr. R. W. Philip, Dr. W. Russell, and Dr. G. Lovell Gulland. Gynæcologists: Dr. A. H. F. Barbour and Mr. N. T. Brewis. Physician for Diseases of the Skin: Dr. Norman Walker. Assistant Physicians: Dr. J. J. Graham Brown, Dr. Francis D. Boyd. Dr. R. A. Fleming, Dr. Harry Rainy, Dr. Chalmers Watson, Dr. Edwin Bramwell, Dr. Edwin Matthew, and Dr. W. T. Ritchie. Assistant Gynæcologists: Dr. J. Haig Ferguson and Dr. Wm. Fordyce. Assistant Physicians for Diseases of the Skin: Dr. Fred. Gardiner and Dr. R. Cranston Low. Medical Electrician: Dr. Dawson Turner. Assistant Medical Electrician: Dr. Hope Fowler.

Surgical Department.—Consulting Surgeons: Mr. Joseph Bell, Mr. A. G. Miller, Dr. C. W. MacGillivray, and Emeritus Professor John Chiene, C.B. Consulting Ophthalmic Surgeon: Mr. George A. Berry. Consulting Aural Surgeons: Dr. P. McBride and Dr. McKenzie Johnston. Consulting Dental Surgeon: Mr. William Guy. Regius Professor of Clinical Surgery: Mr. F. M. Caird. Professor of Surgery: Mr. Alexis Thomson. Ordinary Surgeons: Mr. J. M. Cotterill, Mr. C. W. Cathcart, Mr. J. W. B. Hodsdon, Mr. D. Wallace, and Mr. Alexander Miles. Ophthalmic Surgeons: Dr. George Mackay and Dr. Wm. G. Sym. Surgeons to Ear and Throat Department: Dr. A. Logan Turner and Dr. J. Malcolm Farquharson. Dental Surgeon: Mr. J. H. Gibbs. Assistant Surgeons: Mr. J. W. Dowden, Mr. A. A. Scot Skirving, Mr. Geo. L. Chiene, Mr. W. J. Stuart, Mr. J. W. Struthers, Mr. Henry Wade, and Mr. Scott Carmichael. Assistant Ophthalmic Surgeons: Dr. J. V. Paterson and Dr. A. H. H. Sinclair. Assistant Surgeons to the Ear and Throat Department: Dr. John S. Fraser and Dr. John D. Lithgow. Pathologist: Dr. Theodore Shennan. Assistant Pathologists: Dr. James Miller and Dr. Murray Drennan. Superintendent: Sir Joseph Fayrer, Bart.

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital contains 120 beds, and is fitted with every modern improvement. A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. Full particulars can be obtained from the Registrar at the hospital.

Staff.—Consulting Physicians: Dr. J. Carmichael, Dr. J. Playfair, and Dr. T. M. Burn Murdoch. Consulting Surgeon: Dr. J. Bell. Consulting Surgeon Dentist: (vacant). Pathologist: Dr. W. E. Carnegie Dickson. Ordinary Physicians: Dr. G. H. M. Dunlop, Dr. J. Thomson, and Dr. J. S. Fowler. Surgeon: Mr. H. J. Stiles. Ophthalmic Surgeon: Mr. G. A. Berry. Assistant Surgeon: Mr. C. Balfour Paul. Medical Electrician: Dr. J. W. Spence. Extra Physicians: Dr. W. B Drummond, Dr. J. W. Simpson, and Dr. Dingwall Fordyce. Anæsthetists: Dr. D. C. A. M'Allum and Dr. J. Politachi.

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH, 6, Cambridge-street, Lothian-road.—Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 P.M. for out-door Ear, Nose, and Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeons: Dr. Joseph Bell, Dr. Logan Turner (Ear, Nose, and Throat Department). Surgeons: Dr. William George Sym, Dr. Malcolm Farquharson, Dr. J. V. Paterson, Dr. E. M. Lithgow, Dr. W. G. Porter, and Dr. John M. Darling. Honorary Clinical Pathologist: Dr. Ian Struthers Stewart. Honorary Anæsthetist: Mr. J. H. Gibbs. Dental Surgeon: Mr. G. W. Watson. Treasurer and Secretary: Mr. J. P. Watson, W.S., 32, Charlotte-square.

UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but not less than one-half of the subjects other than clinical must be taken in this or some other recognised university, and at least two years of the course must be taken in Glasgow University. Six degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M.; B.Sc. in Public Health; D.Sc. in Public Health; and B.Sc. in Pharmacy. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, with possible options to students whose native language is not English in the case of the fourth subject. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination but must do so at not more than two occasions.

For the degrees of M.B. and Ch.B. a curriculum of five years is required. The candidate must, during his curriculum, have attended a course or courses of instruction in each of the following subjects of study, extending over not less than the number of terms specified in each case, and including such class examinations as may be prescribed in connexion with the several courses:—Chemistry (including Organic Chemistry), two terms; with Practical Chemistry, one term; Physics (with practical work), one term; Botany (with practical work), one term; Zoology (with practical work), one term; Anatomy and Practical Anatomy, five terms; Physiology and Practical Physiology, three terms; Materia Medica and Therapeutics (together or separately), each subject, one term; Pathology and Practical Pathology, three terms; Medical Jurisprudence and Public Health (together or separately), each subject, one term; Midwifery and Diseases peculiar to Women and to Infants, two terms; Surgery, two terms; Medicine, two terms. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted for six months as clerk in medical and dresser in surgical wards, and must have had six months' outdoor practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 20 cases of labour, or three months of the Practice of a Lying-in Hospital. The University also requires further study in Post-Mortem Examinations, Fevers, Dermatology, Ophthalmology, Gynæcology, Diseases of Children, and Diseases of the Ear and Throat. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics, or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects, and there is also power to accept certain Professional Examinations for Medical Degrees of other Universities.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry; the second comprising Anatomy and Physiology; the third comprising Materia Medica and Therapeutics and Pathology; and the fourth or final, comprising Medical Jurisprudence and Public Health, Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and the Diseases peculiar to Women and to Infants.

The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

Fees.—The Fees for M.B. and Ch.B. are £23 2*s*. The class fee in each subject of the curriculum for M.B. and Ch.B. is £2 2*s*., £3 3*s*., or £4 4*s*., and the present fees for hospital attendance are £10 10*s*. The fee for M.D. is £15 15*s*., and for Ch.M. £15 15*s*.

The great majority of the students take their hospital course at the Western Infirmary, where clinical instruction is given by professors of the University and others. Clinical instruction on Fevers is given at Ruchill and Belvidere

Hospitals, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Ear, the Throat and Nose, Dermatology, and Insanity. Queen Margaret College, sometime conducted as a separate institution for the higher education of women, was made over to the University in 1892, and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical instruction female students are admitted to the Royal Infirmary.

Professors—Natural Philosophy: A. Gray, LL.D., F.R.S. Materia Medica: Ralph Stockman, M.D. Chemistry: John Ferguson, LL.D. Surgery: Sir William Macewen, M.D., F.R.S. Practice of Medicine: Samson Gemmell, M.D. Midwifery: Murdoch Cameron, M.D. Anatomy: Thomas H. Bryce, M.A., M.D. Zoology: John G. Kerr, M.A., F.R.S. Botany: F. O. Bower, D.Sc., F.R.S. Physiology: D. Noël Paton, M.D. Forensic Medicine: John Glaister, M.D. Pathology: Robert Muir, M.A., M.D., F.R.S.

In this University Bursaries and Prizes to the annual amount of over £1000 are appropriated to students in the Medical Faculty, and there are, moreover, several Scholarships and Fellowships which may be held by medical students who have gone through the Arts course. The designation, money value, subjects of examination or other method of selection, conditions of eligibility, &c., of the Bursaries and Prizes are as follows:—Two Highland Society Bursaries, tenable for five years, open to medical students of Highland descent, £25 each, awarded on results of Preliminary Examination; Mackintosh Mental Science Bursary, open to medical students of either sex attending the Lectures on Insanity, £31; Monteith Bursary, tenable for two years, awarded on results of Second Professional Examination, £21, Anatomy and Physiology; Dr. Thomas Gibson Bursary, tenable for four years, open to medical students preparing to be Missionaries, £36, competition at the First Professional Examination; Coats Scholarship, open to graduates in medicine of not more than three years' standing, holder to prosecute research in pathology, £85, Pathology; John Macfarlane Bursary and Lorimer Bursary, each tenable for three years and open to medical students entering on their second winter session, £48 and £17 respectively; an Armagh Bursary, open to students of either sex presenting themselves for the Final Examination for the degree of M.A. with Honours in Classics, and intending to study Medicine, £52 for three years; William Gardiner Bursary, tenable for two years, open to medical students of either sex, £14, Physiology, Chemistry, and Physics of Professional Examinations; Rainy Bursary, tenable for two years, open to medical students entering on their fourth winter session, £20, Anatomy, Physiology, Chemistry, Botany, and Zoology; two Paterson Bursaries, tenable for four years, open to medical students of first or second session, £25 and £20 respectively, Mathematics and Dynamics; Brunton Memorial Prize, awarded annually to the most distinguished graduate in medicine of the year, £10; Dobbie Smith Gold Medal, awarded annually for an Essay on a Botanical subject; two Arnott Prizes, £20 and £15 respectively, Physiological Physics, &c.; Andrew and Bethia Stewart Bursary, tenable for three years, open to M.A. Graduates of the University, £50, Special Examination; Weir Bursary, awarded on result of Second and Third Professional Examinations, £18; McCunn Medical Research Scholarships, open to medical graduates of Scottish Universities, £100 (see University Calendar).

ANDERSON'S COLLEGE MEDICAL SCHOOL, Dumbarton-road, Glasgow, W.—This medical school took its rise as the Medical Department of Anderson's University, founded in 1795 by the will of Professor John Anderson, F.R.S., and has been active since 1799. It has given 13 professors to the University of Glasgow. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy and Practical Anatomy, Professor A. M. Buchanan; Physics, Professor Peter Bennett; Chemistry, Professor J. Robertson Watson; Botany, Professor B. G. Cormack; Zoology, vacant; Physiology, Professor A. J. Ballantyne; Materia Medica, Professor John P. Duncan; Midwifery and Diseases of Children, Professor J. M. Munro Kerr; Surgery, Professor G. Burnside Buchanan; Practice of Medicine, Professor John Cowan; Ophthalmic Medicine and Surgery, Dr. A. Freeland Fergus; Aural Surgery, Dr. J. Galbraith Connal; Diseases of Throat and Nose, Dr. John Macintyre; Public Health (Laboratory Course), Professor Carstairs C. Douglas. In summer: Anatomy, Practical Anatomy, and Osteology; Practical Chemistry; Botany and Practical Botany; Zoology and Practical Zoology; Practical Physiology; Practical Materia Medica and Pharmacy; Medical Jurisprudence (Professor Carstairs C. Douglas); Diseases of Women (Professor J. M. Munro Kerr); Operative Surgery; Ophthalmic Medicine and Surgery; Aural Surgery; Mental Diseases (Dr. John Carswell); and Public Health (Lecture Course and Laboratory Course). The Chemical Laboratory is open daily from 10 to 5. The Dissecting-room is open in winter from 9 A.M. to 6 P.M., and in summer from 6 A.M. to 6 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the Licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are conducted at the Glasgow Dental Hospital and School.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of it, and four minutes' walk of the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Botany, Practical Zoology, Practical Physiology, Practical Pharmacy, Operative Surgery, and Public Health. Ample provision has also been made for the comfort of students.

Class Fees.—For each course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, Mental Diseases, and Public Health excepted), first session, £2 2*s*; second session (in Anderson's College), £1 1*s*. For Practical Classes (except Anatomy, Chemistry, and Public Health)—namely, Botany, Zoology, Physiology, Pharmacy, and Operative Surgery—first session, £2 2*s*.; second session, £2 2*s*. Anatomy Class Fees: Winter, first session, Lectures and Practical Anatomy, £5 5*s*.; Practical Anatomy alone, £2 2*s*. Second session, Lectures and Practical Anatomy, £5 5*s*.; Practical Anatomy alone, £2 2*s*. Third session, Practical Anatomy, £1 1*s*. Summer, Regional Course or Dental Course (each including nervous system) and Practical Anatomy, £3 3*s*.; Regional Anatomy Course or Dental Course alone, £2 2*s*.; Practical Anatomy alone, £1 11*s*. 6*d*.; Osteology and Practical Anatomy, £2 12*s*. 6*d*.; Osteology alone, £1 11*s*. 6*d*. Special Course of Demonstrations for Dental Students, £2 2*s*. Chemistry: Lectures, £2 2*s*.; Practical Chemistry, £3 3*s*. Botany and Zoology: Reduced fees for Lectures with Laboratory work in Botany or in Zoology, during same summer session, £3 3*s*.; for Lecture Class or Practical Class separately, in Botany or in Zoology, £2 2*s*. Ophthalmic Medicine and Surgery (including Hospital Practice), Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, fee for each course, £1 1*s*. Public Health Laboratory, fee for six months' course, £12 12*s*. Matriculation Fees: For the year, 10*s*.; for one class in winter session alone, 5*s*.; for summer session alone, 5*s*.

Western Infirmary.—Fees: For Hospital Attendance, £10 10*s*.; afterwards free. For Clinical Instruction, winter, £3 3*s*.; summer, £2 2*s*. Pathology: systematic, £4 4*s*.; practical, £3 3*s*. Vaccination fee, £1 1*s*.

Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10*s*.; second year, £10 10*s*.; afterwards free. Six months, £6 6*s*.; three months, £4 4*s*. Pathology, both courses, £4 4*s*. Vaccination Fee, £1 1*s*.

Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee.

Maternity and Women's Hospital.—Fee for six months, £3 3*s*.

Royal Hospital for Sick Children.—Fee for one year, £1 1*s*.

Eye Infirmary.—Fee: Hospital Practice and Clinical instruction, including Lectures at the College, six months, £1 1*s*.

Lock Hospital.—£1 1*s.*

Fever Hospital, Belvidere or Ruchill.—Fee, £1 1*s.*

Hospital for Skin Diseases.—Fee, £1 1*s.*

The Carnegie Trust extends its benefactions to students at Anderson's College Medical School. Full particulars may be obtained from Mr. W. S. McCormick, the Carnegie Trust Offices, Merchants' Hall, Edinburgh.

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Royal Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. The courses of Laboratory Instruction and Lectures in Public Health are recognised by the Royal Faculty and Scottish Colleges; by the Royal College of Physicians and the Royal College of Surgeons, Ireland; and by the Universities of Cambridge, London, &c. Communications relating to the Medical School to be addressed to the Secretary of the Medical Faculty, Anderson's College Medical School, Glasgow, W. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Alexander Mackay, Educational Institute Office, 34, North Bridge-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, LL.D., Royal Faculty Hall, 242, St. Vincent-street, Glasgow. Communications relating to the Dental School to be addressed to Mr. D. M. Alexander, 97, West Regent-street, Glasgow.

The Malcolm Kerr Bursary in Anatomy (value about £10) is open to students of the Junior Anatomy Class during Winter Session 1911–12.

The Winter Session will open on Monday, Oct. 16th, 1911, and will close on Thursday, March 21st, 1912.

The Summer Session will open on Tuesday, April 23rd, 1912, and will close on Tuesday, July 2nd, 1912.

ST. MUNGO'S COLLEGE AND GLASGOW ROYAL INFIRMARY.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. A complete electric light installation has been added and a powerful Educational Lantern has been provided for demonstration purposes. The Royal Infirmary, which is at the service of the College for the purpose of clinical and practical instruction, is one of the largest hospitals in the kingdom. The winter session will open on Monday, Oct. 16th.

Psychological Medicine.—Practical instruction is given in Hawkhead Asylum, situated within a short distance of Glasgow and having accommodation for 850 patients. Eight resident clinical clerks are appointed annually. These clerkships are open to students attending St. Mungo's College.

Clinical Instruction in Fevers.—Classes are conducted by Dr. Johnston, Superintendent, at the City of Glasgow Fever Hospital, Belvidere, and Dr. Brownlee, Superintendent, at the City of Glasgow Fever Hospital, Ruchill.

Clinical Instruction in Midwifery.—The close proximity of the Maternity Hospital enables the Professor of Midwifery to conduct frequent clinical demonstrations there during the summer session.

The classes in St. Mungo's College qualify for the English, Scotch, and Irish Conjoint Boards and, under certain conditions, for the various universities, including the University of London. Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction, age (16 years), and Preliminary Examination, are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The fee for each class is £2 2*s.*, except Zoology and Botany, joint fee £3 3*s.*, Anatomy, Winter Session, £4 4*s.*, Pathology, £4 4*s.*, Physics, £2 4*s.* 6*d.*, Public Health Laboratory, £12 12*s.*, and certain extra classes for which the fee is £1 1*s.* The hospital fee (including clinical lectures) is £21 for a perpetual ticket.

The classes in St. Mungo's College are now open to male and female students equally.

The minimum fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons amount to £65. Further particulars can be obtained from a syllabus which may be procured free on application to the Secretary of the Medical Faculty, 86, Castle-street, Glasgow.

GLASGOW WESTERN MEDICAL SCHOOL.—This School is situated in University-avenue, opposite the principal gate of the University and near the Western Infirmary. Lectures and Demonstrations are given on Chemistry, Anatomy, Medicine, Surgery, Midwifery and Gynæcology, and Ophthalmology. Some of the classes qualify for graduation and for Scotch diplomas.

Class Fees.—For each course of Lectures the fee is £2 2*s.*, or in some cases £1 1*s.* There is no matriculation fee.

Lecturers: Winter Session.—Chemistry: Dr. Neave; Anatomy: Dr. Wright Thomson, Tuesday, Wednesday, and Friday, at 4.15 P.M.; Surgery: Dr. A. Young, at 12 noon; Midwifery: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. G. A. Allan, at 3 P.M.

Summer Session.—Chemistry: Dr. Neave; Anatomy: Dr. Wright Thomson, Tuesday and Friday, at 3.15 P.M.; Operative Surgery: Dr. A. Young, Monday, Wednesday, and Friday, at 1 P.M.; Gynæcology: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. G. A. Allan, Monday, Tuesday, and Friday, at 4 P.M.; Ophthalmology: Dr. Hinshelwood, Monday and Thursday, at 11 A.M. and 3 P.M. Some of the above hours are liable to alteration. Further particulars can be obtained from the Secretary, Mr. J. N. Morton, 58, Bath-street.

QUEEN MARGARET COLLEGE, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its buildings, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the Women's Department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The number of students enrolled in session 1910–11 was 665, of whom about 80 were studying in the Faculty of Medicine and the rest in the Faculties of Arts, Science, Theology, or Law. The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish university, women students graduated in medicine in Glasgow University. 157 women have now taken the degree of M.B., C.M., or M.B., Ch.B. of the University of Glasgow and 17 the degree of M.D. The women students study Physics, Zoology, Botany, Physiology, Pathology, Materia Medica, Medical Jurisprudence, and Public Health in the University Buildings at Gilmorehill, and Chemistry, Anatomy, Surgery, Medicine, and Gynæcology at Queen Margaret College. Excellent facilities for clinical work are given in the Royal Infirmary, in the Maternity, and other hospitals. By a gift of £5000 granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large building for the study of Anatomy and other medical subjects which was opened in October, 1895. The Arthur Scholarship is open every third year to students of first year; other Bursaries are open in Arts and Medicine; and by an ordinance of the Universities Commissioners women are admitted to certain University bursaries, scholarships, and fellowships. A house of residence for the students of the College coming from a distance was opened by the Queen Margaret Hall Co., Limited, in October of 1894. The Winter Session will open on Oct. 16th.

Lecturers (other than University Professors).—Anatomy: Mr. W. K. Hutton. Chemistry: Dr. H. W. Bolam. Medicine: Dr. W. K. Hunter. Surgery: Mr. J. H. Pringle. Ophthalmology: Dr. A. M. Ramsay.

ROYAL INFIRMARY, Glasgow.—This infirmary, which is the largest in Glasgow, is situated in Cathedral-square, Castle-street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds. The infirmary has, including the Ophthalmic Department, over 620 beds, the average number occupied in 1910 being 645. When the rebuilding of the infirmary, now in progress, is completed it will have about 700 beds. There are special beds and wards for diseases of women, of the throat, nose, and ear, skin, venereal diseases, burns, and septic cases. Wards are set apart for the teaching of Women Students. At the Out-door Department the attendances in 1910 numbered over 168 000. In addition to the large medical and surgical departments there are departments for special diseases—viz., diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. Five house physicians and nine house surgeons, having a legal qualification in medicine and surgery, who board in the hospital free of charge, are appointed every six months. Clerks and dressers are appointed by the physicians and surgeons. As a large number of cases of acute diseases and accidents of a varied character are received these appointments are very valuable and desirable. There is a modern and fully equipped Electrical Pavilion and year by year the latest and most approved apparatus for diagnosis and treatment has been added. The fees for hospital attendance, including clinical lectures and tutorial instruction, attendance at the out-door department, at the pathological department, post-mortem examinations, and the use of the museum are as follows: For one year, £10 10*s.*; for six months, £6 6*s.*; for three months, £4 4*s.* Students who have paid fees to the amount of £21 to the Glasgow Royal Infirmary shall be permitted to attend in any subsequent year or years one winter and one summer course of instruction in the infirmary without further payment; and students who have paid to any other hospital in the United Kingdom fees, being not less than £21, in virtue of which they are entitled to attend without further payment, shall be admitted as students of the Royal Infirmary on payment of £3 3*s.* for six months or £1 11*s.* 6*d.* for three months.

Staff.—Visiting Physicians: Dr. G. S. Middleton, Dr. T. K. Monro, Dr. W. K. Hunter, Dr. J. M. Cowan, and Dr. J. B. Mackenzie Anderson. Visiting Surgeons: Mr. John Barlow, Mr. J. A. Adams, Mr. David Newman, Mr. J. H. Pringle, Mr. H. Rutherfurd, and Mr. P. Paterson. Consulting Surgeon for Diseases of the Eye: Dr. A. Maitland Ramsay. Consulting Medical Electrician: Dr. J. Macintyre. Surgeon for Diseases of the Throat and Nose: Dr. J. Macintyre. Gynæcologist: Dr. Balfour Marshall. Surgeon for Diseases of the Ear: Mr. J. Kerr Love. Physician for Diseases of the Skin: Dr. Alex. Morton. Pathologist and Curator of Museum: Dr. J. H. Teacher. Assistant Pathologists: Dr. A. M. Kennedy and Dr. Milne McIntyre. Bacteriologist: Mr. David McCrorie. Assistant Bacteriologists: Mr. J. A. Campbell and Dr. Elizabeth T. Fraser. Medical Electrician: Mr. J. R. Riddell. Assistant Medical Electricians: Dr. Samuel Capie and Dr. Katharine M. Chapman. Anæsthetists: Dr. John Donald and Dr. H. P. Fairlie. Vaccinator: Dr. H. H. Borland. Dispensary Physicians: Dr. John Henderson, Dr. Campbell S. Marshall, Dr. James Scott, Dr. J. T. McLachlan, Dr. A. W. Harrington, and Dr. D. H. Macphail. Extra Dispensary Physicians: Dr. Wm. H. Brown, Dr. A. M. Crauford, Dr. David Macdonald, and Dr. J. C. Middleton. Dispensary Surgeons: Mr. A. N. McGregor, Mr. John Patrick, Mr. John A. C. Macewen, Mr. A. C. Faulds, Mr. Thomas Kay, and Mr. Robert Ramsey. Extra Dispensary Surgeons: Mr. James Battersby, Mr. Donald Duff, and Dr. Milne McIntyre. Dispensary Specialists:—Diseases of Women: Dr. A. G. Banks, Dr. E. G. Taylor, and Dr. James Taylor; Diseases of the Ear: Dr. James Adam and Dr. R. S. McKim; Diseases of the Skin: Dr. Alexander Morton and Dr. G. McIntyre; Diseases of the Throat and Nose: Dr. R. Fullerton and Dr. Grant; Diseases of the Eye: Dr. J. Rowan and Dr. H. W. Thomson; Diseases of the Teeth: Mr. W. Taylor and Mr. W. R. Taylor. Superintendent: Dr. J. Maxtone Thom.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the University of Glasgow. Number of beds upwards of 600. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, Teeth, and Skin. The Clinical Courses are given by the physicians and surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom. In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Fourteen resident assistants are appointed annually, without salary, from those who have completed their course. The fee for hospital attendance is £10 10*s.* and the fees for clinical instruction are £3 3*s.* for the Winter Session and £2 2*s.* for the Summer Session.

A new Clinical Laboratory has just been opened, and students will receive laboratory instruction from the lecturer on clinical methods.

Staff.—Honorary Consulting Physician: Dr. G. P. Tennant. Honorary Consulting Gynæcologist: Dr. W. L. Reid. Visiting Physicians: Dr. Samson Gemmell, Dr. Ralph Stockman, Dr. Wm. MacLennan, Dr. R. Barclay Ness, and Dr. J. W. Nicol (Skin Department). Honorary Consulting Surgeon: Sir Hector C. Cameron. Visiting Surgeons: Sir W. Macewen, Dr. J. C. Renton, Sir George T. Beatson, K.C.B., Dr. T. K. Dalziel, Dr. James H. Nicoll, and Dr. Robert Kennedy. Gynæcologists: Dr. Murdoch Cameron and Dr. John M. Munro Kerr. Assistant Physicians: Dr. W. R. Jack, Dr. James Carslaw, Dr. John S. M'Kendrick, and Dr. R. Spiers Fullarton. Assistant Surgeons: Dr. Duncan Macartney, Dr. Alfred A. Young, Dr. G. B. Buchanan, Dr. John Morton, Dr. G. H. Edington, and Dr. Alex. MacLennan. Dispensary Physicians: Dr. John Gracie, Dr. Frank Charteris, Dr. A. B. Sloan, Dr. Leonard Findlay, Dr. John P. Duncan, Dr. Geo. Allison Allan, and Dr. Jas. R. C. Greenlees. Dispensary Surgeons: Dr. Archd. Young, Dr. M. L. Taylor, Dr. W. W. Christie, Dr. C. C. Cuthbert, Dr. Alex. H. Edwards, and Dr. R. B. Carslaw. Anæsthetists: Dr. James P. Boyd, Dr. R. Home Henderson, Dr. John W. Renton, and Dr. John S. McConville. Dispensary Gynæcologists: Dr. S. Cameron and Dr. David Dickie. Extra Dispensary Physicians: Dr. G. H. Clark, Dr. D. R. Kilpatrick, Dr. G. B. Fleming, Dr. Ivy Mackenzie, and Dr. Hugh Morton. Dispensary Physician for Diseases of the Skin: Dr. J. G. Tomkinson. Extra Dispensary Surgeons: Dr. Wm. Rankin, Dr. J. Mill Renton, Dr. Roy F. Young, and Dr. W. A. Campbell. Dispensary Surgeon for Diseases of the Ear: Dr. Thomas Barr. Assistant Dispensary Surgeon for Diseases of the Ear: Dr. J. Stoddart Barr. Dispensary Surgeon for Diseases of the Throat and Nose: Dr. Walker Downie. Honorary Consulting Physician for Mental Disorders: Dr. L. R. Oswald. Consulting Medical Electrician: Dr. D. J. Mackintosh, M.V.O. Medical Electricians: Dr. J. G. Tomkinson, Dr. Archd. Hay, and Dr. W. F. Somerville. Pathologist: Dr. Robert Muir. Assistant Pathologists: Dr. S. Dunn and Dr. Carl H. Browning. Vaccinator: Dr. J. L. Carstairs. Dental Surgeon: Mr. W. D. Woodburn, L.D.S. Superintendent: Dr. Donald J. Mackintosh, M.V.O. Matron: Miss H. Gregory Smith. Secretary and Treasurer: Henry Johnston, 87, Union-street. Assistant Secretary: J. Matheson Johnston, C.A.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—The Hospital at Garnethill was opened in December, 1882, and in June, 1903, a country branch consisting of two wards was opened at Drumchapel. The number of beds in the town hospital and country branch together is 100. A specially designed Dispensary, or Out-patient Department, was opened in October, 1888, in West Graham-street. A central site close to the University has been secured and a hospital of at least 200 beds to take the place of the one in Garnethill will be erected thereon shortly. The whole institution is for non-infectious cases and is available to medical students for clinical instruction in the diseases peculiar to childhood. Classes are formed both at Hospital and Dispensary at the beginning of the University session in October. Students may be enrolled at any time. Fee £1 1*s.* per annum, admitting to both Hospital and Dispensary. Further particulars on applying to the House Surgeon, 45, Scott-street, Garnethill, Glasgow. Physicians: Dr. R. Barclay Ness and Dr. George S. Middleton. Surgeons: Mr. T. Kennedy Dalziel and Mr. R. H. Parry.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (29 beds and six cots).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 1145; out- or dispensary patients, 12,429. Operations on Wednesdays and Saturdays. Honorary Consulting Surgeon: Dr. D. N. Knox. Surgeon: Dr. A. Maitland Ramsay. Assistant Surgeons: Dr. John Rowan, Dr. H. Wright Thomson, and Dr. John Gilchrist. Pathologist: Dr. J. H. Teacher. Electrician: Dr. John Gilchrist. Anæsthetist: Dr. R. H. Henderson. House Surgeons: Dr. W. Miller and Dr. William Sewell. This institution is the Ophthalmic Department of the Royal Infirmary. A post-graduate course is given by Dr. Ramsay and assistants during September. Clinical instruction is given in the summer session to students of the University and Queen Margaret College and in winter to students of St. Mungo's College and to all who take the class.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 23,578·2, and the total number of cases in 1910 was 28,681.

Gentlemen may attend as students on payment to the treasurer of the following fees:—For six months £1 1*s*., 12 months £2 2*s*. All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. Students may be allowed the use of the journals and case-books for examination on applying to the House Surgeon. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine. Secretary and Acting Treasurer: Harold John Black, 88, West Regent-street, Glasgow. The medical session opens in October. The Medical Staff is as follows:—Surgeons: Dr. A. Freeland Fergus, Dr. Andrew Wilson, Dr. James Hinshelwood, Dr. Leslie Buchanan, Dr. W. Ernest F. Thomson, and Dr. A. J. Ballantyne. Extra Surgeons: Dr. A. Lewis M'Millan, Dr. Henry L. G. Leask, and Dr. W. Cochrane Murray. Assistant Surgeons: Dr. Brownlow Riddell, Dr. W. B. Inglis Pollock, and Dr. Samuel Capie. Pathologist: Dr. M. Logan Taylor. Honorary Medical Electrician: Dr. Robert Morton. Honorary Anæsthetist: Dr. J. Wishart Kerr. House Surgeon: Dr. J. Alex. Doctor. Assistant House Surgeon: Dr. W. Barrie Brownlie.

UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE. ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE).

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 5 of the University Court of the University of St. Andrews. These regulations came into force on August 2nd, 1910. Four degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and a Diploma in Public Health The whole curriculum may be taken at University College, Dundee, or the first two years of the course may be taken at St. Andrews and the remaining three years in Dundee. The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical studies each student shall pass a Preliminary Examination in (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects:—(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other approved Modern Language. A degree in Arts or in Science in any of the Universities of the United Kingdom and in some colonial or foreign universities shall exempt from the Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the Final Examination for the Diploma of L.L.A.

Degree of Bachelor of Medicine and Bachelor of Surgery.—Candidates must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine, and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery, Operative Surgery, Vaccination, Children's Diseases, Fevers, Ophthalmology, Diseases of the Ear, Throat, and Nose, Anæsthetics, and Post-mortem Examinations.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., first, in Botany, Zoology, Physics, and Chemistry; second, in Anatomy and Physiology; third, in Materia Medica and Pathology and Forensic Medicine and Public Health; and fourth, in Surgery, Clinical and Operative Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and Gynæcology (Systematic and Clinical).

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of

Doctor of Medicine shall be 15 guineas. The fee to be paid for the degree of Master of Surgery shall be 15 guineas.

The whole medical curriculum can be taken in University College or the first two years in United College.

Bursaries, United College, St. Andrews.—Fourteen Taylour Thomson Bursaries for female Medical students of the annual value of from £20 to £30 each, tenable for one or two years. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination and who are prepared to take two Anni Medici at the United College, St. Andrews.

University College, Dundee.—(*a*) Open to either sex. Eleven Entrance Bursaries of £15, tenable for one year. (*b*) Open to either sex: Four £20 and three £15, second year. (*c*) Four £20 and two £15, third year. (*d*) Two £20, fourth year. (*e*) Two £20, fifth year. (*f*) Bute Bursary, founded in 1893 by the late Most Honourable the Marquis of Bute, K.T. This Bursary consists of the free proceeds of £1000. (*g*) Two Bursaries of the annual value of £25, tenable for three years at either University College, Dundee, or at any Scottish University (local candidates only).

Professors—Natural Philosophy: William Peddie, D.Sc., F.R.S.E. Chemistry: Hugh Marshall, D.Sc., F.R.S. Edin. Natural History: D'Arcy W. Thompson, M.A., C B. Botany: Patrick Geddes, F.R.S.E. Anatomy: J. Yule Mackay, M.D., LL.D. Physiology: E. W. Reid, B.A., D.Sc., M.B, M.R.C.S, F.R.S. Pathology: L. R. Sutherland, M.B., C.M. Surgery: D. MacEwan, M.D. Medicine: Alexander M. Stalker, M A., M.D. Midwifery: J. A. C. Kynoch, M.B., F.R.C.P. & S.Edin. Materia Medica: C. R. Marshall, M.A., M.D.

United College of St. Salvator and St. Leonard.—Professors—Natural Philosophy: A. S. Butler, M.A. Natural History: W. C. MacIntosh, M.D., LL.D., F.R.S. Chemistry: James C. Irvine, D.Sc., Ph.D. Anatomy: James Musgrove, M.D., C.M. Physiology: Percy T. Herring, M.D.

For further particulars apply to Professor Kynoch, Dean of the Medical Faculty, University College, Dundee.

UNIVERSITY COLLEGE, Dundee.—This College is one of the constituent colleges of the University of St. Andrews. In the medical buildings there are spacious and well-equipped laboratories and work-rooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynæcology. The complete medical curriculum can be taken in Dundee. For classes, fees, &c., see under University of St. Andrews.

ROYAL INFIRMARY, Dundee.—The Infirmary contains 400 beds, including special wards for the Diseases of Women, Children, Eye, Ear and Throat, Skin, and for Obstetric cases. There is in addition an Extern Obstetric Department. There were during last year 20,236 out-patients and 6690 home patients. The Royal Infirmary offers exceptional facilities for practical work to students. Appointments: Five qualified Resident Medical Assistants are appointed every six months and one non-resident Obstetric Assistant. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological Department. There are in connexion with the clinical courses Tutorial Classes in Medicine and Surgery. Instruction is also given in Practical Pharmacy and Materia Medica and in Practical Dentistry. Further information can be obtained from Dr. Fraser, Medical Superintendent.

ROYAL and DISTRICT ASYLUMS, Dundee (five miles from City). Number of patients, 490.—Physician Superintendent: Dr. William Tuach-Mackenzie. Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrews), are given during the Summer Session at University College and at the Royal and District Asylums by Dr. Tuach-Mackenzie. The course consists of 12 Lectures and 14 Clinical Lectures and Demonstrations. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants.

UNIVERSITY OF ABERDEEN.

The University of Aberdeen grants four degrees in Medicine and Surgery—viz., Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine (M.B.), and Bachelor of Surgery (Ch.B.). The two degrees of M.B. and Ch.B. are not conferred separately and the higher degrees of M.D. and Ch.M. are only granted to holders of the M.B. and Ch.B. degrees.

Degrees of M.B. and Ch.B.—Before commencing his medical studies each student must pass a Preliminary Examination in (1) English, (2) Latin, (3) Mathematics, and (4) Greek, or French, or German. In the case of a candidate whose native language is not English an examination in the candidate's native language may be substituted for one in French or German, and an examination in any other classical language for one in Latin or Greek. The curriculum for the degrees extends over a period of five years, during which attendance is required in the following subjects: Botany, Zoology, Physics, Chemistry (Systematic and Practical), Anatomy (Systematic and Practical), Physiology (Systematic and Practical), Materia Medica and Therapeutics, Practical Pharmacy, Pathology (Systematic and Practical), Medical Jurisprudence and Public Health, Surgery, Medicine, and Midwifery.

Candidates must attend for at least three years the medical and surgical practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons, and they must have attended courses of at least nine months in clinical medicine and clinical surgery. The candidate must have acted as clerk in the medical and dresser in the surgical wards of a hospital and must have attended for at least six months the practice of a dispensary or the out-practice of a hospital, &c. Attendance is also required on courses in Mental Diseases, Fevers, Ophthalmology, Post-mortem Examinations, and other special subjects. The candidate is also required to have been properly instructed in Vaccination and to have attended at least 12 Midwifery cases.

Professional Examinations are held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fee for the degrees of M.B. and Ch.B. amounts to £23 2*s*. Matriculation fee for the winter and summer sessions, £1 1*s*.; summer session alone, 10*s*. 6*d*.

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: City Fever Hospital, Sick Children's Hospital, General Dispensary, and Lying-in and Vaccine Institutions (daily), Royal Lunatic Asylum, Ophthalmic Institution, &c.

Degrees of M.D. and Ch.M.—Candidates for either of these degrees must already hold the degrees of M.B. and Ch.B. of Aberdeen. A thesis has to be presented for approval by the Medical Faculty and an examination has to be passed in Clinical Medicine or Clinical Surgery as the case may be. Fee for each of the degrees £10 10*s*.

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

Professors—Physics: C. Niven, M.A., D.Sc., F.R.S. Physiology: J. A. MacWilliam, M.D. Medicine: David White Finlay, M.D. Chemistry: F. R. Japp, LL.D., F.R.S. Anatomy: R. W. Reid, M.D., F.R.C.S. Surgery: John Marnoch, M.B., C.M. Materia Medica: J. T. Cash, M.D., F.R.S. Midwifery: W. Stephenson, M.D. Forensic Medicine: Matthew Hay, M.D., LL.D. Botany: J. W. H. Trail, M.D., F.R.S. Pathology: Geo. Dean, M.B. Natural History: J. Arthur Thomson, M.A.

Scholarships and Prizes.—In the Faculty of Medicine of the University of Aberdeen there are the following Bursaries, Scholarships, and Prizes:—Bursaries: about 15 Bursaries (competition and presentation) are open each year, of £15 to £30 per annum in value, most of them being tenable for three years; certain other Bursaries are not confined to the Faculty of Medicine, but may be held by Arts Students. Scholarships: five Post-Graduate Scholarships, value £36 to £160 per annum. Prizes and Medals: 13 Gold Medals and Prizes for proficiency in special departments, &c.

Clinical Instruction.—ABERDEEN ROYAL INFIRMARY.—Contains 251 beds. Consulting Physician: Dr. Angus Fraser. Physicians: Professor Finlay, Dr. George M. Edmond, and Dr. Ashley W. Mackintosh. Assistant Physicians: Dr. A. H. Lister, Dr. W. R. Pirie, and Dr. Thos. Fraser. Consulting Surgeons: Professor Alexander Ogston, Dr. J. C. O. Will, and Dr. J. Mackenzie Booth. Surgeons: Mr. J. S. Riddell, Professor John Marnoch, and Mr. H. M. W. Gray. Assistant Surgeons: Dr. Wallace Milne,

Dr. Fred. K. Smith, and Mr. George H. Colt. Ophthalmic Surgeon: Dr. C. H. Usher. Assistant Ophthalmic Surgeon: Dr. W. Clark Souter. Gynæcologist: Professor W. Stephenson. Pathologist: Professor George Dean. Assistant Pathologist: Dr. G. M. Duncan. Dental Surgeon: Dr. J. M. P. Crombie. Anæsthetist: Dr. A. W. Falconer. Assistant Anæsthetists: Dr. James Robertson and Dr. J. Johnston. Medical Electrician: Dr. J. R. Levack. Assistant Medical Electrician: Dr. Frederick Philip. Dermatologist and Lecturer on Diseases of the Skin: Dr. J. F. Christie. Medical Superintendent and Clinical Registrar: Dr. William Sinclair. Clerk and Treasurer and Factor for the Hospital Lands: Mr. A. Scott Finnie, 343, Union-street, Aberdeen.

ABERDEEN ROYAL LUNATIC ASYLUM.—Contains, with hospital attached to main institution and agricultural branch, about 986 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. Arthur Kellas, Dr. J. Scott, Annandale, and Dr. Herbert S. Milne. Clerk, Treasurer, and Factor: Mr. A. Scott Finnie, 343, Union-street, Aberdeen. Clinical instruction is given to students during three months in summer.

SCOTTISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or Glasgow, or both, the student may obtain the diplomas of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess legal qualifications in Medicine or Surgery. Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries.

Professional Education.—I. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction: Physics, three months; Elementary Biology, three months; Chemistry, six months; Practical or Analytical Chemistry, three months; Anatomy, during at least six months; Practical Anatomy, twelve months; Physiology, six months; Materia Medica, three months; Pathology (including Practical Pathology), six months; Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery and the Diseases of Women and Children, three months; Medical Jurisprudence and Public Health, three months. The certified attendance on lectures, demonstrations, and practical work must not be less than three-fourths of the total number of roll-calls. II. The candidate must also produce the following certificates:—(*a*) Of having personally attended not less than six cases of labour, or alternatively attendance on 12 cases of labour, at least five of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner, but the practical midwifery applicable to students commencing medical study on and after Oct. 1st, 1908, is as follows: 1. Every student before commencing the study of Practical Midwifery shall have attended a course of lectures on Surgery and Midwifery and be required to have held the offices of Clinical Medical Clerk and Surgical Dresser. 2. Every student shall be required either—(1) to have attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months to the satisfaction of the medical officer in charge, and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 12 cases of labour under official medical supervision; or (2) to have conducted not less than 12 cases of labour, subject to the following conditions—That he has during one month given regular daily attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital or Poor-law infirmary recognised for that purpose by any of the licensing bodies, and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital or infirmary, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision. 3. No certificate that the student has conducted the above-mentioned 12 cases of labour shall be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital or of a dispensary having an obstetric staff recognised for that purpose by any of the licensing bodies or of a Poor-law infirmary having a resident medical officer so recognised. (*b*) Of having attended, for two and a half months, instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for 27 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. Evidence must be produced that the candidate has acted as Surgical Dresser and Medical Clinical Clerk for not less than three months in the wards in each case, and has received practical instruction in administration of anæsthetics. (*d*) Of having attended for six months the practice of a public dispensary specially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second examinations. (*e*) Of having been instructed in the Theory and Practice of Vaccination by a Public Vaccinator authorised by the Local Government Board to grant certificates of proficiency in vaccination and of having performed operations under the teacher's inspection during a period of not less than six weeks.

The above Course of Hospital Practice, and the above Courses of Clinical Medicine and Clinical Surgery shall be attended at a recognised Public General Hospital, possessing distinct staffs of Physicians and of Surgeons, and containing on an average not less than 80 patients available for Clinical Instruction.

In addition to the courses above prescribed, candidates are required to attend the following courses: Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months.

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. The period of three years devoted to hospital practice may include clinical instruction in special subjects, and must also include instruction in administration of anæsthetics and attendance at post-mortem examinations. The student's regularity of attendance in the wards and out-patients' departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Students are recommended to pay particular attention to practical work in connexion with all the departments of study, and to avail themselves of opportunities of acquiring practical acquaintance with special departments of Clinical Study, such as Diseases of the Ear, Throat, and Skin, Diseases of Children, and Operative Surgery. The examinations shall be so conducted as to test practical knowledge.

Candidates shall be subjected to four professional examinations:

First Examination.—The First examination shall embrace the following subjects—(1) Physics, (2) Chemistry, including Practical Chemistry, and (3) Elementary Biology. The fees payable for admission to the First examination shall be for the whole examination, £5; for each subject separately, £2 10*s.*; and for re-entry, £2.

Second Examination.—The Second examination shall embrace Anatomy and Physiology including Histology; and candidates may be admitted to this examination at the end of the second year of medical study. The fees payable for admission to the Second examination shall be—for the whole examination, £5, and for re-entry after rejection, £3 for both subjects, and for each of the subjects

separately, £3, and for re-entry for each subject after rejection, £2.

Third Examination.—The Third examination shall embrace Pathology and Materia Medica with Pharmacy. The fees payable for admission to the Third examination shall be—for the whole examination, £5; for re-entry in both subjects after rejection, £3; and for each of the subjects separately, £3, and for re-entry for each subject after rejection, £2.

Final Examination.—The Final examination shall not be taken earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women and of New-born Children; and Medical Jurisprudence and Public Health, but it is optional to candidates who have passed the Third Examination to be admitted to the subject of Medical Jurisprudence and Public Health on lodging certificates of having attended the necessary course in that subject at any time; but the subjects of Medicine, Surgery, and Midwifery shall be taken together at any time after the end of the fifth Winter Session, provided that a period of 24 months has elapsed since passing the Second Examination. All candidates shall be subjected, in addition to the written and oral examinations, to clinical examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c. The fees payable for the Final examination shall be,—for the whole examination, £15, for re-entry after rejection, £5, and for the subjects of Medical Jurisprudence and Public Health when taken separately, £5, with £3 for re-entry in that subject.

Candidates who enter on the footing of having passed the earlier examination at another Board shall pay the fees in respect of these examinations, as well as the Final examination fees.

There are six periods of examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespectively of the place of the previous examination. The Registrar in Edinburgh is Mr. J. Robertson, solicitor, 54, George-square; and the Registrar in Glasgow, Mr. A. Duncan, LL.D., 242, St. Vincent-street, to whom fees and certificates must be sent for the respective examinations.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the Scottish Conjoint Board the Royal College of Physicians grants its Single Licence to candidates already possessing legal qualifications for professional practice.

The Royal College of Physicians of Edinburgh grants a *Membership* and a *Fellowship*.

Membership.—A candidate, who must be a Licentiate of the College or a graduate of a British or Irish University and 24 years of age, is examined in medicine, therapeutics, and in any branch of the departments of medicine, such as general pathology, psychology, public health, obstetrics, tropical medicine, or medical jurisprudence. The fee for the Membership is £36 15*s*., 15 guineas of which will be returned to any successful candidate who was already a Licentiate of the College at the time of qualifying for the Membership.

Fellowship.—The Fellows are selected, save with rare exceptions, from the ranks of the *Members*. They must be 25 years of age. The fee is £64 18*s*.

The College grants its *Single Licence* on terms similar to those of the Royal College of Surgeons of Edinburgh, as mentioned in the next section.

Further information can be obtained from the secretary.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH: THE FELLOWSHIP.

The Royal College of Surgeons of Edinburgh grants a diploma of Fellowship after examination to the holders of the surgical degrees of diplomas of such British examining bodies, as well as of the holders of such surgical degrees of the Universities of Canada, Australia, New Zealand, and the Indian Empire as are recognised by the College. The candidates for the examination must be 25 years of age and must have been engaged in practice for at least two years. The examination is of a practical nature, partly written and partly *viva voce*, and must include surgery and surgical anatomy, operative surgery, and clinical practice. One optional subject must also be taken, the range of these specialisms covering nearly every branch of medicine. The fee to be paid on entering for examination for Fellowship is £45, £10 of which is remitted to those who already hold the Licentiateship of the College. Candidates rejected at the examination obtain repayment of fee less £10 retained for examination expenses. One month's notice of intention to present himself for examination must be given by the candidate to Mr. D. L. Eadie, 54, George-square, Edinburgh, clerk to the College, together with credentials signed by two Fellows of the College, one of whom must be a resident in Edinburgh, unless a special application be made to the President and the Council of the College.

SINGLE LICENCE.

The Royal College of Surgeons of Edinburgh admits to the examination for its Single Licence any candidate who already holds a Diploma in Medicine of any British, Indian, or Colonial university or of any British or Colonial College of Physicians, or of the Society of Apothecaries of London or Apothecaries' Hall, Dublin, granted under the provisions of the Medical Act, 1886, whose preliminary examination and course of professional study is proved to be sufficient to fulfil the requirements of the College, or to those who have passed a full examination for any of the above. Female practitioners are now admitted to the Licence of the College but not to the Fellowship, and the regulations for the Licence apply to practitioners of either sex.

Every candidate for a surgical diploma must have followed his course of study in a university, or in an established school of medicine, or in a provincial school specially recognised by the College of Surgeons of that division of the United Kingdom in which it is situate.

Under the title Established School of Medicine are comprehended the medical schools of those cities of Great Britain and Ireland in which Diplomas in Surgery are granted, and such colonial and foreign schools as are similarly circumstanced in the countries in which they exist.

Professional Examination for the Single Diploma of the College.—Candidates for the Diploma of the College will be subjected to one professional examination, partly in writing and partly practically and orally.

Opportunities for the examinations will be presented four times in each year. On each of these occasions the candidates will assemble to write answers to the questions proposed, and the clinical and oral examinations shall be conducted on the days immediately succeeding.

Unsuccessful candidates will be remitted to their studies for a period to be determined by the judgment of the examiners, but not in any case for less than three months.

The examination will embrace the principles and practice of surgery (including operative surgery and surgical pathology), clinical surgery, and surgical anatomy, and will not take place before the termination of the full period of study.

Applications for examination must be made to Mr. D. L. Eadie, not later than one week prior to the date of examination.

On the production of the required documents Mr. Eadie will give the candidate an order authorising the examiners to admit him to examination.

The fee of £15 15*s*. payable to the College must be lodged in the hands of Mr. Eadie not later than one week preceding the examination day. The sum of £10 10*s*. will be returned to each unsuccessful candidate. Under special circumstances candidates can be examined on days other than those fixed by the regulations. The fee for a special examination is as follows, viz., £20 for examination, of which £10 will be returned to candidates remitted on examination.

In order to test more effectually the practical knowledge of candidates recent dissections and anatomical specimens will be employed during examination. They will also be subjected to a practical clinical examination in the Surgical Hospital, including the application of surgical apparatus, bandages, surface markings, &c., and may, if it be considered necessary to test their knowledge, be required to perform operations on the dead body.

THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Like the preceding corporations, the Royal Faculty of Physicians and Surgeons of Glasgow grants a Fellowship and a Licence to be held as separate qualifications.

Fellowship.—The Fellowship of the Faculty is granted after examination in medicine or surgery, together with an optional subject, which may be anatomy or physiology or be selected from any special branch of medicine or surgery, and 14 days' notice must be given by the candidate of his intention to present himself to Mr. Alexander Duncan, LL.D., the Faculty Hall, Glasgow. The fee for the Fellowship is £30, £10 of which sum are returned to any successful candidate who already holds the Licence of the Faculty. An additional sum of £20 is required in the case of candidates resident within seven miles of Glasgow. In certain circumstances Fellows may be elected as a mark of distinction.

Licence.—The Licence of the Royal Faculty is granted as a separate qualification to qualified practitioners in Medicine after examination in surgery, including surgical anatomy and clinical surgery. The fee is 15 guineas.

SCOTTISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

The hospitals which are recognised by the Scottish Conjoint Boards, as places where professional study for their diplomas can be pursued are all those institutions which feed the medical faculties of the universities. In addition the Scottish Boards recognise all the places which are recognised by the English Conjoint Board (see p. 602) and the Irish Conjoint Board (see p. 624).

III.—IRELAND.

THE UNIVERSITIES.

UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

Matriculation.—All students in the School of Physic intending to practise Physic must pass a matriculation examination. This may be either the Public Entrance of Trinity College and a Junior Freshman Term or a special Medical Preliminary, or, for Extern Students, an examination recognised by the General Medical Council. No student can be admitted for the winter course after Nov. 25th.

Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be concurrent with the Medical course and the B.A. degree need not be taken before the final medical examinations, but the Medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Descriptive and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics and Practical Physics, Physiology and Practical Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Dublin Hospital (see p. 625) (two years at a recognised London or Edinburgh hospital before the commencement of the Dublin curriculum may be counted as one year spent in such Dublin hospital); (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months; (5) Practical Midwifery with Clinical Lectures, including not less than 30 cases, six months; (6) Ophthalmic Surgery, three months. Three groups of examinations have to be passed. Preliminary Scientific Examination, including Physics and Chemistry, Botany, and Zoology. The Intermediate Medical, Part I., including Anatomy and Institutes of Medicine (Practical Histology and Physiology). The Intermediate Medical, Part II., including Applied Anatomy and Applied Physiology; and the Final Examination, which is divided into Part I., Materia Medica, Jurisprudence, and Pathology; and Part II., Medicine, Surgery, Midwifery, Gynæcology, Clinical Medicine, Mental Diseases, Clinical Surgery, Operations, and Clinical Ophthalmology. Part I. may be passed in the fourth year and Part II. in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

Doctor in Medicine.—A Doctor in Medicine must have passed all the qualifying examinations and must be a B.A. of three years' standing. He must also read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

Master in Surgery.—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects: 1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

Master in Obstetric Science.—A Master in Obstetric Science must be fully qualified and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery. He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

University Diplomas.—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees. A diploma in Medicine, Surgery, and Midwifery is a registrable qualification conferred upon candidates who have completed a full five years' course in Medicine and two years in Arts. The diploma, like the degree, qualifies for registration. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

Professors and Lecturers.—Natural Philosophy: M. W. J. Fry, M.A. Anatomy and Surgery: A. F. Dixon, D.Sc., M.B. University Anatomist: Sir C. B. Ball, Bart., M.D., M.Ch. Physic (Regius): James Little, M.D. Surgery (Regius): Sir C. B. Ball, Bart., M.Ch. Surgery: E. H. Taylor, M.D. Botany: H. H. Dixon, D.Sc. Physics: W. E. Thrift, F.T.C.D. Pathology: A. C. O'Sullivan, M.D., F.T.C.D. Institutes of Medicine: W. H. Thompson, M.D., D.Sc. Medicine: James Craig, M.D. Materia Medica: W. G. Smith, M.D. Midwifery: J. H. Wilson, F.R.C.P.I. Jurisprudence and Hygiene: H. T. Bewley, M.D. Chemistry: Sidney Young, D.Sc. Comparative Anatomy and Zoology: H. W. Mackintosh, M.A.

Clinical instruction.—The hospital facilities for clinical instruction available in Dublin will be described below.

THE NATIONAL UNIVERSITY OF IRELAND.

Matriculation.—All students intending to proceed to the medical degree of the University of Ireland must pass a matriculation examination, the next examination taking place in September in Dublin and at certain local centres. The examination is in (1) Latin or Greek; (2) French, German, or any approved modern language, including Irish; (3) English or History and Geography; (4) Mathematics; and (5) one other subject not already selected, such as Chemistry. In this group of subjects the student must, of course, to satisfy the regulations of the General Medical Council, take Latin, English, and Mathematics.

The following are the regulations for external students proceeding to medical degrees; it is probable that they are subject to modification:—

Degrees of M.B., B.Ch., and B.A.O.—Printed forms of application for admission to any medical examination may be had from "The Registrar, The National University of Ireland, Dublin." Each candidate must send to the Registrar a printed form of application for admission, accurately filled up and signed by the candidate, together

with the prescribed fee. 1. Students who pass the First Medical Examination in 1910, or have passed that examination in any year previously in the Royal University, may take Practical Chemistry, if the prescribed course of instruction has been pursued, at a special examination before or with the Second Examination in Medicine of the National University of Ireland, and on passing this special examination shall be regarded as having passed the First Examination in Medicine of the National University. 2. Students who have completed two years of study and who pass the Second Examination in Medicine in 1910 may, on completion of the courses required for the Third Examination of the late Royal University of Ireland, take either (*a*) an examination equivalent to the Third Medical Examination of the late Royal University of Ireland in autumn, 1911, or (*b*) an Examination in Anatomy and Physiology in spring, 1911. In the latter case they will subsequently conform to the new Regulations; in the former case they conform to the new Regulations, omitting Materia Medica at the new Third Examination. 3. Students who, in October, 1910, have completed three years of study, and have passed the Third Medical Examination in 1910, may conform either to the new Regulations (omitting Materia Medica), or may finish their studies under the Regulations prescribed by the Royal University. 4. Students who have completed four years of study in October, 1910, may finish their studies under the Regulations prescribed by the Royal University.

Degree of M.D., M.Ch., M.A.O.—Candidates may present themselves for the examination for this degree after an interval of three academic years from the time of obtaining the M.B., B.Ch., B.A.O. degrees, but in the case of candidates who have obtained a degree in Arts an interval of two years will be sufficient. All further information concerning fees, dates of examinations, production of certificates, and so on can be obtained from the Registrar of the University. The same formalities have to be complied with for proceeding to the degree of M.Ch. and M.A.O.

The Constituent Colleges of the National University of Ireland at which the full curriculum for medical degrees can be obtained are University College, Dublin; University College, Cork; and University College, Galway.

UNIVERSITY COLLEGE, DUBLIN.—The University and the College were created by the Irish University Act, 1908, and by Charters issued in December, 1908. Former students of the Cecilia-street School of Medicine who graduated in the Royal University may become graduate members of the new College. The constitution of the College, like that of the Constituent Colleges of Cork and Galway, provides for a governing body, an academic council consisting of professors and coöpted lecturers, a body of graduate members, and a body of student members matriculated in the University. The first professors and lecturers were appointed by the Dublin Commissioners Irish Universities Act, 1908. The College teaching staff includes 50 professors in all the Faculties of the University. As in the other Constituent Colleges of the National University students do not live within the College, but the statutes make provision for the entrance of the students under officers of residence who have supervision of the lodgings of students approved by the College, and of the conduct of students outside the College. There are also approved places of residence in connexion with the College. The courses for Degrees in all Faculties are submitted to the University for consideration, and on approval become binding on the students of the College. Matriculated students on entering the College are required to attend before the President and sign the Observance of Rules of the College, becoming student-members. Students' societies have been formed for debating and reading of papers in connexion with the Faculties of Medicine, Science, and Law, as well as societies of a more general character. The athletic clubs are well patronised, and the annual sports in May attract large fields of competitors. In the first Session 1909–10 the number of students entered in the College in all Faculties was 530; in the Session 1910–11 the number increased to 700, of whom over 300 were students of the Faculty of Medicine. The great majority of the students are proceeding to the Degrees of the National University of Ireland. The teaching is conducted in the College, St. Stephen's Green, in the Medical School, Cecilia-street, and in the University Buildings, Earlsfort-terrace. The new buildings will be erected on the Earlsfort-terrace site, about five acres in extent, which has been recently increased by a valuable addition, the gift of Lord Iveagh. Short as has been the period since the establishment of the College the foundation of a College library has already been made, now reaching to 40,000 volumes. The list of medical journals and periodicals to be taken annually has been made out so as to greatly extend the list at present available in Dublin, taking into account the journals available in the institutions in the city. The College is connected indirectly through its staff with many of the hospitals of the city, and the students may take their courses of clinical instruction at any hospital recognised by the University.

Degrees of M.B., B.Ch., and B.A.O.—The courses taken for the first year include Physics, Chemistry (Theoretical and Practical), Botany, Zoology, and Dissections. The second year is devoted to Anatomy and Physiology. Clinical attendance is taken in the third, fourth, and fifth years. The third year includes Materia Medica, Sanitary Science, Medical Jurisprudence, and Pathology, and a Third Examination is held at the end of the third year in these subjects. Applied Anatomy is introduced into the final year. The Final Examination includes the Written and Clinical Examinations in Medicine, Midwifery, and Surgery. The Dental course is kept at a high standard to facilitate a Dental student in obtaining the primary Medical degrees, the first two years in the Dental course being the same as the first two years in Medicine. The degree of M.D. may be obtained either by examination or on published work.

The courses for the D.P.H. are on the ordinary lines, and the Bacteriological Laboratory is open for research throughout the session.

The following is the teaching staff of this school:—

Dean of the Faculty (of the College): Professor McLoughlin.

Professors.—Anatomy: Edward Patrick McLoughlin, B.A., M.B., B.Ch., B.A.O. Physiology: Bertram James Collingwood, B.A., M.D. Zoology: George Sigerson, M.D. Chemistry: Hugh Ryan, M.A., D.Sc. Physics: John A. McClelland, M.A., D.Sc., F.R.S. Pathology and Bacteriology: Edmund J. McWeeney, M.A., M.D., D.P.H., F.R.C.P. Irel. Medicine: Sir Christopher J. Nixon, Bart., M.D., LL.D., F.R.C.P. Irel. Surgery: John S. McArdle, M.Ch., F.R.C.S. Irel. Midwifery and Gynæcology: Alfred J. Smith, M.B., F.R.C.S. Irel. Materia Medica and Therapeutics: Martin Dempsey, B.A., M.D., F.R.C.P. Irel. Hygiene and Medical Jurisprudence: J. N. Meenan, M.B., B.Ch., B.A.O., D.P.H. Botany: J. Bayley Butler, M.A., M.B., B.Ch., B.A.O.

Lecturers.—Ophthalmology: Louis Werner, M.B., F.R.C.S. Irel. Special Pathology: W. M. Crofton, B.A., M.B., B.Ch., B.A.O. Dental Surgery: E. Sheridan, F.R.C.S. Irel., L.D.S. Dental Mechanics: J. L. Potter, L.D.S.

Assistants and Demonstrators.—Anatomy: Dr. G. Keating, Mr. H. S. Meade, and Dr. H. Barnwille. Chemistry: Mr. G. Ebrill and Mr. T. Dillon. Medicine: Dr. J. F. O'Carroll. Pathology and Bacteriology: Mr. T. T. O'Farrell and Dr. W. D. O'Kelly. Pharmacy: Mr. M. Hayes. Physics: Mr. J. Nolan. Surgery: Dr. A. Blayney. Physiology: Dr. S. A. McSwiney.

Session 1911–12, Michaelmas and Hilary Terms: The dissecting room opens on Oct. 1st. An introductory class for students beginning the study of medicine is held from Oct. 10th to Oct. 17th. Ordinary medical lectures begin on Oct. 17th. Term examination is held on Dec. 16th and subsequent days. Recess begins Dec. 21st. Lectures are resumed on Jan. 10th, and the winter lectures terminate on March 23rd. Trinity Term: Lectures begin on April 16th and end on June 30th. All the University Examinations in Medicine are held in spring (end of March) and autumn, the first examination in spring being limited to Part I. (Physics and Chemistry). A First Examination in Medicine is also held in June.

Scholarships.—Entrance Scholarship Examination: A general Entrance Scholarship Examination is held for all Faculties, the value of the scholarships tenable for one year in the Faculty of Medicine varying from £40 to £20. The scholarships offered in the professional subjects are as follows:—Six scholarships of £30 each are offered in the second year of study, tenable for one year. The subjects are those of the first medical year—viz., Physics, Chemistry, Botany, and Zoology. Candidates must have attended the courses of the first medical year in the College in 1910–11, and must have passed the First Medical Examination of the University in 1911. Six scholarships of £30 each are also offered in the third year of study, tenable for one year. The

subjects are Anatomy and Physiology. Medical students who have pursued Honours second year courses in subjects of the Faculty of Science in the College in 1910–11 may, if they so desire, compete for the scholarships in such subjects, instead of presenting Anatomy and Physiology. Candidates must have attended the courses of study of the second medical year in the College in the year 1910–11. Six scholarships of £30 each are offered in the fourth year, tenable for one year, the subjects being Anatomy, Physiology, and Materia Medica. Candidates must have attended the courses of study in those subjects in the College, and must have passed the Second Medical Examination in the year 1911. Six fifth year scholarships of £30 each, tenable for one year, are offered for competition in the subjects of Medicine, Surgery, Pathology, Midwifery, Medical Jurisprudence, and Sanitary Science as follows: Group I., in Pathology, Medical Jurisprudence, and Sanitary Science; Group II., Medicine, Midwifery, and Surgery. The subjects are not to include clinical (or practical) examination. Candidates for these scholarships must have passed the Third Medical Examination of the University, and must not have passed, or have been candidates for, the M.B., B.Ch., and B.A.O. degrees. They must have been students of the College in the year 1910–11. They must have attended in the College the courses of lectures in the subjects they select for the examination. Candidates may select either group. Exhibitions are offered to students of the College for distinction in the University Examinations in Medicine as follows: one of £20 and one of £10 each at each of the First, Second, Third, and Final Examinations. A gold medal is also offered to the student of the College of highest merit at the M.B., B.Ch., and B.A.O. Examinations of the year.

UNIVERSITY COLLEGE, CORK: THE SCHOOL OF MEDICINE.—The building is provided with a very large, well-ventilated dissecting room supplied with electric light, with physiological, toxicological, pathological, and pharmaceutical laboratories, materia medica, anatomical and pathological museums, as well as a collection of surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants and are open to the students in the class of Botany. The Library contains over 50,000 volumes and is open daily during term time to students. The Medical Museum occupies a large room erected at the northern end of the medical buildings. It consists of (1) an anatomical museum and bone-room, occupying the gallery; (2) pathological museum; and (3) materia medica museum. The two latter collections are on the ground floor. There is a large and representative collection of surgical instruments. The Students' Club is open to all men students of the College who pay the annual subscription of 2*s.* 6*d.* The club is a detached building containing reading, smoking, and refreshment rooms, kitchen, and lavatory. There is also a ladies' club, subscription 1*s.* The Rugby Football Club shares the Mardyke ground with two other clubs, and there is also a practice ground within the walls of the College. There are also Gaelic football, Association football, cricket, hockey, hurling, lawn tennis, and athletic clubs, the last of these holding a public meeting once in each year in the Mardyke grounds.

Dean of the Faculty.—Professor A. E. Moore, M.B., B.Ch., B.A.O.

Professors.—Anatomy: D. P. Fitzgerald, M.B., B.Ch. Botany: H. A. Cummins, M.D., C.M.G. (Major, R.A.M.C.). Chemistry: A. E. Dixon, M.D. Experimental Physics: W. Bergin, M.A. Materia Medica: John Dundon, M.B., B.Ch., B.A.O., F.R.C.S. Eng., F.R.C.S. Irel. Medicine: W. Ashley Cummins, M.D., M.Ch. Obstetrics and Gynæcology: H. Corby, B.A., M.D., M.Ch. Pathology: A. E. Moore, M.B., B.Ch., B.A.O. Physiology: D. T. Barry, M.D., F.R.C.S. Surgery: C. Yelverton Pearson, M.D., M.Ch., F.R.C.S. Zoology: Marcus Hartog, M.A., D.Sc., F.L.S., F.R.H.S. Hygiene: Mr. D. D. Donovan. Medical Jurisprudence: Dr. P. T. O'Sullivan. Ophthalmology: Dr. A. W. Sandford.

Lecturer.—Mental Diseases: Dr. J. J. Fitzgerald.

Demonstrators.—Anatomy: Dr. W. F. O'Connor. Chemistry: Mr. J. Taylor, M.Sc., and Dr. J. L. McKee, Ph.D. Experimental Physics: Mr. P. Belas, B.A. Midwifery: Dr. M. Cagney. Pathology: Dr. W. Magner. Physiology: Dr. Denis Murphy. Surgery: Dr. C. B. Pearson. Zoology: Mr. J. C. Johnson, M.A.

Terms.—The First Term will commence on Oct. 2nd, 1911, and end on Dec. 22nd. The Second Term will commence on Jan. 9th, 1912, and end on March 30th. The Third Term will commence on April 22nd, 1912, and end with the session on June 30th. (*Note.*—The Easter Recess for the Medical Faculty includes the Friday and Saturday before Easter and Easter Monday.) Lectures in Chemistry, Experimental Physics, and Zoology will commence on Oct. 16th, 1911. Students who have been admitted as matriculated students are required to attend before the President and sign the Roll of Matriculated Students. Students who may be candidates for degrees in the National University of Ireland must have passed the Matriculation Examination of that University, and medical students must have passed a preliminary examination recognised by the General Medical Council. Candidates will be examined in Irish, Greek, or French or German, Latin, History, Geography, English, and Mathematics.

Admission of Medical Students.—Students in the Faculty of Medicine who have passed the First Professional Examination of the Conjoint Examinations of the Royal College of Physicians and the Royal College of Surgeons in Ireland, or of the Royal College of Physicians and Royal College of Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Physicians, London, and Royal College of Surgeons, England, may be admitted to the rank of second year students on making application to the Council and submitting a certificate of having passed the examination. Similarly, students who have passed the Second Professional Examination of the same Colleges may be admitted to the rank of third year students; and those who have passed the Third Professional Examination of the Dublin Colleges, or of the Edinburgh Colleges and Glasgow Faculties, may be admitted to the rank of fourth year students.

Class Fees.—Anatomy, £3; Physiology, £3; Practical Anatomy, £3; Practical Physiology, £3; Practical Pathology, £3; Operative Surgery, £3; Operative Surgery repeated, £2; Practical Chemistry, £3; first year—Botany Lectures, £2; first year—Botany Lectures, practical work, £1; first year—Zoology Lectures, £2; first year—Zoology Lectures, practical work, £1; first year—Physics Lectures, £2; first year—Physics Lectures, practical work, £1; all other subjects, £2; re-attendance, £1. Except for Operative Surgery the fees for practical classes are not reduced on re-attendance. Students who are signed up for all their Practical Anatomy can attend in the dissecting-room (without subjecst) by paying £1 per term, this fee admitting to all demonstrations. Students who have passed their Anatomical Examination can attend in the dissecting-room (without subjects) by paying £1 for the session or 10*s.* for a term.

Residence of Students.—There is no accommodation for the residence of students within the College, but students not living at home, or with relatives or friends, sanctioned by their parents or guardians, are required to live in a hostel or in recognised lodgings, a list of which can be obtained from the Secretary. All students are required to register their addresses each session in the book kept for that purpose in the hall porter's office, and to immediately notify to the registrar any change of address during the session. St. Anthony's Hall, adjoining the College, is the property of, and is occupied by, the Franciscan Order. A number of sets of rooms, together with recreation and common rooms, are provided for lay students who may desire to live there. For full particulars apply to the Very Rev. Superior, St. Anthony's Hall, Fernhurst-avenue. The Ursuline Convent, Blackrock, has a house of residence, quite separate from their Secondary School, for Catholic women students. Separate bedrooms, dining, and recreation rooms will be provided. For terms and details apply to the Rev. Mother Superior, Ursuline Convent, Blackrock, Cork. Girls' Friendly Society Lodge, Dyke Parade, provides for other women students. For terms apply to Miss Roy. Women students coming from a distance and not living with friends or relatives are strongly urged to reside in a hostel.

Scholarships.—Medicine: (*a*) Second Year.—In this year six scholarships, each of the value of £30, will be awarded on the result of the first University Examination in Medicine.

(*b*) Third Year.—Six scholarships, each of the value of £30, will be awarded on the result of the Second University Examination in Medicine. (*c*) Fourth Year.—The Six scholarships obtained at the commencement of the third year by candidates may be continued for a fourth year should the conduct and progress of the holders have been satisfactory. (*d*) Fifth Year.—In this year six scholarships, each of the value of £30, will be awarded on the result of the Third Examination, provided that the Professor of Medicine has expressed his approval of the work done by the candidates in his department. (*e*) Blayney Scholarship.—This scholarship, worth about £32, will be awarded to the candidate obtaining the highest marks in Honours at the M.B., B.Ch., B.A.O. Examination, provided that (*a*) the candidate has been a student in University College, Cork, for at least the three years previous to the examination; (*b*) that not more than three years have elapsed from the passing of his Second Medical Examination; and (*c*) that the whole examination is taken at one time.

The Charles Gold Medal.—In January, 1909, the governing body of University College, Cork, received from John James Charles, M.D., F.R.S.E., formerly Professor of Anatomy and Physiology in Queen's College, Cork, £125 Guaranteed Preference Stock of the London and North-Western Railway Company, as well as a die, to provide a gold medal for competition amongst the students attending the courses of Anatomy or of Physiology in University College, Cork.

Clinical Instruction.—Students may attend the South Infirmary, Cork North Charitable Infirmary, the Mercy Hospital, the Cork District Lunatic Asylum, the Victoria Hospital for Diseases of Women and Children, the County Lying-in Hospital, the Cork Maternity, the Cork Fever Hospital, the Cork District Hospital, and the Cork Ear, Eye, and Throat Hospital.

South Infirmary and County of Cork General Hospital (100 beds).—Staff: Consulting Physician: Dr. P. J. Cremen. Physicians: Dr. P. T. O'Sullivan and Mr. Norman I. Townsend. Surgeons: Mr. H. R. Townsend, Mr. T. Gelston Atkins, and Mr. Henry Corby. Ophthalmic Surgeon: Mr. A. W. Sandford. Physicians for Extern Patients: Mr. E. W. Allsom and Dr. E. V. Cantillon. Surgeon for Extern Patients: Mr. R. P. Crosbie. Pathologist: Dr. A. E. Moore. Dentist: Mr. T. C. Butterfield. Honorary Secretary: Mr. N. I. Townsend. Clinical instruction is given daily in the wards. Special instruction on Ophthalmic Surgery and Diseases of Women and Children will be given in the special wards for such cases. Fee for perpetual ticket, £18 18*s.*; for 12 months, £8 8*s.*; for six months, £5 5*s.*; for three months, £3 3*s.* Two resident pupils will be appointed by competitive examination. Clinical prizes will be given by the staff at the close of the session.

Cork North Charitable Infirmary and County and City of Cork General Hospital (100 beds).—Staff: Honorary Consulting Surgeon: Dr. N. J. Hobart. Physicians: Mr. D. D. Donovan and Dr. Edward Magner. Surgeons: Mr. Jeremiah Cotter, Mr. C. Y. Pearson, Mr. N. H. Hobart, and Mr. D. J. O'Mahony. Assistant Physician: Mr. R. B. Dalton. Assistant Surgeons: Mr. John Dundon and Mr. Richard P. Byrne. Pathologist: Vacant. Surgeon Dentist: Mr. William Pericho. Dispensing Chemist: Mr. M. Tucker. Honorary Secretary: Mr. R. B. Dalton. Clinical instruction is given daily in the wards by the physicians and surgeons. Special instruction is given to Junior Students on two days weekly. Fee for perpetual ticket, £18 18*s.*; for 12 or nine months, £8 8*s.*; for six months, £5 5*s.*; and for three months, £3 3*s.* Three resident pupils are appointed quarterly by the medical staff. All resident pupils are required to be registered pupils of the Hospital.

Mercy Medical Hospital.—Staff: Consulting Physician: Dr. P. J. Cremen. Consulting Surgeon: Dr. J. Cotter. Consulting Ophthalmic Surgeon: Dr. J. J. McMahon. Physician: Dr. D. J. O'Connor. Surgeons: Mr. J. Giusani and Mr. J. Dundon. Ophthalmic Surgeon: Mr. J. M. Browne. Surgeon Dentist: Mr. H. O'Keeffe. Resident Surgeon: Mr. P. Cullinan. Pathologist: Dr. M. A. Shinkwin. This hospital contains 80 beds for medical and surgical cases. There is also a daily extern for medical and surgical cases, as well as for diseases of the eye, ear, and throat. Extern medical attendances, 2800; surgical attendances, 1696; ophthalmic attendances, 5716; dental attendances, 1230; operations successfully performed, 630; intern patients, 1167. Honorary Secretary to the Staff: Dr. James Browne.

Cork District Lunatic Asylum.—Psychological Medicine: A course of Clinical Lectures on Mental Disease and Allied Neuroses will be delivered in the Cork District Lunatic Asylum on Mondays and Thursdays, commencing the first Thursday in February, by the Resident Medical Superintendent. All students wishing to enter for the course are expected to attend at the Asylum at 2.30 P.M. on that day. All information may be had at the Asylum.

Victoria Hospital for Diseases of Women and Children (Cork).—Honorary Staff: Dr. Ashley Cummins, Dr. C. Yelverton, Dr. P. Lee, Dr. Hobart, and Dr. C. B. Pearson. Lady Superintendent: Mrs. George Armstrong. There are 70 beds. Clinical instruction on Diseases Peculiar to Children is given. The extern department is open daily at 9.30.

County and City of Cork Lying-in Hospital (Erinville, Western-road; founded 1798).—Staff: Honorary Consulting Physicians: Dr. W. E. Ashley Cummins, Dr. Cotter, and Mr. D. D. Donovan. Honorary Obstetric Surgeon: Mr. C. Yelverton Pearson. Physicians: Dr. Norman I. Townsend, Dr. N. H. Hobart, Dr. Lucy E. Smith, and Dr. Daniel J. O'Connor. Assistant Physicians: Dr. P. J. O'Brien and Dr. E. V. Cantillon. This hospital contains 20 beds. Fee for six months' attendance, including clinical lectures, £3 3*s.* For further particulars apply to N. J. Hobart, honorary assistant secretary to staff.

Cork Maternity (Bachelor's Quay).—Staff: Honorary Consulting Surgeon: Dr. H. Macnaughton-Jones. Consulting Obstetric Physicians: Dr. T. Gelston Atkins and Dr. Henry Corby. Obstetric Physicians: Dr. John Booth, Dr. Richard Crosbie, and Dr. Michael Cagney. Three resident pupils are taken into the Maternity. Poor women are attended at their own homes. Between 400 and 500 are now annually entered on the Maternity register. Clinical lectures are delivered during the session. There is an extern department for the treatment of women's and children's diseases. Fee for attendance at clinical lectures and certificate, £3 3*s.* For further particulars apply to Dr. Henry Corby, secretary to staff.

Cork Fever Hospital.—Staff: Ordinary Physicians: Dr. T. B. Moriarty and Dr. D. J. Flynn. Extraordinary Physician: Mr. T. Callaghan. Resident Medical Officer and Registrar: Mr. A. G. Sutton. Upwards of 200 cases of various forms of fever and zymotic disease are treated yearly in this hospital. The Resident Medical Officer gives instruction in Practical Pharmacy, a certificate of which is necessary for the National University and Colleges of Physicians and Surgeons of Edinburgh.

Cork District Hospital (Douglas-road; 1200 beds).—Staff: Dr. W. E. Ashley Cummins, Dr. J. Giusani, Mr. D. Morrissy, and Mr. James T. O'Connor. Resident Medical Officers: Dr. Alice Barry and Dr. Michael C. Ahern. This hospital includes special buildings for fever and other infectious diseases (100 beds); for children's diseases (100 beds); and a Lock hospital, the only one in the South of Ireland (80 beds). It affords an extensive field for the study of all classes of diseases, acute and chronic, including special departments for gynæcology and diseases of the skin and nervous system. The physicians and surgeons visit the hospitals every morning at 10 o'clock. Lectures and clinical instruction are given daily in the wards by the physicians and surgeons. Three prizes are given at the end of the session for the best clinical reports—one in Medicine, one in Surgery, and one in Fever. Further particulars may be obtained from Dr. W. E. Ashley Cummins, 17, St. Patrick's-place, honorary secretary, medical staff.

Cork Eye, Ear, and Throat Hospital (Western-road).—Staff: Visiting Surgeon: Dr. Arthur W. Sandford. Consulting Physician: Dr. W. E. Ashley Cummins. This hospital is open to students attending the University College and others. Certificates of attendance for three or six months can be obtained. The hospital contains 35 beds. Over 4000 cases are treated during the year. Clinical instruction is given to students attending the hospital, with demonstrations on the use of special instruments. A course of Lectures on Ophthalmic Surgery is delivered during the session. For further information apply to Dr. Arthur Sandford, 13, St. Patrick's-place, Cork.

UNIVERSITY COLLEGE, GALWAY: SCHOOL OF MEDICINE.—The College contains well-lighted and ventilated dissecting-room and anatomical lecture theatre; physiological, pathological, pharmaceutical, chemical, and physical laboratories; anatomical, pathological, gynæcological, and materia medica museums; as well as a large natural history and

geological museum and an extensive library in which students can read and from which they can borrow books. New Chemical and Pathological Laboratories are in process of construction. There are eight Junior Scholarships in Medicine of the annual value of £25 each. Two are tenable by matriculated students of the first, second, third, and fourth years respectively. In addition Sessional Class Prizes are awarded. The Scholarship Examinations are held at the beginning of each session. There are extensive grounds, a portion of which is occupied by a Botanic Garden and a portion is at the disposal of the College Athletic Union. There are several student societies in the College, including a Biological Society. There are abundant facilities for research and Post-graduate work in the Chemistry, Physiology, and Pathology departments.

Professors—Natural Philosophy: A. Anderson, M.A., LL.D. Chemistry: A. Senier, Ph D. Natural History: R. J. Anderson, M.A., M.D. Anatomy and Physiology: J. P. Pye, M.D., D.Sc. Medicine: J. I. Lynham, M.D. Surgery: W. W. Brereton, L.R.C.S.I. Materia Medica: N. W. Colahan, M.D. Midwifery: R. J. Kinkead, M.D.

Lecturers—Pathology: T. Walsh, B.A., M.D., D.P.H. Chemistry: A. Robeson, Ph.D., D.Sc.

Clinical Instruction is given in the Galway Hospital and in the Galway Union and Fever Hospitals.

Galway County Hospital (60 beds).—Medical Officers: Dr. N. W. Colahan, Dr. J. P. Pye, Dr. W. W. Brereton, Dr. R. J. Kinkead, Dr. J. I. Lynham, Dr. McDermott, and Dr. G. Walsh. Clerk: S. J. Leonard. Patients, 600.

Galway Union and Fever Hospitals (120 beds).—Medical Officers: Dr. N. W. Colahan and Dr. M. J. McDonagh. A new Fever Hospital has just been built. A prospectus giving details of the courses of study and examination for degrees and of the subjects for public and private foundation scholarships may be had on application to the Registrar.

QUEEN'S UNIVERSITY OF BELFAST.

There are six degrees in the Faculty of Medicine of the University—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), and Master of Obstetrics (M.A.O.). The University also grants a Diploma in Public Health, particulars of which will be found in the University Calendar. The degrees of M.B., B.Ch., and B.A.O. are the primary degrees in the Faculty of Medicine, and are conferred at the same time and after the same course of study. No student is admitted to the final examination for these degrees until he has shown: (1) that he is a matriculated student of the University; (2) that he has completed the prescribed course of study in the Faculty of Medicine extending over a period of not less than five academic years from the date of his registration as a student of Medicine by the General Council of Medical Education and Registration of the United Kingdom; (3) that he has passed the several examinations prescribed; (4) that he has attended in the University during three academic years at least the courses of study prescribed for such degrees (the Senate may accept, for not more than two academic years of the required five, courses of study pursued in any other University or School of Medicine approved by the Senate); and (5) that he has attained the age of 21 years. Every candidate for admission as a matriculated student of the University shall pass such Matriculation Examination or fulfil such other test of fitness as may be prescribed by the Senate, which may prescribe the conditions under which students who have passed the Matriculation or Entrance Examination of any other University or College approved for that purpose (or who have fulfilled such other test of fitness as may be prescribed) may be exempted from passing the Matriculation Examination of the University.

The Matriculation Examination.—Entrants to the University who desire to proceed to a degree in the Faculty of Medicine shall be required to pass in five subjects, to be selected from (1) English; (2) Mathematics; (3) Latin; (4 and 5) any *two* of the following (of which *one* must be a Language)—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Physics, (*e*) Chemistry. There shall be two examinations for Matriculation, one in summer and one in autumn. All the subjects offered by a candidate for Matriculation shall be passed at one examination. Entrants (other than those who are matriculated students of the Royal University of Ireland) who have passed the Senior Grade of the Intermediate Education Board for Ireland in the subjects already prescribed in or after the year 1906 shall, on making formal application to the secretary, be admitted as matriculated students. Two examinations for Matriculation, each covering a period of six days, will be held during 1911. The autumn examination will commence on Monday, Oct. 2nd. Candidates must lodge their entrance forms, duly filled up, with the Secretary, and pay the prescribed fee of £1 1*s.*, not later than Sept. 2nd, or with a late fee of 10*s.*, not later than 14 days before the examination, after which no entry will be received. Entrance forms may be had from the secretary.

Entrance Scholarships.—Candidates who intend to present themselves for the Entrance Scholarships to be awarded after the October Matriculation Examination must give notice to the secretary of the subjects in which they propose to be examined not later than Sept. 30th, 1911. Information as to the scholarships which will be open for competition and the subjects which may be taken may be obtained from the secretary.

PRIMARY DEGREES OF M.B., B.CH., B.A.O.

All candidates for these degrees shall satisfy the examiners in the subjects of four examinations known as the First, Second, Third, and Fourth Medical Examinations respectively. Two examinations for each of these will be held in the spring and summer.

The First Medical Examination.—The subjects of this examination are Chemistry (Inorganic and Organic), Experimental and Practical Physics, Botany and Zoology, and Practical Botany and Zoology. The examination will be divided into two parts which may be taken separately: I., Chemistry, Practical Chemistry and Experimental Physics (including laboratory work); II., Botany and Zoology (including laboratory work).

The Second Medical Examination.—The subjects are Anatomy and Practical Anatomy, Physiology and Practical Physiology. Candidates who have previously passed the First Medical Examination may present themselves for this examination at the close of their second year.

The Third Medical Examination.—The subjects are: (1) Pathology and Practical Pathology; (2) Materia Medica, Pharmacology and Therapeutics; (3) Medical Jurisprudence; (4) Hygiene. Candidates who have previously passed the Second Medical Examination may present themselves for this examination at the close of the third year. Attendance on a course in any subject of the Third Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the First Medical Examination.

The Fourth Medical Examination.—The subjects are: (1) Medicine; (2) Surgery; (3) Midwifery; (4) Ophthalmology and Otology. This examination may be taken in two parts: I., Systematic; II., Clinical, Practical and Oral. Candidates who have previously passed the Third Examination may present themselves for Part I. of the Fourth Examination at the close of the fourth year, provided that they have fulfilled the necessary requirements as to attendance, &c., on the courses of instruction in the subjects of examination. Candidates who have passed Part I. of this examination may present themselves for Part II. at the close of the fifth year, provided that they have fulfilled the necessary requirements as to hospital attendance on the various clinical courses in the subjects of examination. Parts I. and II. may be taken together at the close of the fifth year. Attendance on a course in any subject of the Fourth Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the Second Medical Examination.

Courses of Study.—Candidates who desire to enter for any of the Medical Examinations must furnish satisfactory certificates of attendance on the various courses dealing with the subjects of the respective examinations.

Candidates for the Final Examination for the Degree of M.B., B.Ch., and B.A.O. are required to furnish the following certificates in addition to those granted for attendance on the necessary academic courses:—(1) Of having attended the medical and surgical practice of a hospital or hospitals, approved by the University, for at least 27 months. Such attendance shall only be reckoned from the beginning of the third year of medical study. (2) Of having acted as a dresser for at least three months in the surgical wards, and as a clinical clerk for at least three months in the medical wards, of a hospital recognised by the

University. These attendances must not be concurrent. (3) Of having received practical instruction in the methods of administration of Anæsthetics. (4) In Practical Midwifery. Every student shall be required either—(*a*) To have regularly attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months, and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 20 cases of labour under official medical supervision; or (*b*) to have conducted not less than 20 cases of labour, subject to the following conditions: That he has during one month given regular daily attendance upon the indoor practice of a Lying-in Hospital or the lying-in wards of a general hospital or Poor-law infirmary having a resident medical officer recognised for that purpose by the University; and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision. No certificate that the student has conducted the above-mentioned 20 cases of labour shall be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital, or of a dispensary having an obstetric staff recognised for that purpose by the University, or of a Poor-law infirmary having a resident medical officer so recognised. Every student before commencing the study of Practical Midwifery shall be required to have held the offices of clinical medical clerk and surgical dresser, and to have attended a course of lectures on Surgery and Midwifery. (5) In Gynæcology. Every student shall present a certificate of having received clinical instruction in Diseases of Women, either in a special hospital for diseases of women recognised by the University or in a special ward for diseases of women in a general hospital similarly recognised. (6) In Diseases of Children. Every student shall present a certificate of having received clinical instruction in Diseases of Children for a period of three months, either in a children's hospital or in a children's ward of a general hospital recognised by the University. (7) In Mental Diseases and Infectious Diseases. Every student shall present a certificate of having attended approved courses of instruction. (8) In Vaccination. Every student shall present a certificate of having attended lectures and practical instruction in Vaccination by a teacher recognised by the Local Government Board. (9) In Ophthalmology and Otology. Every student shall present a certificate of attendance for a period of three months at a hospital recognised by the University for clinical instruction in Diseases of the Eye and Ear.

The following order of study and examinations is recommended:—

First Year.

Winter Session.—Chemistry, Practical Chemistry, Experimental Physics (including Laboratory work), Anatomy (Elementary), and Practical Anatomy.

First Examination, Part I. (fee £1 1*s*.).

Summer Session.—Botany, Zoology, and Practical Botany and Zoology.

First Examination, Part II. (fee £1 1*s*.).

Second Year.

Winter Session.—Anatomy, Practical Anatomy, Physiology, and Practical Physiology (Physical and Chemical).

Summer Session.—Practical Anatomy (including Demonstrations), Physiology (continued), and Practical Histology.

Second Examination (fee £1 1*s*.).

Third Year.

Winter Session.—Pathology; Materia Medica, Pharmacology, and Therapeutics; Hygiene; and Hospital Practice.

Summer Session.—Practical Pathology, Practical Pharmacy, Medical Jurisprudence, and Hospital Practice.

Third Examination (fee £1 1*s*.).

Fourth Year.

Winter Session.—Surgery, Medicine, Midwifery, and Hospital Practice.

Summer Session.—Operative Surgery, Ophthalmology, Vaccination, and Hospital Practice.

The following Hospital courses should be taken during the Fourth or Fifth Year:—Diseases of Children, Mental Diseases, Practical Midwifery and Gynæcology, and Fevers.

Fourth Examination, Part I. (Systematic) (fee £1 1*s*.).

Fifth Year.

Winter Session.—Clinical Medicine, Clinical Surgery, Clinical Gynæcology, Clinical Ophthalmology, and Hospital Practice.

Summer Session.—Hospital Practice.

Fourth Examination, Part II. (Clinical, Practical, and Oral Examinations), fee £1 1*s*.

Admission to degrees of M.B., B.Ch., and B.A.O.—fee £10 10*s*.

DEGREES OF M.D., M.CH., AND M.A.O.

These degrees shall not be conferred until the expiration of at least three academic years, or in the case of graduates of the University in Arts or Science of at least two academic years, after admission to the primary degrees in the Faculty of Medicine. Every candidate must show that in the interval he has pursued such courses of study, or been engaged in such practical work as may be prescribed. These degrees may be conferred by the Senate either (*a*) after an examination, which includes written, oral, clinical, and practical examinations; or (*b*) on the submission of a thesis or other evidence of original study or research, to be approved by the Faculty of Medicine after an oral or other examination of the candidate on the subject thereof. On application for these degrees a fee of £2 2*s*., and on admission to them a fee of £2 2*s*., must be paid.

The subjects of the examination for the degree of M.D. are:—The Principles and Practice of Medicine, and one other special subject to be selected by the candidate from: (i.) Human Anatomy, including Embryology; (ii.) Physiology; (iii.) Pathology; (iv.) Pharmacology and Therapeutics; (v.) Sanitary Science and Public Health; (vi.) Forensic Medicine and Toxicology.

The subjects of the examination for the degree of M.Ch. are:—(1) Surgery, Theoretical and Practical, including Ophthalmology and Otology. (2) Surgical Pathology. (3) Surgical Anatomy and Operative Surgery, with the use of surgical instruments and appliances.

The subjects of the examination for the degree of M.A.O. are:—(1) Midwifery. (2) Diseases of Women and Children. (3) Pathology in its special bearing on Midwifery, and Diseases of Women and Children.

Scholarships.—At entrance for Students of Medicine and Science together Eight Scholarships tenable for one year. Of these, three (of the value of £30, £20, and £15 respectively) will be offered for competition in literary subjects, and five (of the value of £30, £20, £20, £15, and £15) in scientific subjects. Four Scholarships of the value £40, £30, £20, £15, tenable for one year, will be open for competition in connexion with the Summer First Medical Examination. Four Scholarships of the value £40, £30, £20, and £15, tenable for one year, will be open in connexion with the Summer Second Medical Examination. Four Scholarships of value £40, £30, £20, and £15 will be open in connexion with the Summer Third Medical Examination. Four Scholarships of value £30, £30, £30, and £20, tenable for one year, will be open in connexion with the Summer Fourth Medical Examination. Grants from a Post-Graduate Research Fund may be obtained by graduates in medicine of not more than two years' standing.

The Medical School.—The Donald Currie Chemical Buildings contain a lecture theatre, a preparation room, a chemical museum, a large class-room for elementary practical chemistry, laboratories for qualitative and quantitative analysis, rooms for water and gas analysis, dark room for photographic purposes, balance room, &c., provided with all modern appliances. Special facilities are given to those who wish to pursue original research. The Anatomical Department contains a large and well-lighted dissecting-room, a lecture-room, a professor's and demonstrator's room, a bone-room, and a laboratory for microscopic and photographic work. The Medical Museum is in the same building. The Jaffé Laboratories for Physiology comprise a lecture theatre, laboratories for practical work in chemical physiology, histology, and experimental physiology, and in addition small private research rooms, including balance, galvanometer, and centrifuge rooms. The Musgrave Pathological Laboratory.—In this department opportunity is afforded for research in pathology and bacteriology. The department is in touch with most of the hospitals in Belfast, and there is an ample supply of material for investigation by graduates in morbid histology, clinical pathology, and the bacteriology of infectious diseases. A course in pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in the department for the Public Health Committee of the corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, the diagnosis of cases of infectious diseases, &c. The certificate issued to members of the class in bacteriology qualifies for the D.P.H. degree. The Pharmaceutical Laboratory is fitted and equipped for the work of practically instructing students in the compounding and dispensing of medicines. Lectures will commence on Oct. 10th, 1911.

The Teaching Staff of the Faculty of Medicine.—Professors—Natural Philosophy: W. Blair Morton, M.A. Chemistry: E. A. Letts, Ph D., D.Sc. Zoology: Gregg Wilson, M.A., D.Sc. Botany: D. T. Gwynne-Vaughan, M.A. Anatomy: J. Symington, M.D., F.R.S. Physiology (Dunville Professor): T. H. Milroy, M.D., B.Sc. Materia Medica: Sir William Whitla, M.A., M.D. Pathology (Musgrave Professor): W. St. Clair Symmers, M.B. Medicine: J. A. Lindsay, M.A., M.D., F.R.C.P. Lond. Surgery: T. Sinclair, M.D., M.Ch., F.R.C.S. Eng. Midwifery: Sir John Byers, M.A., M.D., M.Ch., M.A.O. Lecturers—Medical Jurisprudence: W. St. C. Symmers, M.B., and T. Houston, M.D. Ophthalmology and Otology: Cecil Shaw, M.D., M.Ch. Hygiene: W. J. Wilson, M.D., D.P.H. Bio-Chemistry: J. A. Milroy, M.D. Physics: R. Jack, D.Sc. Organic

Chemistry: A. W. Stewart, D.Sc. Vaccination: J. M'Liesh, M.B., D.P.H. Assistants and Demonstrators—Anatomy: J. S. Dickey, M.D., R. A. Kerr, M.B., and P. T. Crymble, M.B., F.R.C.S. Eng. Applied Anatomy: P. T. Crymble, M.B., F.R.C.S. Eng. Physiology: J. H. Harbison, B.A., M.B. Practical Pharmacy: V. G. L. Fielden, M.B., Ph.C. Riddel Demonstrator in Pathology and Bacteriology: C. Dickson, M.D., D.P.H. Pathological Neurology: W. J. Maguire, M.D. Clinical Pathology: T. Houston, M.D. Medicine: J. E. MacIlwaine, M.D. Surgery: Howard Stevenson. Midwifery: C. G. Lowry. University Clinical Lecturers—Medicine: H. L. McKisack, M.D., M.R.C.P. Surgery: Sir Peter R. O'Connell, M.D., M.Ch. Midwifery, &c.: R. J. Johnstone, M.B., F.R.C.S. Eng. Ophthalmology: Henry Hanna, M.A., B.Sc., M.B. Internal Examiner in Sanitary Science: H. W. Bailie, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H.

Clinical instruction.—The following institutions are recognised by the University as affording proper opportunities for clinical instruction: the Royal Victoria Hospital, the Mater Infirmorum Hospital, the Union Hospitals, the Belfast Hospital for Sick Children, the Belfast Maternity, the Ulster Hospital for Women and Children, the Ulster Eye, Ear, and Throat Hospital, the Belfast Ophthalmic Hospital, the Purdysburn Fever Hospital, and the Belfast District Lunatic Asylum.

The staffs of the various institutions are as follows:—

The Royal Victoria Hospital (300 beds).—Physicians: Professor Sir William Whitla, Professor James A. Lindsay, Dr. William Calwell, and Dr. H. L. McKisack, Surgeons: Mr. J. Walton Browne, Professor T. Sinclair, Mr. A. B. Mitchell, and Mr. T. S. Kirk. Gynæcologist: Professor Sir John Byers. Surgeon for Diseases of the Eye, Ear, and Throat: Mr. James A. Craig. Pathologist: Professor W. St. C. Symmers. Physician for Diseases of the Skin: Dr. W. Calwell. Physician in charge of Out-patients: Dr. J. S. Morrow. Assistant Physician: Dr. J. E. McIlwaine. Surgeons in charge of Out-patients: Mr. Robert Campbell and Mr. Andrew Fullerton. Gynæcologist in charge of Out-patients: Mr. R. J. Johnstone. Assistant Surgeon to the Eye, Ear, and Throat Department: Mr. Henry Hanna. Assistant to the Pathologist: Mr. P. T. Crymble. Administrators of Anæsthetics: Dr. V. G. L. Fielden and Mr. S. T. Irwin. Medical Electrician: Dr. J. C. Rankin. Hæmatologist: Dr. Thomas Houston. Medical Tutor: Dr. Foster Coates. Surgical Tutor: Mr. Howard Stevenson. Registrars: Dr. Fred C. Smyth and Mr. H. Norman Barnett.

Mater Infirmorum Hospital (160 beds).—Consulting Physician: Sir Alexander Dempsey. Physicians: Dr. W. J. Maguire and Mr. W. M'Lorinan. Surgeons: Sir Peter R. O'Connell, Dr. J. B. Moore, and Mr. John O'Doherty. Gynæcologist: Sir Alexander Dempsey. Ophthalmic Surgeons: Dr. C. E. Shaw and Mr. H. Mulholland. Pathologist: Dr. W. St. Clair Symmers. Registrar: Dr. W. Hill. Dental Surgeons: Mr. J. McStay and Mr. Maurice Maguire. House Physician: Dr. Wisely. House Surgeon: Dr. Genuley.

Union Infirmary (600 beds).—Visiting Physicians: Mr. R. Hall and Dr. J. M'Liesh. Visiting Surgeon: Mr. J. Fulton. Ophthalmic Surgeon: Mr. J. A. Craig.

Hospital for Sick Children, Queen-street (52 beds).—Consulting Physicians: Dr. B. Smyth, Sir J. W. Byers, and Dr. F. H. Sinclair. Attending Physicians: Dr. J. McCaw and Dr. R. L. Leathem. Honorary Attending Assistant Physicians: Dr. M. B. Smyth and Dr. J. Colville. Consulting Surgeons: Sir J. Fagan and Mr. W. G. Mackenzie. Attending Surgeons: Mr. T. S. Kirk and Mr. R. Campbell. Honorary Attending Assistant Surgeons: Mr. A. Fullerton and Mr. P. T. Crymble. Ophthalmic Surgeon: Mr. W. K. Cready. Pathologist: Professor W. St. C. Symmers. Surgeon-Dentist: Mr. N. White. Anæsthetists: Dr. W. Burnside, Dr. H. N. Barnett, Dr. R. Hill, and Dr. J. Rusk. Honorary Attending Physicians to Convalescent Home (Carrickfergus): Dr. James A. Clarke and Dr. J. Houston.

Maternity Hospital, Townsend-street (33 beds).—Consulting Physician: Dr. B. Smyth. Consulting Surgeon: Mr. J. Campbell. Visiting Physicians: Dr. H. D. Osborne, Sir J. W. Byers, Dr. R. J. Johnstone, and Dr. M. B. Smyth.

Ulster Hospital for Women and Children (28 beds).—Consulting Staff, Children's Department—Physicians: Dr. J. D. Williamson and Dr. R. W. Leslie. Surgeons: Dr. A. B. Mitchell and Dr. H. Stevenson. Ophthalmic Surgeon: Dr. H. H. B. Cunningham. Women's Department: Dr. M. B. Andrews and Dr. C. G. Lowry. Pathologist: Dr. T. Houston. Anæsthetist: Dr. V. Fielden. Obstetric Physician: Dr. J. D. Williamson.

Benn Ulster Eye, Ear, and Throat Hospital (30 beds).—Acting Surgeon: Mr. W. M. Killen. Assistant Surgeon: Mr. H. Hanna.

Ophthalmic Hospital, Great Victoria-street (30 beds).—Consulting Physician: Sir W. Whitla. Surgeon: Mr. J. W. Browne. Assistant Surgeon: Mr. C. E. Shaw. Clinical instruction daily. Fee for three months £2 2*s*.

City Fever Hospital, Purdysburn (230 beds).—Physician in Charge: Dr. A. Gardner Robb.

District Lunatic Asylum (1000 beds).—Consulting and Visiting Physician: Dr. R. J. Purdon. Resident Medical Superintendent: Dr. W. Graham. Assistant Medical Officers: Dr. J. Patrick and Dr. S. J. Graham.

IRISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The College issues its Licences in Medicine and in Midwifery to practitioners whose names appear on the Medical Register of the United Kingdom.

The Licence in Medicine.—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

The Licence in Midwifery.—Candidates must produce certificates of registration. A registered medical practitioner of five years' standing may be exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15*s*. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16*s*.—to be lodged in one sum. (*Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege and will be required to pay the full fee of five guineas for the Licence of Midwifery.*) Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £5 5*s*. Fee for special examination for the Licence to practise Midwifery, £10 10*s*. The examinations for these Licences are held in the three days preceding the first Friday in February, May, and November.

The Membership.—Examinations for Membership are held in January, April, July, and October. The fee for the examination is £21 to Licentiates of the College, or £36 15*s*. to non-Licentiates. Further particulars can be obtained from the Registrar of the Royal College of Physicians of Ireland, Kildare-street, Dublin.

The Fellowship.—Fellows are elected by ballot. Applicants must have been a Member of the College for at least one year and must have attained the age of 27 years. There is a fee of £35 in addition to a stamp duty of £25.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence in Surgery.—A candidate whose name is entered either on the Medical Register for the United Kingdom, the Colonial Medical Register, or the Foreign Medical Register of the year in which he presents himself for examination, and who satisfies the Council that he has passed through a course of study and Examinations equivalent to those required by the Regulations of the Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland, preceded by the passing of an Examination in Arts recognised by the General Medical Council, may, at the discretion of the Council, be admitted to the Examination.

Candidates are examined in Surgery, Clinical Surgery, Operative Surgery on the subject, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly *viva voce*, and partly practical. The fee is £26 5*s*., of which £5 5*s*. is retained by the College in the case of unsuccessful candidates.

Candidates are required to lodge their applications, declarations, and certificates with the Registrar at least 21 days before the date of the Examination.

Diploma in Midwifery.—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*)

attendance at a course of lectures on Midwifery and Diseases of Women and Children in some school recognised by the Council; (*b*) attendance on six months' practice in connexion with a recognised lying-in hospital or dispensary for lying-in women and children; and (*c*) of having conducted at least 30 labour cases. The fee for the examination is £15 15*s*., of which £5 5*s*. is retained by the College in case the candidate is unsuccessful.

Fellowship Examinations.—A candidate for the Fellowship shall make application to the President and Council to be admitted to examination. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to the application being considered, and the candidate shall then, if approved by the Council, be admitted to the next sessional examination. In order that these regulations may be carried out candidates are required to lodge their applications complete with the Registrar at least seven days before the date of examination. Sessional Fellowship Examinations commence as follows:—The primary on the first Monday in March, the third Monday in July, and the third Monday in November; the Final on the second Monday in March, the third Wednesday in July, and the fourth Monday in November. Special examinations will not be granted by the Council under any circumstances.

Candidates are required to pass two examinations—Primary and Final. Candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary Examination are (*a*) Anatomy, including Dissections; and (*b*) Physiology and Histology.

The subjects for the Final Examination are Surgery, including Surgical Anatomy, and Pathology. The examination is partly written and partly *viva voce*, and includes the examination of patients, and the performance of operations on the dead body. Candidates must pass in all subjects at one examination.

The conditions of admission to the Primary Examination are that the candidate must produce evidence of having completed examinations in Anatomy, Physiology, and Histology under a licensing body whose degrees entitle the holder to have his name placed on the Medical Register. For admission to the Final Examination the candidate must have passed the Primary Examination, and must be a Licentiate or Graduate in Surgery of a university or licensing body recognised by the General Medical Council; all such candidates must not be less than 25 years of age. The fees for the examinations are as follows:—Primary Examination, each admission, £5 5*s*.; Final Examination, each admission, £5 5*s*. Of these examination fees £10 10*s*. will be reckoned as part of the £42 fee payable upon admission to the Fellowship. The fee to be paid is £42, except when the new Fellow is a Licentiate of the College, in which case it is £26 5*s*.

In cases of rejection the examination fees are retained by the College and are not allowed for in the fees for re-examination.

A rejected candidate will not be again admitted to examination until after a period of three months.

Further particulars can be obtained from the Registrar of the College, Stephen's-green, West Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence of having before entering on medical studies passed a Preliminary Examination in general education recognised by the Royal Colleges. Each candidate before receiving his diplomas must produce a registrar's certificate or other satisfactory evidence that he has attained the age of 21 years.

Preliminary Examination.—The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

Professional Examinations.—Every candidate must pass four Professional Examinations—at the end of the first, second, third, and fifth years respectively of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other licensing body.

First Professional Examination.—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; and (2) of having attended a course of—(*a*) lectures on Theoretical Chemistry, six months; (*b*) Practical Chemistry, three months; (*c*) Biology, three months; and (*d*) Physics.

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Biology. The fee for this examination is £15 15*s*.

Second Professional Examination.—Candidates are not admissible to this examination till they have passed in the subjects of the First Professional Examination, and they must produce evidence of having attended (*a*) the practice of a medico-chirurgical hospital for nine months; (*b*) anatomical dissections, six months; and Lectures on (*a*) Anatomy, six months; (*b*) Physiology, six months; (*c*) Practical Physiology and Histology, three months.

The subjects of the Second Professional Examination are the following:—(1) Anatomy; and (2) Physiology and Histology. The fee for this examination is £10 10*s*.

Third Professional Examination.—Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination and certificates of having attended courses of instruction in (*a*) the practice of a medico-chirurgical hospital for nine months; (*b*) Pathology—(1) Systematic, (2) Practical, three months each; (*c*) Materia Medica, Pharmacy, and Therapeutics, three months; (*d*) Forensic Medicine and Public Health, three months.

The subjects for the Third Professional Examination are the following:—(1) Pathology; (2) Materia Medica, Pharmacy, and Therapeutics; (3) Public Health and Forensic Medicine. The fee for this examination is £9 9*s*.

Final Professional Examination.—Before admission to the Final Examination candidates must have passed the Third Professional Examination and produced evidence of having attended in Division I. the practice of a medico-chirurgical hospital for nine months (unless such evidence has been previously produced for admission in Division II.); the practice of a recognised fever hospital or the fever wards of a recognised clinical hospital, three months; clinical instruction in Mental Diseases, one month (12 attendances); Lectures on Medicine, six months at a recognised medical school; of having performed the duties of medical clinical clerk in a recognised hospital for three months; of having attended a course of instruction in post-mortem examinations and demonstrations during one session. In Division II. of having attended the practice of a medico-chirurgical hospital for nine months (unless such evidence has been previously produced for admission to Division I.); clinical instruction in Ophthalmic and Aural Surgery, three months; lectures on Surgery, six months at a recognised medical school; instruction in Operative Surgery, three months at a recognised medical school; of having performed the duties of surgical dresser in a recognised hospital for three months; of having attended a course of instruction in the practical administration of general anæsthetics. In Division III. of having attended a midwifery hospital or maternity and having been present at 20 labours, six months; instruction on vaccination, six attendances to be certified by a public vaccinator; lectures on midwifery (including diseases peculiar to women and to new-born children), six months at a recognised medical school. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the Divisions I., II., or III., provided he has completed his curriculum as far as concerns the division in which he presents himself. The examination in at least one of the divisions must be deferred till the end of the fifth year.

The subjects of the Final Examination are: (1) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (2) Surgery, Operative and Ophthalmic; and (3) Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children. The fee is £6 6*s*. Further particulars can be obtained from Alfred Miller, the Secretary of the

Committee of Management, Royal College of Physicians, Kildare-street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND (SCHOOLS OF SURGERY).—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for over a century. They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued. The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is heated by hot-water pipes and lighted throughout by the electric light. Winter Session commences Oct. 15th; Summer Session, April 1st. Prospectuses and guide for medical students can be obtained post free on written application to the Registrar, Royal College of Surgeons, Stephen's-green, W., Dublin.

Scholarships and Prizes.—At the College there are offered the Class Prizes: two Gold Medals, two Scholarships, and a Bequest. The Class Prizes having the value of £100 are open to students of the class and are awarded for proficiency in the class examination. The Stoney Gold Medal is confined for competition to the Anatomy Class and the Surgery Gold Medal to the Practical Surgery Class. They are each of the value of £3 15*s.*, and are open to students of the respective classes. The Carmichael Scholarship of the value of £15 is open to students of the third year and is awarded on the result of examination in anatomy, physiology, histology, chemistry, materia medica, and pharmacy. The Mayne Scholarship of the value of £8 is open to students of the third and fourth year and is obtained by merit in the subjects of surgery, medicine, pathology, midwifery, and diseases of women. The Barker Bequest of £26 5*s.* is awarded for the best Dissection and is open to all medical students.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who present certificates of having fully completed the course of study as laid down in the curriculum and who pass the necessary examinations. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, with also the privileges of the Apothecary's Licence. There are four professional examinations, the total fees for which amount to 21 guineas. Ladies are eligible for the diploma. Registered medical practitioners will receive the diploma of the Hall upon passing an examination in the subject or subjects not covered by their previous qualifications and on paying a fee of 10 guineas.

The fees payable for each examination are as follows:—first professional, £5 5*s.*; second, £5 5*s.*; third, £5 5*s.*; final examination, £6 6*s.* If a candidate gives three clear days' notice of his inability to attend he may present himself at the ensuing examination without a further fee. A candidate is allowed for each professional examination which he has completed at any other licensing body except the final. If he has passed in some only of the subjects in a given examination he has to pay the whole of the fee for that examination. The fees for re-examination are for each subject £1 1*s.*, except in the subjects of surgery, medicine, and anatomy, and the fees for which are 2 guineas each. The fee for the third and final or final alone is £15 15*s.* when the other examinations have been taken elsewhere. All examination fees are to be lodged in the National Bank of Ireland, College Green, to the credit of the Examination Committee. Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary-street, Dublin, at least 14 clear days before the first day of examination.

There are four examinations—first, second, third, and final. They are held quarterly on the first Monday in January, April, July, and October. The first examination comprises biology, physics, theoretical and practical chemistry (with an examination at the bench). Pharmacy is put down in this examination, but it may be taken at any of the first three examinations. Candidates holding a Pharmaceutical licence are exempt from this subject. The second examination comprises anatomy of the whole body (including practical dissections), physiology, and practical histology. The third examination comprises pathology, materia medica, medical jurisprudence, and hygiene. The final examination comprises medicine, including clinical and oral, surgery, including operations, clinical and oral, ophthalmic surgery, clinical only, midwifery, and gynæcology.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must before proceeding to the final examination produce evidence of having attended courses of instruction as follows:—One course each (of six months) of the following: anatomy (lectures), chemistry (theoretical), midwifery, practice of medicine, physiology, surgery, and dissections, two courses of six months each. Courses of three months: materia medica, medical jurisprudence, chemistry (practical), practical physiology and histology, operative surgery, physics, clinical ophthalmology, biology, clinical instruction in mental disease, pathology, and a course in vaccination. Medico-chirurgical hospital, 27 months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance, six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital. Three months' study of fever—which may be included in his 27 months' hospital attendance—in a hospital containing fever wards, and having taken notes of five cases of fever—viz., either typhus fever, typhoid fever, scarlet fever, small-pox, or measles. Six months' practical midwifery and diseases of women during the winter or summer of the third or the fourth year at a recognised lying-in hospital or maternity. Three months' practical pharmacy in a recognised clinical hospital or a recognised school of pharmacy, or a year in the compounding department of a licentiate apothecary or a pharmaceutical chemist. Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years. The details of the course of education required and syllabus of the examinations will be supplied on application to the Registrar at 40, Mary-street, Dublin.

HOSPITALS AFFORDING PRACTICE RECOGNISED BY THE IRISH UNIVERSITIES AND CORPORATIONS.[1]

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

Staff.—Physicians: Dr. James Little, Dr. Wallace Beatty, Dr. H. T. Bewley, and Dr. G. Peacocke. Surgeons: Mr. F. T. Heuston, Mr. T. E. Gordon, and Mr. L. G. Gunn. Obstetric Surgeon: Sir W. J. Smyly. Ophthalmic Surgeon: Sir H. R. Swanzy. Throat Surgeon: Dr. S. Horace Law. Pathologists and Bacteriologists: Dr. J. Alfred Scott and Dr. W. Geoffrey Harvey. Dental Surgeon: Mr. John Stanton. Assistant Physician: Dr. W. G. Harvey. Assistant Surgeon: Mr. W. Pearson.

Two resident surgeons are elected yearly and four resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Dermatology will be awarded.

Hudson Scholarship.—In addition to the junior prizes the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in medicine, surgery, and gynæcology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Dr. H. T. Bewley.

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds and

[1] This list of the institutions recognised by the Conjoint Board of Ireland is supplemented in the regulations of the Colleges by those hospitals mentioned as recognised institutions in Scotland and England. The recognised facilities for clinical instruction in Belfast, Cork, and Galway have been described in connexion with the Belfast and National Universities.

consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of diseases peculiar to women. The practice of this hospital is one of the largest in Ireland. Lectures are delivered, practical instruction given, and gynæcological operations are performed in the theatres daily. There is a general dispensary held daily, at which instruction is given on the Diseases of Women and Children. There is a special afternoon dispensary held by the Master and his assistants, at which practical instruction in gynæcology is given. There is no extra charge for attendance at this dispensary. There is accommodation for intern pupils who enjoy exceptional advantages of acquiring a thorough knowledge of this branch of their profession. Lady medical students can reside in the hospital. The residents' quarters are comfortable. Clinical assistants are appointed from amongst the pupils as vacancies occur. Certificates of attendance at this hospital are accepted by all licensing bodies. Fees: Extern pupils for full course of six months, £8 8*s*.; three months, £4 4*s*. Intern pupils, one month, £4 4*s*.; each consecutive month, £3 3*s*.; six months, £18 18*s*.; board and lodging in the hospital, 20*s*. per week. Lady students' intern, one month, £5 5*s*.; each consecutive month, £4 4*s*. Registration fee, in advance, 10*s*. 6*d*. Students can enter for attendance at any time, but preference is given to those entering from the first day of the month. Further particulars may be had on application to the Master or the Registrar at the hospital.

Staff.—Consulting Physicians: Sir John W. Moore and Sir J. M. Redmond. Consulting Surgeons: Dr. F. T. Heuston and Dr. F. W. Kidd. Pathologist: Dr. E. J. McWeeney. Pathological Analyst: Sir C. A. Cameron. Master: Dr. M. J. Gibson. Assistant Master: Dr. R. A. MacLaverty and Dr. Louis A. Cassidy. Registrar: Fred. A. Heney.

SIR PATRICK DUN'S HOSPITAL, Grand Canal-street, Dublin.—Classes for clinical instruction both in Medicine and Surgery are held each morning from 9 o'clock from Oct. 1st till the end of June. Special classes for students commencing their hospital studies will be held in the wards during the months of October, November, and December. They will embrace the elements of Medicine and Surgery, including note-taking. The surgical operating theatre, which has recently been erected, is equipped upon the most approved principles and is thoroughly in accord with modern surgical requirements. Instruction in the Diseases of Women is given Tuesday and Friday at 10 A.M. There is a special wing devoted to fever cases. Pathological and Bacteriological Demonstrations will be given on Fridays at 10.30 A.M., when there is suitable material, during the Winter and Summer Sessions in the new Pathological Laboratory. A new department has been opened for the special treatment of Throat, Nose, and Ear Diseases under the direction of Dr. R. H. Woods. Instruction will be given in these subjects and in the use of the Laryngoscope and Otoscope to senior students on Mondays and Thursdays. Arrangements have been made to give practical instruction in anæsthetics to senior students. Practical demonstrations are given in Dentistry on Wednesdays in the new Special Dispensary. Opportunities are given the members of the hospital class of seeing the various applications of the X rays to the diagnosis and treatment of injury and disease. Opportunities are also afforded in the out-patient department for the diagnosis and treatment of the numerous minor ailments not met with in the hospital wards. A Resident Surgeon, with salary, is appointed annually. The election takes place at the end of December. Five Resident Pupils are appointed each half-year. Six Surgical Dressers and six Clinical Clerks are appointed each month.

Prizes and Medals.—Clinical medals and prizes amounting to about £15 each will be awarded in Medicine and in Surgery respectively in accordance with the will of the late Rev. Samuel Haughton, M.D., S.F.T.C.D. Candidates who fail to obtain these medals and prizes will be awarded special certificates in Medicine and in Surgery provided they show sufficient merit. The next examination will be held in April, 1912.

Fees.—Winter and summer session, £12 12*s*.; winter session (six months), £8 8*s*.; and summer session (three months), £5 5*s*. Special certificate in anæsthetics, £1 1*s*. The practice of this hospital is open to students of medicine in attendance on schools other than the School of Physic, the certificates being recognised by the Royal University and Royal Colleges of Surgeons of England, Ireland, and Scotland.

Consulting Physicians: Dr. J. M. Purser and Dr. J. Magee Finny. Physicians: Dr. W. G. Smith, Dr. H. C. Drury, Dr. James Craig, and Dr. T. Henry Wilson Assistant Physician: Dr. E. J. Watson. Surgeons: Sir Charles B. Ball, Bart., Dr. E. H. Taylor, and Dr. C. A. K. Ball. Pathologist: Dr. A. C. O'Sullivan. Department for Throat, Nose, and Ear: Dr. R. H. Woods. Assistant Surgeon: Dr. C. M. Benson. X Ray Department: Dr. E. J. Watson. House Surgeon: Dr. G. E. Craig.

Further information will be supplied by the Secretary to the Medical Board, Dr. H. C. Drury.

JERVIS-STREET HOSPITAL, Dublin.—Founded 1718; rebuilt 1886. 130 beds. A new out-patient department has been completed and contains all modern requirements. Physicians: Dr. F. X. Callaghan and Dr. R. J. Rowlette. Surgeons: Mr. W. Stoker, Mr. L. A. Byrne, Mr. J. L. Keegan, and Mr. P. Hayden. Assistant Surgeon: Mr. T. W. Conway. X Rayist: Dr. H. W. Mason. Gynæcologist: Dr. McArdle. Ophthalmic Surgeon: Mr. P. Maxwell. Pathologist: Mr. E. J. McWeeney. Dentist: Mr. A. K. MacDonald. Secretary: Mr. Kiernan O'Dea.

MATER MISERICORDIÆ HOSPITAL,[2] Dublin.—Consulting Physician: Sir Francis R. Cruise. Physicians: Sir Christopher Nixon, Bart., Sir Joseph Redmond, Dr. John Murphy, and Dr. Martin Dempsey. Surgeons: Sir Arthur Chance, Sir John Lentaigne, and Mr. Alexander Blayney. Assistant Physician: Dr. John O'Donnell. Temporary Assistant Surgeon: Mr. D. Farnan. Gynæcologist: Dr. Robert Farnan. Ophthalmic Surgeon: Mr. Louis Werner. Surgeon for Diseases of Throat and Nose: Mr. Patrick Dempsey. Dental Surgeon: Mr. E. Sheridan. Pathologist: Professor Edmond McWeeney. Assistant Pathologist: Dr. W. D. O'Kelly. X Rayist: Mr. Maurice Hayes. Anæsthetist and Surgical Registrar: Dr. Patrick O'Farrell. This hospital, the largest in Dublin, at present containing 345 beds, is open at all hours for the reception of accidents and urgent cases. Clinical instruction will be given by the Physicians and Surgeons at 9 A.M. daily. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Ophthalmic Surgery will be taught in the Special Wards and in the Dispensary. Surgical Operations will be performed daily at 11 o'clock. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents. Instruction will be given on Pathology and Bacteriology. Two House Physicians, six House Surgeons, and 20 resident pupils will be elected annually. Dressers and Clinical Clerks will also be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes will be offered for competition annually. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and a Home for Trained Nurses have been opened in connexion with the Hospital.

Terms of attendance.—Nine months, £12 12*s*.; six winter months, £8 8*s*.; three summer months, £5 5*s*. Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c., may be obtained from the Secretary, Medical Board.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.[2]—Physicians: Sir John William Moore, Dr. J. Craig, and Dr. Edward E. Lennon. Surgeons: Sir L. H. Ormsby, Mr. W. J. Hepburn, Mr. William Taylor, Mr. R. Lane Joynt, and Mr. F. C. Dwyer. Gynæcologist: Dr. F. W. Kidd. Clinical Assistants: Dr. William Boxwell and Dr. Henry Stokes. Pathologist: Professor Arthur H. White. This hospital was founded in 1753 and now contains 160 beds available for clinical teaching. A building containing 40

[2] No returns.

beds for the isolated treatment of fevers is attached to the hospital. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and 12 Surgical Resident Pupils and Dressers are appointed every six months, and a House Surgeon and two Clinical Assistants are elected annually. The session will open on Oct. 1st. A prospectus giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, Mr. William Taylor, 47, Fitzwilliam-square, Dublin.

MERCER'S HOSPITAL.—This hospital, founded in 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c. There are a large out-patient department and a special department for diseases peculiar to women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8*s.*; Summer, three months, £5 5*s.*; nine months, £12 12*s.*

Consulting Physician: Dr. J. Magee Finny. Consulting Surgeon: Mr. H. Fitzgibbon. Consulting Gynæcologist: Dr. J. H. Glenn. Consulting Ophthalmic Surgeon: Mr. J. B. Story. Physicians: Dr. E. L'Estrange Ledwich and Dr. J. Lumsden. Surgeons: Mr. R. C. B. Maunsell, Mr. S. S. Pringle, and Mr. W. Ireland de C. Wheeler. Gynæcologist: Dr. A. N. Holmes. Radiologist: Dr. W. H. Mason. Pathologist: Dr. J. T. Wigham.

For further particulars apply to Mr. Seton Pringle, Hon. Sec.. Medical Board, 27, Lower Baggot-street, Dublin.

NATIONAL MATERNITY HOSPITAL, Holles-street, Dublin.—Established 1894. Masters: Dr. A. J. Horne and Dr. R. J. White. Intern cases, 898; extern cases, 1135; dispensary cases, 4447. Comfortable quarters have been recently provided for students, and a large number of cases at the hospital give great opportunities for practical work. Arrangements are also made for post-graduate and special courses. Certificates of attendance at the hospital are recognised by all the licensing bodies. For further particulars apply to the Masters.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.[3]—These hospitals contain 270 beds—86 for Surgical cases, 64 for Medical cases, and 120 for Fever and other Epidemic Diseases. A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services. 12 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Dr. Travers Smith, Hon. Secretary, 20, Lower Fitzwilliam-street, Dublin.

ROTUNDA HOSPITAL, Dublin.—This institution is the largest combined gynæcological and maternity hospital in the British empire. Qualified men who take out a course of three months' duration obtain (if they show keenness and capacity) one or more forceps applications and a certain number of minor gynæcological operations. Students can enter at any time for the practice of the hospital and have access, not alone to the maternity and gynæcological wards, but also to the pathological laboratory attached to the hospital. The residential quarters have undergone considerable improvement and afford comfortable accommodation. Valuable appointments are periodically filled by qualified students who have obtained the hospital diploma. Women students can reside in the hospital on terms similar to those enjoyed by men. Master: Dr. Henry Jellett. Assistants: Dr. B. A. H. Solomons and Dr. Madill. Pathologist: Dr. R. J. Rowlette. Assistants: Dr. Allen and Dr. English. For further particulars apply to Dr. Henry Jellett, Master.

ROYAL CITY OF DUBLIN HOSPITAL.—Founded 1832; enlarged 1851; rebuilt 1893. 124 beds. Consulting Physician: Dr. H. Benson. Physicians: Dr. A. R. Parsons and Dr. T. G. Moorhead. Consulting Surgeon: Mr. H. Fitzgibbon. Surgeons: Mr. G. J. Johnston, Mr. H. Moore, and Mr. R. A. Stoney. Ophthalmic and Aural Surgeon: Mr. A. H. Benson. Gynæcologist: Mr. G. Fitzgibbon. Anæsthetist: Mr. G. P. Meldon. Dental Surgeon: Mr. D. L. Rogers. Secretary: Mr. T. Spunner.

ROYAL VICTORIA EYE AND EAR HOSPITAL, Dublin.—Established 1844. Incorporated 1897. 82 beds. Consulting Physician: Dr. J. Little. Consulting Dental Surgeon: Mr. A. W. W. Baker. Surgeons: Sir Henry Swanzy, Mr. J. B. Story, and Mr. Arthur H. Benson. Junior Surgeon: Mr. P. W. Maxwell. Assistant Surgeons: Mr. L. Werner, Mr. R. J. Montgomery, Mr. H. C. Mooney, and Mr. F. C. Crawley. Clinical Assistant: Miss K. F. Lynn. Physician to Dispensary for Throat: Dr. R. A. Hayes. Surgical Radiographer: Mr. W. S. Haughton. Registrar: Mr. E. Parker. In-patients, 1426; out-patients, 10,132. Two house surgeons appointed annually.

DR. STEEVENS' HOSPITAL, Dublin.—Established 1720. 200 beds. Consulting Physicians: Dr. J. Little, Dr. J. M. Purser, and Dr. H. C. Tweedy. Consulting Surgeon: Sir C. B. Ball. Physicians: Dr. R. A. Hayes, Dr. T. P. C. Kirkpatrick, and Dr. W. A. Winter. Assistant Physician: Dr. J. J. Purser. Surgeons: Mr. R. B. McCausland, Mr. R. L. Swan, and Mr. W. S. Haughton. Assistant Surgeon: Mr. W. C. Stevenson. Anæsthetist: Dr. F. O'Brien Kennedy. Obstetric Physician and Gynæcologist: Dr. E. H. Tweedy. Ophthalmic and Aural Surgeon: Mr. J. B. Story. Pathologist: Dr. W. M. Crofton. Dental Surgeon: Mr. G. M. P. Murray. Resident Surgeon: Dr. G. C. Sneyd. Secretary: Mr. G. E. Pepper. Patients, 1571.

ST. VINCENT'S HOSPITAL AND DISPENSARY, Dublin.[4]—Established 1834. 160 beds. Physicians and Lecturers on Medicine: Dr. M. F. Cox, Dr. M. McHugh, and Dr. W. J. Dargan. Physician for Extern Department: Dr. J. Meenan. Surgeon for Extern Department: Mr. D. J. Kennedy. Surgeons and Lecturers on Surgery: Mr. J. S. McArdle, Mr. R. F. Tobin, and Mr. P. J. Fagan. Gynæcologist and Lecturer on Gynæcology: Mr. A. J. Smith. Pathologist and Lecturer on Pathology: Dr. T. T. O'Farrell. Surgeon-Dentist and Lecturer on Dentistry: Mr. J. J. Murphy. Pharmacist and Lecturer on Pharmacy: R. Shaw.

UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a practitioner's examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. The fees are—For matriculation, £8 12*s.*; for 1st Part, £4 4*s.*; for 2nd Part, £4 8*s.*; for 3rd Part, £4 8*s.*; for legalisation of diploma, 8*s.*—total, £22. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. Unsuccessful candidates are allowed to come up again three months after rejection on payment of examination fees only, provided this second appearance be in the course of the same academical year (Oct. 1st to June 30th), otherwise they must renew the payment of the matriculation fee of £8 12*s.* The examination consists of three parts, viz.—1st Part: General Medicine; Materia Medica and Pharmacology; General Surgery; and Theory of Midwifery. 2nd Part: General Therapeutics; Pathology and Morbid Anatomy, with use of the microscope; Special Therapeutics and Medicine of Internal Diseases, including Mental Diseases; and Special Surgery. 3rd Part: Public and Private Hygiene; Medical Jurisprudence; Clinical Medicine; Clinical Surgery; examination in Operative Surgery, consisting of some of the usual

[3] No returns.

[4] No returns.

operations on the dead subject—viz., Amputation, Ligature of an Artery, &c.; Ophthalmology; examination in Midwifery, consisting in obstetrical operation on the mannikin (model of pelvis); and examination in Regional Anatomy with Dissection. The time required for the three examinations seldom exceeds ten days, and is usually less. Candidates have the option of passing each part separately, or of taking the three together, and the latter is the usual course; also of demanding a written examination on payment of an additional fee of one guinea for each part, a rule of which candidates rarely or never avail themselves. The examinations, which are *viva voce*, begin on the first Tuesday in November, December, March, May, and middle June. Candidates should appear with their medical registration certificate or their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. Most of the examiners speak English, and those who do not examine through the medium of an interpreter. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. There are in England at present over 600 graduates holding this degree, and a British Association of Brussels Medical Graduates has been in existence for many years. Applications should be made to the Secrétariat, 14, Rue des Sols, Bruxelles.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE conditions of service in the medical departments of the Army and Indian Army remain, with certain modifications, the same as for 1910, but the conditions of medical service in the Royal Navy have been modified with the intention of making the Service compare more favourably with the sister Services, as well as with the circumstances under which much civilian practice is carried on.

A new Order in Council was made on August 8th, 1911, based, it is understood, on the report of Sir John Durnford's Committee, appointed two years ago. This Order appeared on Friday, August 18th, and will, we fear, be a disappointment to all but the senior officers of the Service. The old ranks of inspector and deputy inspector-general become surgeon and deputy surgeon-general, as they used to be in the army. Pay is increased by 1*s.* daily every alternate year till 28 years' service, when it is £1 15*s.* a day, and for fleet-surgeons does not rise any higher. Deputy Surgeons-General get a rise of 3*s.* daily. Senior medical officers of battleships and cruisers with complements of 650 and upwards get 3*s.* 6*d.* daily charge pay, which is very right and has often been asked for. The fleet-surgeon at Shotley is given 5*s.* charge pay, and staff-surgeons there may get 2*s.* 6*d.* The surgeon who after entry desires to take up a post of house surgeon may perhaps be allowed to do so, but he cannot count that time for promotion. The surgeon who passes the staff surgeon's examination at his first attempt may secure 18 months' earlier promotion by getting a special certificate (or 12 months' if he only attains a first class), provided the Admiralty thinks him deserving and the director-general does not reduce the period. A surgeon who has passed this examination before eight years may, as at present, retire with a gratuity of £1000 if he so choose; but if he has not passed at eight years he will be compulsorily retired on any gratuity the Admiralty thinks right, not exceeding £500. We doubt whether the added inducements are likely to complete the 10 per cent. shortage in the department, but, on the other hand, the service is in many respects so good a one, and the disabilities of civilian practice are just now so much in evidence, that this surmise may be unduly pessimistic.

We would strongly urge on the authorities the advisability of removing legitimate grievances *now;* the reforms could for the most part be effected at the expense of little but tact and a consideration of what is justly due to the naval medical officers. Every naval medical officer who has written to our columns, and this is not a small number, has expressed dissatisfaction with the position in which the cabin question has been left by recent regulations. Allotment to the medical officer of cabin accommodation inferior to that to which he is entitled still takes place, and cannot, at any rate cannot always, be explained by the cramped space on that elaborate box of tricks, a modern man-of-war. Another innovation sadly wanted is a regulation to ensure that the senior medical officers in hospitals should have proper disciplinary power over their subordinates and patients. Other points, such as the supply and use of boats, for example, might well be settled in accordance with the just desires of the Naval Medical Service, for the Admiralty will be prudent to aim at making the Service more popular. And the same may be said of all three services. For that there is now no competition for commissions in the Naval Medical Service and no keen competition for those in the Army Medical Corps or the Indian Medical Service seems undeniable, and this is the more unfortunate a position since fewer men are now entering the medical profession as a whole. It is no longer easy for all hospitals to obtain suitable residents, while assistants are scarce and even junior partners are not to be found directly they are wanted. The Services will therefore have to be careful to increase their popularity, and the point is that it may be economical of them to do so now. By small concessions they may be avoiding having later to pay a heavy price to attract men. We would also suggest that it is unwise to let any of these departments run below the normal strength if it is possible to maintain them at par.

Though reform may be wanted in the Naval Medical Service, its present state is not without material advantages. At one time not so very long ago the Naval Medical Service was not looked upon as one in which an educated gentleman could serve with dignity, while complaints were heard of many of the conditions of service. But the old order of things is giving place to the new, and a comparison of the lot of the naval medical officer with that of the civil practitioner will show that the trials of the civil branch of the profession are greater than those of the naval branch, and probably when all things are considered the naval surgeon is in a far better position than the average lay professional man. In the junior ranks of the Service the pay is better than the average income of the lay medical man of the same age, and promotion is not always slow. With £20 a month the young naval surgeon can, if he is not extravagant, get along very comfortably, though he will require at the commencement of his career £50 or £60 for outfit. A private income is certainly not necessary. After 20 years of service a naval surgeon is entitled to a pension of £365 a year, which compares very favourably with the prospects of many medical men on the civil side of the profession, and in case of illness there is the half-pay rate, while pensions are provided for widows and children. In this way the young naval officer is relieved of the most serious anxiety which can press upon a married man, but he ought not to marry young without due consideration, a warning which, however, applies to most medical men. With regard to the Medical Services of the Army and Indian Army, a comparison with that of the Navy shows that though the Army and Indian Service are better paid, promotion in the case of the army has been rendered less certain; in both services expenses are higher and the work more fatiguing, while in the Indian Service there is a greater liability to disease and death. The young surgeon, too, on board his vessel probably gets a better chance in the Navy than in the Army. So long as the new surgeon is adequately good at his profession, is kind and unselfish towards his patients is not too self-assertive, and has any positive accomplishments or skill at any sport or game, he should get on very well, especially if he is good-humoured and helpful. And if a man has not these qualities and readiness where should he be advised to practise?

The conditions of entry into the Royal Naval Medical Service were altered quite recently. Formerly, candidates on passing the examination in London at once received their commissions as surgeons in the Royal Navy. They are now merely appointed acting surgeons. Then, after courses of instruction, they will be again

examined, and if they pass this examination also will be duly commissioned. Their seniority—that is, their place on the list throughout their service—will depend on the marks they get in both examinations. The standard of marking is not disclosed, and proficiency in the second examination in subjects which have been studied only through perhaps three or six months may avail as much in fixing their places as success in the first examination, which is the outcome of the industry and training of at least five years. This point should be cleared up by the Admiralty, as the uncertainty will operate to discourage application from the best candidate, the most highly educated, those most desired by the service, who will be rather shy to trust their hard-won pre-eminence to so doubtful a fortune. An extra 10 per cent. for the second examination would give plenty of inducement to the acting surgeons to be attentive to the important instruction in tropical diseases and naval hygiene they receive at Haslar. The relative proportions should be mentioned if the best candidates are not to be frightened away. The entrance examination is also altered. Voluntary subjects and hygiene are done away. The examination will deal with medicine and surgery only. In each subject there is a written, a clinical, and an oral examination, and 400 marks are given for each of the six examinations. This scheme gives a material advantage in the competition to less broadly educated candidates. Confidential reports as to the character of a candidate are now to be obtained from the dean of his medical school. Certain additional marks are given to candidates who possess certificates from the Officers' Training Corps. Nominated candidates, except those nominated by colonial universities, are no longer allowed.

ROYAL NAVY MEDICAL SERVICE.

REGULATIONS FOR THE ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commencement of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth.

He must be registered under the Medical Act in force, as qualified to practise medicine and surgery in Great Britain and Ireland.

He must declare (1) his age and date and place of birth; (2) that he is of pure European descent and the son either of natural-born British subjects or of parents naturalised in the United Kingdom; (3) that he labours under no mental or constitutional disease or weakness, nor any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; (4) that he is ready to engage for general service at home or abroad, as required; (5) whether he holds, or has held, any commission or appointment in the public services; (6) that he is registered under the Medical Act, giving the date of his registration as a medical student, or of his beginning professional study [1]; and (7) whether he has previously been examined for entry in the Naval Service, and, if so, when.

The certificates of registration and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed to the Director-General, Medical Department, Admiralty, London, S.W., to permit of reference to the candidates medical school. The Dean or other responsible authority of such school will be requested by the Medical Director-General to render a confidential report as to the candidate's character, conduct, professional ability, and fitness to hold a commission in the Royal Navy. The candidate will then be interviewed by the Medical Director-General, and his physical fitness will be determined by a board of Naval Medical Officers. The Medical Director-General will then decide whether he may be allowed to compete. If accepted, the candidate will be eligible to present himself at the entrance examination, which will be held twice a year. Notification of the exact date of this, as well as the number of commissions to be competed for, will be advertised in THE LANCET. Candidates will be examined in the following subjects: (*a*) Medicine, including Medical Pathology and Therapeutics; and (*b*) Surgery, including Surgical Pathology and Clinical Surgery. The examination will be partly written and partly practical, marks being allotted under the following scheme:—

Medicine.		*Surgery.*	
Paper	400	Paper	400
Clinical...	400	Clinical...	400
Oral	400	Oral	400
Total	1200	Total	1200

No candidate will be considered eligible who obtains less than 50 per cent. of marks in each subject. The examination will be held in London and will occupy four days.

The appointments announced for competition will be filled from the list of qualified candidates, arranged in order of merit; but should it at any time be considered expedient to grant Commissions beyond those periodically competed for, the Admiralty have power to admit annually not more than six candidates, according to requirements, specially recommended by the governing bodies of such colonial universities as may be selected and whose qualifications are recognised by the General Medical Council. Candidates so proposed are to be approved by the Director-General of the Medical Department of the Navy. Colonial candidates will have to pass a physical examination before a board of Naval Medical Officers in the colony, and will be required to register their qualifications on arrival in England. They will be allowed, if they wish it, to compete at the next examination for entrance and take their position according to the order of merit; should they decide not to compete they will be placed at the bottom of the list. A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

Candidates who have served in the Officers' Training Corps, and who are in possession of the certificates laid down in the regulations for that Corps, will be credited at the entrance examination with additional marks as follows: Candidates in possession of Certificate A will receive 1 per cent., and those who possess Certificates A and B, 2 per cent. of the maximum number of marks allotted.

A candidate will not be allowed to compete at more than two examinations.

A candidate successful at the entrance examination will be appointed as acting surgeon in the Royal Navy and will be required to pass through such courses of instruction as the Admiralty may decide. At the end of the courses the acting surgeon will be examined and after he has passed will be given a commission as surgeon in the Royal Navy. The commission will date from the day of passing the entrance examination. The number of marks gained at this examination, together with those gained at the entrance examination, will decide a candidate's place on the list for seniority. An acting surgeon who fails to qualify in the above examination will be allowed a second trial at the next examination, the period between the two examinations not being counted as service for either promotion, withdrawal with gratuity, or retirement after 20 years' service, and should he qualify he will be placed at the bottom of his list; should he again fail his appointment will not be confirmed and he will be required to withdraw.

A gold medal, a silver medal, and three navy regulation pocket cases will be awarded as prizes in connexion with these examinations, and the gold medallist will have a distinguishing mark after his name in the Navy List.

Surgeons on entry are only required to provide themselves with a regulation pocket case of instruments.

Promotion.

An Inspector-General of Hospitals and Fleets will be selected from amongst Deputy Inspectors-General who have in that rank three years' full pay service and who have not at any time declined foreign service except for reasons which the Lords Commissioners of the Admiralty regard as good and sufficient.

A Deputy Inspector-General of Hospitals and Fleets will be selected for ability and merit from amongst Fleet Surgeons, but must have served in a ship of war at sea for two years as a Fleet Surgeon, or for five years as Fleet and Staff Surgeon combined.

(*a*) Subject to the approval of the Lords Commissioners of the Admiralty rank as Fleet Surgeon will be granted to Staff Surgeons at the expiration of eight years from the date of promotion to Staff Surgeon, provided they are recommended by the Medical Director-General, have served in a ship of war at sea for three years, and have not declined service except for reasons which in the opinion of the Lords Commissioners of the Admiralty are satisfactory. (*b*) Special promotions from the rank of Staff Surgeon to that of Fleet Surgeon will be made at their Lordships' discretion in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and will not exceed the rate of one in two years; the total number at any one time of Fleet Surgeons holding that rank by such special promotions will not exceed six.

(*a*) Rank as Staff Surgeon will be granted, subject to their Lordships' approval, to surgeons at the expiration of eight years from the date of entry, provided they are recommended by the Medical Director-General, have served in a ship of war for three years, and have passed such examination as may be required after completion of five years from the date of entry in the rank of surgeon. (*b*) Special promotions will be made at their Lordships' discretion to the rank of Staff Surgeon in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and not exceed the rate of one a year. The total number at any one time of Staff Surgeons holding that rank by such special promotions will not exceed eight. No officer will be so promoted unless he passes the examination prescribed for other surgeons, but in such a case the requirement of five years' time in rank of surgeon will be dispensed with. (*c*) When a surgeon's promotion to the rank of Staff Surgeon has been retarded by failure to pass the qualifying examination he will, should he pass and be promoted, be dealt with as follows. He will be granted the seniority as Staff Surgeon he would have received had he passed in ordinary course. He will reckon service for increase of full and half pay only from the date of appointment to full pay as Staff Surgeon. If on half pay, or if placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination. Where delay in passing the qualifying examination may be due to unavoidable circumstances special consideration will be given. (*d*) The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of the Haslar course and their names will then be placed in the official navy list, except in the case of candidates who hold, or are about to hold, a post as resident medical officer or surgical officer to a recognised civil hospital. These candidates will retain the position in the list which they obtained on entry, and when their period of service as resident officer is over they will join the next Haslar course and will be required to obtain qualifying marks. Surgeons entered without competition will take seniority next after the last surgeon entered at the same time by competition. (*e*) The examination for promotion to the rank of staff surgeon will be held by the Examining Board, to which a naval medical officer will be attached to conduct the examination in naval hygiene. The subjects of examination will be in writing and will include medicine, surgery, pathology, general hygiene, naval hygiene. (*f*) A candidate who at the time of passing the examination for entry into the medical branch of the Royal Navy holds, or is about to hold, an appointment as resident medical or surgical officer in a recognised civil hospital, will perhaps be allowed to serve in such civil appointment provided that the period of such service after the date of entry into the Royal Navy does not

[1] If any doubt should arise on this question the burden of clear proof that he is qualified will rest upon the candidate himself.

exceed one year. Pay from naval funds will be withheld from officers while thus serving, who will not be promoted earlier to staff surgeon, if they have joined after Jan. 1st, 1910.

A Surgeon who, on attaining eight years' seniority in that rank, has failed to pass the examination for the rank of Staff-Surgeon will be compulsorily retired with such gratuity as the Admiralty may see fit to award, but not exceeding £500. This rule is not, however, to apply in cases where, in the opinion of the Admiralty, failure to qualify is due to unavoidable circumstances, nor to surgeons who entered before July 1st, 1911, and who elect to receive pay at the old rates. Surgeons are to be eligible for accelerated promotion to Staff Surgeon according to the class of certificate obtained in the examination for the rank of Staff Surgeon as follows:—Special certificate, 18 months; first-class certificate, 12 months. The above acceleration of promotion is only to be granted in the case of an officer considered to be deserving of advancement, and the Admiralty will have power to reduce the several periods if considered advisable, on the recommendation of the Director-General of the Medical Department. No surgeon who has failed to pass for staff surgeon will be granted accelerated promotion on the result of any subsequent examination, whatever may be the class of certificate obtained.

No restriction is to be placed upon the number of special promotions which may be made to the ranks of staff and fleet surgeon for gallantry in action.

Full Pay.

Rank.	Daily.	Annual.
	£ s. d.	£ s. d.
Surgeon—		
On entry	0 14 0	255 10 0
After 2 years	0 15 0	273 15 0
,, 4 ,,	0 17 0	310 5 0
,, 6 ,,	0 18 0	328 10 0
Staff Surgeon—		
On promotion	1 0 0	365 0 0
After 2 years	1 1 0	383 5 0
,, 4 ,,	1 4 0	438 0 0
,, 6 ,,	1 5 0	456 5 0
Fleet Surgeon—		
On promotion	1 7 0	492 15 0
After 2 years	1 8 0	511 0 0
,, 4 ,,	1 10 0	547 10 0
,, 6 ,,	1 11 0	565 15 0
,, 8 ,,	1 13 0	602 5 0
,, 10 ,,	1 15 0	638 15 0
Deputy Surgeon-General	2 5 0	821 5 0
Surgeon-General	—	1300 0 0

The medical officers in charge of the following hospitals and sick quarters will be granted charge pay: Haslar, Plymouth, Chatham, Malta, Hong-Kong, Bermuda, Portland, Yarmouth, Haulbowline, Cape, Gibraltar, and Yokohama. The rate of charge pay will be as follows:—

	s. d.	
Inspectors-General	10 0	a day.
Deputy Inspectors-General	7 6	,,
Fleet Surgeons of over 4 years' seniority	5 0	,,
Fleet Surgeons of under 4 years' seniority and Staff Surgeons of over 4 years' seniority	2 6	,,

The hospital allowances for naval medical officers at home and abroad, in lieu of provisions, for themselves and servants, and for fuel and lights, are as follows:—

—	At home.	Abroad.
	£	£
Deputy Inspectors-General	67	112
Fleet Surgeons and Staff Surgeons of over 4 years' seniority	53	112
Staff Surgeons of under 4 years' seniority and Surgeons	39	108*

* Except at Malta, where the allowance will be £70, but servants will be provided at the public expense. These allowances are also granted to medical officers of marine divisions and dockyards.

Charge pay at the Training Establishment at Shotley is to be granted to Fleet and Staff Surgeons in charge of medical duties as follows:—Fleet Surgeons of four years' seniority 5*s.* a day; Fleet Surgeons under four years' seniority, and Staff Surgeons, 2*s.* 6*d.* a day; the Medical Officer in charge of the medical duties of a ship-of-war at sea with a complement of not less than 650 officers and men is to receive charge pay at the rate of 3*s.* 6*d.* a day.

An allowance of 5*s.* a day, in addition to full pay, is granted to the senior medical officer, being a Fleet or Staff Surgeon, of a flag-ship bearing the flag of a Commander-in-Chief. An allowance of 2*s.* 6*d.* a day is granted to the senior medical officer, being a Fleet or Staff Surgeon, of the ship bearing other flags or broad pendants. The following charge allowances may be granted to medical officers in charge of hospital ships: if above the rank of fleet surgeon, 5*s.* a day; and if of the rank of fleet surgeon or junior, 3*s.* 6*d.* a day. The Fleet and Staff Surgeons serving at the Admiralty and the Marine Rendezvous will be granted the Hospital allowance of £53 a year in addition to the usual lodging money. Medical officers conducting the courses of instruction at Haslar Hospital will receive the following allowances: two senior officers employed upon this duty, £150 a year each; the junior officer assisting, £50 a year; and the junior officer instructing the Sick Berth Staff, £50 a year. The junior officer instructing the Sick Berth Staff at Plymouth, £50 a year. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights. The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the service.

Half Pay.

Rank.	Daily.	Yearly.
	£ s. d.	£ s. d.
Surgeon—		
Under 2 years' full-pay service	0 6 0	109 10 0
After 2 years' full-pay service	0 7 0	127 15 0
,, 4 ,, ,,	0 8 0	146 0 0
,, 6 ,, ,,	0 9 0	164 5 0
Staff Surgeon (or Surgeon over eight years)—		
On promotion	0 10 0	182 10 0
After 2 years' service in rank	0 11 0	200 15 0
,, 4 ,, ,,	0 12 0	219 0 0
,, 6 ,, ,,	0 13 0	237 5 0
Fleet Surgeon—		
On promotion	0 14 0	255 10 0
After 2 years' service in rank	0 15 0	273 15 0
,, 4 ,, ,,	0 17 0	310 5 0
,, 6 ,, ,,	0 18 0	328 10 0
,, 8 ,, ,,	0 19 0	346 15 0
,, 10 ,, ,, (maximum)	1 0 0	365 0 0
Deputy Inspector-General—		
On promotion	1 5 0	456 5 0
After 2 years' full-pay service in rank	1 7 0	492 15 0
,, 4 ,, ,,	1 9 0	529 5 0
Inspector-General	1 18 0	693 10 0

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo, also that time on half-pay counts only one-third towards retirement.

Retirement.

Compulsory retirement will be as follows:—

Inspector and Deputy Inspector-General of Hospitals and Fleets.	At the age of 60, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined. Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an Inspector-General of Hospitals and Fleets on the active list, the age for the retirement of such Inspector-General may be extended to 62.	To be retired irrespective of age if found physically unfit for service.
Fleet Surgeon, Staff Surgeon, and Surgeon.	At the age of 55, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined.	

The special attention of candidates is directed to the following rules under which officers are allowed to withdraw from the service after four years' full pay service in the Royal Navy, with the advantage of joining the Reserve of Naval Medical Officers:—

After four years' service in the Royal Navy, an officer, if he wishes, may pass from active service to the Reserve of Naval Medical Officers, when he will reap the following advantages:—

(1) He will be granted a gratuity of £500 on passing into the Reserve.

(2) His name will be retained in the Navy List; he will retain his naval rank and be entitled to wear his naval uniform under the regulations applying to officers on the retired and reserved lists of His Majesty's Navy.

(3) If he agree to remain in the Reserve for four years he will receive a retaining fee of £25 per annum. If at the expiration of this period he agree to remain in the Reserve for a further period of four years he will continue to receive the same retaining fee.

Should an officer prefer it, however, he may simply enter the Reserve for a period not exceeding eight years, with power to give six months' notice of his intention to resign his position at any time (in which case he will receive no retaining fee). He may also adopt this method of Reserve service after the expiration of four years served under the conditions referred to in (3), by renouncing his retaining fee for his last four years' service in the Reserve.

No officer will be allowed to remain in the Reserve for a longer period than eight years.

Officers of the Reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service they will receive the rate of pay—viz., 17*s.* a day and allowances—to which they would have been entitled after four years' service on the active list.

Voluntary retirement and withdrawal will be allowed as follows. (*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after 20 years' full-pay service on the scale of retired pay provided in the table below, or with a gratuity on the scale provided in that table if not eligible for retired pay. (*b*) At the expiration of four, eight, 12, or 16 years' full-pay service every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval Service, receiving a gratuity on the scale laid down in the table below. The name of an officer so withdrawing will be removed from the list of the Navy, with which all connexion will then be severed, except in the case of officers who withdraw after four years who are liable to serve in the Reserve. (*c*) Voluntary retirement and withdrawal at the discretion of their Lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under special circumstances, however, it may be permitted in the case of an officer serving abroad, provided he pays his passage home, and, if necessary, that of his successor. (*d*) Applications from officers to retire or withdraw or resign their commissions will receive every consideration, but no officer will, as a rule, be permitted to resign under three years from the date of entry. In order that arrangements may, as far as possible,

be made for the relief of officers who may wish to withdraw on a gratuity it is desirable that six months' notice of their wish should be forwarded for the consideration of their lordships. The Admiralty reserve to themselves power to remove any officer from the list for misconduct.

Gratuities and retired pay will be awarded on retirement and withdrawal on the undermentioned scale:—

Rank.	Gratuities.	Daily.	Yearly.
Surgeon, Staff Surgeon, and Fleet Surgeon—	£ s. d.	£ s. d.	£ s. d.
After 4 years' full-pay service	500 0 0	—	—
After 8 years' full-pay service (including service allowed by (f))	1000 0 0	—	—
After 12 years' full-pay service (including service allowed by (f))	1500 0 0	—	—
After 16 years' full-pay service (including service allowed by (f))	2250 0 0	—	—
Fleet Surgeon—			
After 20 years' service (including proportion of half-pay time)	—	*1 0 0	365 0 0
After 24 years' service (including proportion of half-pay time)	—	*1 2 6	410 12 6
After 27 years' service (including proportion of half-pay time)	—	*1 5 0	456 5 0
After 30 years' service (including proportion of half-pay time), or on compulsory retirement at the age of 55	—	*1 10 0	547 10 0
Deputy Inspector-General ...	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the commission of Fleet Surgeon.

An officer retired with less than 20 years' service on account of disability, contracted in and attributable to the Service, will receive the half pay of his rank, or, with the consent of their Lordships, a gratuity on the scales given in the above table and in the paragraph following this under (*b*), but such officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above.

An officer retired with less than 20 years' service on account of disability, contracted in but not attributable to the Service, will receive—(*a*) if he has over eight years' full-pay service, either a gratuity on the scale given above or half-pay according as their Lordships think fit; (*b*) if he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service. If the health of a surgeon breaks down before he completes 20 years' service, even if his disability be contracted in the Service or be due to climatic causes, he is liable at once to be placed on the retired list, receiving only a gratuity. This point should be well noted, as the position is a most unjust one.

In circumstances other than those specified in the last two paragraphs, and other than misconduct, neglect of duty, &c., an officer retired with less than 20 years' service will not be allowed half pay or retired pay, but will receive a gratuity on the scale laid down in the table above if he has eight years' full-pay service, and on that provided in the last paragraph (*b*) should his full-pay service not amount to eight years. The power vested in their Lordships of granting reduced rates of half pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit. An officer retiring after 20 years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their Lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension. All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement. This liability does not exist in cases of officers who withdraw from the Naval Service receiving a gratuity after 8, 12, or 16 years' full pay service. Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty.

Widow's Pension.

When an officer retires or withdraws *on a gratuity* his widow and children will have no claim to pension or compassionate allowance. In respect to other officers on the active or retired list, the widow's pension ranges from £50 per annum for a surgeon's widow up to £120 for the widow of an Inspector-General; for each child an allowance is granted ranging from £9 to £20 per annum. Officers serving in the reserve who during re-employment are injured on duty, or lose their lives from causes attributable to the service, come under the same regulations as regards compensation for themselves, or pensions and compassionate allowances for their widows and children, as officers of the same rank on the permanent Active List.

Miscellaneous.

A special cabin will be appropriated to the Fleet or Staff Surgeon or the Surgeon in charge of the medical duties in each ship. Special regulations have been made as regards the mess expenses of medical officers appointed to the several divisions of Royal Marines for limited periods.

Every medical officer will be required to undergo a post-graduate course of three months' duration at a Metropolitan Hospital once in every eight years (should the exigencies of the Service permit), and this as far as possible during his Surgeon's, Staff Surgeon's, and Fleet Surgeon's period of service. While carrying out this course the medical officer will be borne on a ship's books for full pay and will reside at the Royal Naval College, Greenwich. The repayment of travelling expenses to and from his home or port will be governed by the King's Regulations; the fees for each course (not exceeding £25) will be paid by the Admiralty on the production of vouchers at the end of the course. The medical officer will be required to produce separate certificates of efficient attendance in the following: (1) the medical and surgical practice of the hospital, including instruction in anæsthetics; (2) a course of operative surgery on the dead body; (3) a course of bacteriology; (4) a course of ophthalmic surgery, particular attention being paid to the diagnosis of errors of refraction; and (5) a practical course of skiagraphy.

Relative rank is accorded to medical officers as laid down in the King's Regulations and Admiralty Instructions.

We recognise that the Admiralty has made a considerable effort to render the Medical Service attractive to men of a good professional stamp. By the regulations promulgated in 1903 promotion was accelerated, special promotion in the lower grades was made possible in cases of distinguished service or conspicuous professional merit, and encouragement to enter the service, in the shape of earlier promotion, was given to men who have held resident posts in recognised hospitals. A feature of the regulations is the permission to withdraw at the end of four years with a gratuity of £500. The new Order in Council, founded, it is presumed, on the recommendations of Sir John Durnford's Committee, grants a small increase of pay to medical officers all round, and senior medical officers are put in a materially better position if they are serving in large battle-ships or cruisers. Deputy-Surgeon-Generals get the 3*s.* daily that they did not get when pay was last re-adjusted. The rewards now offered to those who pass the examination for Staff Surgeon and the severe penalties held before those who fail should ensure the medical officers of eight years' service being men of ability and industry. But we regret that there is no mention of specialist pay which can be got by young officers of energy in the Army and Indian Service, nor is there any acceleration of promotion for scientific work.

If pay has been increased, in respect of allowances, the medical officers of the navy, up to the senior ranks, are not as well off as those of the Royal Army Medical Corps. There will also be discontent until the medical officers are unhampered in the performance of their important work by the executive officers. The medical officers should have control over the sick bay staff in ships, and over nurses and other attendants in hospitals, and executive officers should no longer figure as presidents of "medical surveys." The authority of the Director-General must be made adequate. More care must also be taken that medical officers are assigned fitting cabin accommodation. To make the service thoroughly efficient the medical officers must be given authority and position commensurate with their responsibilities, as has been done in the case of the Engineer department.

ARMY MEDICAL SERVICE.

During recent years the medical service of the Army has passed through many stages of evolution, and we consider that in all essential matters the changes have been distinctly in the direction of advance and improvement, not only for the officers composing this service, but in relation to the Army at large. The formation of the Royal Army Medical Corps by the Royal Warrant of 1898, when Lord Lansdowne was War Minister, marked the first great step; then came a period of strain during the war in South Africa, when the medical services were exposed to fierce criticism. The outcome of this was the appointment of a committee of inquiry in 1901 by Mr. Brodrick (now Lord Midleton), over which he himself presided. A Royal Warrant embodying the recommendations of Mr. Brodrick's committee was issued in 1902, which regulates the existing conditions of service; in 1907 free passages to India were granted for the wives and families of medical officers, whether employed on duty or not, an important concession, and one evidencing the liberal spirit of the War Office towards the medical service.

Since 1907 several important changes have been made from time to time. Prior to this date promotion from the rank of Major to Lieutenant-Colonel was made by seniority after the passing of an examination on attaining 20 years' service, the establishment of Lieutenant-Colonels being unlimited. Under a new clause introduced in the Royal Warrant the establishment of Lieutenant-Colonels was made a fixed number and limited to 120. Under present rules no promotion to the rank of Lieutenant-Colonel can take place unless three conditions are fulfilled—(1) there is a vacancy on the fixed establishment; (2) the officer has passed an examination for promotion; (3) he is selected as suitable for promotion. In the Colonels grade another

important and far-reaching change has been made since Jan. 9th, 1907. An officer promoted to the rank of Colonel after this date will, on completing four years' service in the rank, be placed on half-pay unless further promoted or retired from the service. Officers of the substantive rank of Colonel were also removed from the Royal Army Medical Corps, and have been since shown in the Army List as belonging to the Army Medical Service; they have also a distinctive uniform.

REGULATIONS FOR ADMISSION TO THE ROYAL ARMY MEDICAL CORPS
(ISSUED WITH ARMY ORDERS DATED JUNE 1ST, 1909).

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination, and must be unmarried. He must, at the time of his appointment, be registered under the Medical Acts in force in the United Kingdom. A candidate must complete the subjoined form of application and declaration and submit it to the Director-General, A.M.S., in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

APPLICATION OF A CANDIDATE FOR A COMMISSION IN THE ROYAL ARMY MEDICAL CORPS.*

(*A Candidate will not be permitted to compete oftener than twice.*)

1. Name in full.
2. Address.
3. Date of birth.†
4. Nature and date of examination qualifying for registration.
5. Date of registration as a medical student.
6. Dates of passing medical examinations—First, Second, Final.
7. Qualifications. (Medical Registration Certificate, or, if not registered, Diplomas to be furnished.)
8. Academic and other distinctions.
9. Medical school or schools in which the candidate pursued his course as a medical student, and name or names of the deans or other responsible authorities.
10. Particulars of any commission or appointment held in the public services, including service in the officers training corps.
11. Date of examination at which the candidate proposes to present himself.

Declaration.

(N.B.—A mis-statement by the candidate will invalidate any subsequent appointment and cause forfeiture of all privileges for services rendered.)

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief and further:—

1. That I am a British subject of unmixed European blood.
2. That I am not, as far as I know, at present suffering from any mental or bodily infirmity, or physical imperfection or disability that is likely to preclude me from efficiently discharging the duties of an officer in any climate.
3. That I will fully reveal to the Medical Board, when physically examined, all circumstances within my knowledge that concern my health.
4. I also declare that my vision is good with either eye (with or without the aid of glasses as the case may be).

Signature .....
Date.....

* All communications to be addressed to the Secretary, War Office, Whitehall, S.W.

† A certificate of registration of birth to be furnished.

(N.B.—It is of great importance that the names given in the birth certificate should be correctly given on this form, and it is to be clearly understood that when they differ the names and date of birth given in the birth or baptismal certificate will be accepted for official record.)

The dean, or other responsible authority, of the candidate's school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the corps. A candidate whose application is regarded as satisfactory will be directed to appear before the Director-General, Army Medical Service, a few days preceding the examination. The Director-General will decide if the candidate may be allowed to compete for a commission. If approved, he will then be examined as to his physical fitness by a board of medical officers detailed by the Director-General a few days preceding his examination. The following is the order of the examinations:—

1. A candidate for a commission in the Royal Army Medical Corps must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of military duty.

2. The attention of the board will be directed to the following points: (*a*) That the correlation of age, height, weight, and chest girth is not less than that which is given in the following table:—

Physical Equivalents.

Age.	Height without shoes.	Chest.	
		Girth when expanded.	Range of expansion.
	Inches.		
21 and upwards.	62½ and under 65	35 inches.	2 inches.
	65 ,, 68	35½ ,,	2 ,,
	68 ,, 70	36 ,,	2 ,,
	70 ,, 72	36½ ,,	2½ ,,
	72 and upwards.	37 ,,	2½ ,,

(*b*) Measurement of height. The candidate will be placed against the standard with his feet together and the weight thrown on the heels and not on the toes or outside of the feet. He will stand erect without rigidity and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar and the height will be noted in parts of an inch to eighths.

(*c*) Measurement of chest. The candidate will be made to stand erect with his feet together and to raise his hands above his head. The tape will be carefully adjusted round the chest with its posterior upper edge touching the inferior angles of the shoulder blades and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The maximum expansion during deep inspiration will be carefully noted.

(*d*) Weight. The candidate will also be weighed and his weight recorded in the proceedings of the Board.

(*e*) The regulations regarding the examination of eyesight are as follows:—

Squint, or any morbid condition of the eyes or of the lids of either eye liable to the risk of aggravation or recurrence, will cause the rejection of the candidate.

The examination for determining the acuteness of vision includes two tests: one for distant, the other for near vision. The Army Test Types will be used for the test for distant vision, without glasses, except where otherwise stated below, at a distance of 20 feet; and Snellen's Optotypi for the test for near vision, without glasses, at any distance selected by the candidate. Each eye will be examined separately, and the lids must be kept wide open during the test. The candidate must be able to read the tests without hesitation in ordinary daylight.

A candidate possessing acuteness of vision, according to one of the standards herein laid down, will not be rejected on account of an error of refraction, provided that the error of refraction, in the following cases, does not exceed the limits mentioned, viz.: (*a*) in the case of *myopia*, that the error of refraction does not exceed 2·5 D; (*b*) that any correction for *astigmatism* does not exceed 2·5 D; and, in the case of myopic astigmatism, that the total error of refraction does not exceed 2·5 D.

Subject to the foregoing conditions, the standards of the minimum acuteness of vision with which a candidate will be accepted are as follows:—

Standard I.

Right eye.	*Left eye.*
Distant vision.—V = 6/6.	V = 6/6.
Near vision.—Reads 0, 6.	Reads 0, 6.

Standard II.

Better eye.	*Worse eye.*
Distant vision.—V = 6/6.	V, without glasses, = not below 6/60; and, after correction with glasses, = not below 6/24.
Near vision.—Reads 0, 6.	Reads 1.

Standard III.

Better eye.	*Worse eye.*
Distant vision. — V, without glasses, = not below 6/24; and, after correction with glasses, = not below 6/6.	V, without glasses, = not below 6/24; and, after correction with glasses, = not below 6/12.
Near vision.—Reads 0, 8.	Reads 1.

In Standard III., the standard for the test for distant vision, without glasses, for officers of the Special Reserve, will be not below 6/36.

Inability to distinguish the principal colours will not be regarded as a cause for rejection, but the fact will be noted in the report, and the candidate will be informed. The degree of acuteness of vision of all candidates for commissions (including preliminary examinations) will be entered in their reports in the following manner:—

Sufficient	Right eye...	V = ...	Reads .....
	Left eye ...	V = ...	Reads .....
Defective	Right eye...	V = ...	Reads .....
	Left eye ...	V = ...	Reads .....

No relaxation of the standard of vision will ever be allowed.

The following additional points will then be observed. (*f*) That his hearing is good. (*g*) That his speech is without impediment. (*h*) That his teeth are in good order. Loss or decay of ten teeth will be considered a disqualification. Decayed teeth if well filled will be considered as sound. Non-erupted wisdom teeth will not be counted as deficient. (*i*) That his chest is well formed and that his heart and lungs are sound. (*j*) That he is not ruptured. (*k*) That he does not suffer from varicocele or varicose veins in a severe degree. A candidate who has been successfully operated on will be accepted. A definition of severe varicocele may be obtained from the Director-General Army Medical Service, War Office, Whitehall, S.W. (*l*) That his limbs are well formed and developed. (*m*) That there is free and perfect motion of all the joints. (*n*) That his feet and toes are well formed. (*o*) That he does not suffer from any inveterate skin disease. (*p*) That he has no congenital malformation or defect. (*q*) That he does not bear traces of previous acute or chronic disease pointing to an impaired constitution. (*r*) If the candidate is not of pure European descent the fact should be recorded by the board. If a candidate be pronounced physically fit for service at home and abroad he will be eligible to present himself at the next entrance examination which will be held twice in the year, usually in January and July. A candidate will not be permitted to compete oftener than twice.

The Army Council reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required from each candidate admitted to the examination.

Candidates who have been specially employed in consequence of a national emergency, either as an officer or in a position usually filled by an officer, will be allowed to reckon such service towards retired pay and gratuity, and if over the regulated limit of age at the date of commencement of the competitive examination will be permitted to deduct from their actual age any period of that service if such reduction will bring them within the age limit. The duration of service is to be reckoned from the date on which the candidate commenced such service, except in the case of candidates who have served

for two or more periods at short intervals. In such cases the total period of service to be considered in granting marks at the entrance examination will be specially determined.

Candidates who have served in the Officers Training Corps, and who are in possession of the certificates laid down in regulations, will be credited at the entrance examination with additional marks as follows: those having Certificate A will receive 1 per cent., and those having A and B 2 per cent. of the maximum marks allotted.

A candidate successful at the entrance examination will be appointed a Lieutenant on probation and will be required to pass through such courses of instruction as the Army Council may decide and, after passing the examinations in the subjects taught and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as Lieutenant will be confirmed. The commission will bear the date of passing the entrance examination.

The precedence of Lieutenants among each other will be in order of merit as determined by the combined results of the entrance examination and the examinations undergone while on probation, except that the position on the list of a lieutenant on probation, seconded to hold a resident appointment in a recognised civil hospital shall be determined by the place he has gained at the entrance examination. A lieutenant cannot be so seconded for more than 12 months, and during this period he will not draw pay from Army funds, but his service will reckon towards promotion, increase of pay, gratuity, and pension. He will be required, at the conclusion of his hospital appointment, to attend the courses of instruction at the Royal Army Medical College and at Aldershot; but the subsequent examinations will be of a qualifying character and will not influence his position on the seniority list of the Corps.

Lieutenants when appointed on probation will receive instructions as to the provision of uniform.

EXAMINATIONS.

Subjects for the Entrance Examination.

Candidates will be examined by the examining board in medicine and surgery. The examination will be of a clinical and practical character, partly written and partly oral, marks being allotted under the following scheme.

	Maximum marks.
Medicine (written).	
A. Examination and report upon a medical case	125
B. Commentary upon a case in medicine	100
(Two periods of 45 minutes-total, one and a half hours—for A, and one and a half hours for B.)	
Medicine (oral).	
A. Clinical cases	100
B. Medical pathology	75
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A; 30 minutes to examine specimens and ten minutes *viva voce* —total, 40 minutes—for B.)	
Surgery (written).	
A. Examination and report upon a surgical case	100
B. Commentary upon a case in surgery	125
(Two periods of 45 minutes—total, one and a half hours—for A, and one and a half hours for B.)	
Surgery (oral).	
A. Clinical surgery and pathology (including diseases of the eye)	75
B. Operative surgery and bandaging (including surgical instruments and appliances)	100
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A, and about 30 minutes for B.)	
Total marks	800

The following headings are published as a guide to candidates in drawing up their reports on cases:—(*a*) A brief history of the case as given by the patient, including such points only (if any) in the family or personal history as have a distinct bearing upon the present illness or incapacity. (*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case. (*c*) Where there is any reasonable doubt in the mind of the candidate as to an exact diagnosis, he is to give the alternatives, with his reasons for making the selection. (*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical, and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

Similarly the commentary on the report of a case submitted to the candidate should discuss: (*a*) The family and personal history and other conditions preceding the development of the condition described. (*b*) The relative significance of the physical signs, symptoms, other indications of disease noted, and the general clinical aspects of the case. (*c*) The diagnosis, with reasons for selection of the most probable, when a positive diagnosis cannot be attained. (*d*) The treatment, dietetic, medicinal, operative, &c., including a criticism of the plan adopted, and alternative schemes of treatment in case of disagreement. (*e*) The morbid appearances and an account of the post-mortem examination (if any).

The examinations are held in London and occupy about four days.

The appointments announced for the competition are filled up from the list of qualified candidates arranged in the order of merit, as determined by the total number of marks each has obtained. Having gained a place in this entrance examination the successful candidates are ordered to proceed to the Royal Army Medical College, Millbank, S.W., for instruction in recruiting duties, at the termination of which they will undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical Administration, after which they are examined in these subjects. The maximum number of marks obtainable at this examination is 700. At the present time the professors at the Royal Army Medical College are Major E. M. Pilcher, D.S.O., F.R.C.S., in the department of military surgery; Major W. S. Harrison, M.B., in the department of tropical medicine; Lieutenant-Colonel Sir W. B. Leishman, M.B., F.R.S., in the department of pathology; and Lieutenant-Colonel C. H. Melville, M.B., in that of hygiene, Captain J. C. Kennedy and Major C. F. Wanhill being assistant professors. Colonel Erskine Risk, the commandant and director of studies, assisted by Brevet Lieutenant-Colonel A. P. Blenkinsop, instruct in hospital and corps administration, in the duties of officers on transports, and in the examination of recruits, and Major T. W. Gibbard lectures on Syphilology. The services of the following staff of clinical teachers have been secured to give courses of instruction to the classes made up of 50 captains that now undergo an annual course for promotion to the rank of major:—Medicine: Major G. N. Pitt, M.D., 2nd London General Hospital; and Captain J. Galloway, M.D., F.R.C.S., 4th London General Hospital. Surgery: W. H. Clayton-Greene, M.B., F.R.C.S.; and Captain H. S. Collier, F.R.C.S., 3rd London General Hospital. Dermatology: A. Whitfield, M.D. Midwifery and Gynæcology: G. F. Blacker, M.D., F.R.C.S. Ophthalmology: J. H. Parsons, M.B., F.R.C.S. Otology with Laryngology and Rhinology: H. Tilley, M.D., F.R.C.S. Specific Fevers: E. W. Goodall, M.D. Besides these lecturers an honorary consulting staff has been appointed by the War Office to Queen Alexandra's Military Hospital at Millbank. This staff comprises:—A. E. Barker, F.R.C.S.; Major Sir A. A. Bowlby, C.M.G., F.R.C.S., 1st London General Hospital; Surgeon-Major-General A. F. Bradshaw, C.B., K.H.P. (retired); J. M. Bruce, M.D., F.R.C.P.; Lieutenant-Colonel Sir J. K. Fowler, K.C.V.O., M.D., 3rd London General Hospital; Surgeon-Lieutenant-Colonel P. J. Freyer, M.D. Indian Medical Service (retired); W. S. A. Griffiths, M.D., F.R.C.P.; Lieutenant-Colonel G. H. Makins, C.B., F.R.C.S., 2nd London General Hospital; and Honorary Colonel Sir W. Osler, Bart, M.D., LL.D., F.R.S, South Middlesex Division, Royal Army Medical Corps. The course of hygiene has hitherto comprised the examinations of water and air, the general principles of diet with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease, both at home and under the conditions of foreign service, also with particular reference to active service in the field. The pathological course has up to the present time included bacteriology and demonstrations in microscopic diagnosis, preparations of vaccines, &c., special attention being given to modern methods of research in the causation of tropical disease. The surgical course consists of lectures and demonstrations in military surgery and X rays and lectures on errors of refraction from a military point of view. On completion of the above course Lieutenants on probation join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps, including a course of gymnasium, drill, and stretcher drill, and at the end of the course are examined in the subjects taught. The maximum number of marks obtainable at this examination will be 100. A Lieutenant on probation who fails to qualify in either of these examinations will be allowed a second trial, and, should he qualify, will be placed at the bottom of the list. Should he again fail in either examination his commission will not be confirmed. Illiteracy on the part of a candidate as evinced by inaccurate spelling, poor composition, or grammatical errors in the oral examination, at the entrance examination, or at the examinations undergone while on probation will be regarded as disqualifying for appointment.

EXAMINATIONS FOR PROMOTION IN THE ROYAL ARMY MEDICAL CORPS.

These examinations are intended to test the progress and proficiency of officers in those branches of knowledge which are essential to their continued efficiency.

Lieutenant before Promotion to Captain.—This examination may be taken at any time after completing 18 months' service and will be held in the military district in which the officer is serving. The subjects of this examination, which are detailed in the King's Regulations, are as follows: (1) squad, company, and corps drills and exercises; (2) (*a*) the terms of the Geneva Convention; (*b*) a general knowledge of the administration, organisation, and equipment of the

army in its relation to the Medical Services; (3) the duties of ward-masters and stewards in military hospitals, and the preparation of returns, accounts, and requisitions connected therewith; (4) duties of executive medical officers; and (5) military law.

Captains before Promotion to Major.—Captains will be examined under the following rules, and will be eligible for acceleration in their promotion to the rank of Major under Article 303 of the Pay Warrant. An officer who gains accelerated promotion will be placed for precedence after the last officer (whether subject to acceleration or not) promoted approximately 3, 6, 12, or 18 months before him.

This examination, which may be taken at any time after completing five years' service, will be held on the termination of a period of special study at such times and under such arrangements as the Director-General A.M.S. may determine. The examination will consist of written papers, essays, oral and practical examinations in the following subjects, which are detailed in the King's Regulations: (1) medicine; (2) surgery; (3) hygiene; (4) bacteriology and tropical disease; (5) one special subject from the subjoined list: (*a*) bacteriology, including the preparation of antitoxins; (*b*) dermatology, including venereal diseases; (*c*) midwifery and gynæcology; (*d*) operative surgery, advanced; (*e*) ophthalmology; (*f*) otology, including laryngology and rhinology; (*g*) State medicine; (6) military law.

Majors before Promotion to Lieutenant-Colonel.—This examination, which may be taken at any time after three years in the rank of Major, will be held in the military district in which the officer is serving at times which will be duly notified. The subjects of this examination, which are detailed in the King's Regulations, are as follows: 1. Army medical organisation in peace and war. 2. Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace and war; epidemiology, and the management of epidemics. 3. (*a*) Medical history of the more important campaigns and the lessons to be learnt therefrom; (*b*) a knowledge of the Army Medical Services of the more important Powers; and (*c*) the laws and customs of war, so far as they relate to the sick and wounded. 4. A tactical problem in field medical administration.

PAY, ADDITIONAL PAY, AND CHARGE PAY.

The following are the rates of pay, additional pay, and charge pay of the Army Medical Service and Royal Army Medical Corps:—

Pay.

Army Medical Service.	Inclusive of all allowances except field and travelling allowances (yearly).
At the War Office.	£
Director-General	2000
Deputy Director-General	1500
Assistant Director-General	850
Deputy Assistant Director-General	750
	Exclusive of allowances (daily).
At Other Stations.	£ s. d.
Surgeon-General	3 0 0
Colonel	2 5 0
Lieutenant-Colonel (promoted before Jan. 9th, 1907)	1 10 0
Lieutenant-Colonel (specially selected)	1 15 0
Major	1 3 6
After three years as such	1 6 0
After 20 years' total service, if considered qualified	1 10 0
Captain	0 15 6
After seven years' total full-pay service	0 17 0
After ten years' total full pay service	1 1 0
Lieutenant on probation and Lieutenant	0 14 0
Adjutant of the Royal Army Medical Corps (Territorial Force)	The pay of his rank.

A Captain of the Royal Army Medical Corps, holding the brevet rank of Major, shall receive pay at 2*s.* a day, in addition to the pay of his rank.

Additional Pay.

An officer not serving on the Headquarters Staff appointed a member of the Advisory Board, £150 a year. An officer under the rank of Lieutenant-Colonel holding an appointment as specialist, 2*s.* 6*d.* daily.

Charge Pay.

(*a*) An officer in charge of a general or other hospital, or of a division of a general hospital—

	Daily. s. d.
If in charge of at least 50 equipped beds	2 6
,, ,, 100 ,, ,,	5 0
,, ,, 200 ,, ,,	7 6
,, ,, 300 ,, ,,	10 0
(*b*) Senior medical officer, Royal Arsenal, not exceeding	10 0
(*c*) Officer in command of the Depôt, Royal Army Medical Corps	5 0
(*d*) The Senior officer of the Army Medical Service with an army in the field— A rate to be fixed according to the magnitude of the charge.	
(*e*) In a command abroad— The senior medical officer, if under the substantive rank of colonel, if the number of soldiers is 1500 or upwards	5 0

Reserve of Officers.

An officer of the Royal Army Medical Corps with at least three, but not more than six, years' service may be permitted to become an Army Reserve Officer for a period of seven years, and while so serving he shall receive a retaining fee of £25 a year. With the sanction of the Army Council such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

Seconded Officers.

A Lieutenant on probation who at the time of passing the examination for admission to the Royal Army Medical Corps holds, or is about to hold, a resident appointment in a recognised civil hospital may be seconded for the period not exceeding one year during which he holds the appointment. While seconded he shall not receive pay from army funds, but his service shall reckon towards promotion, increase of pay, gratuity, and pension.

PROMOTION.

No promotion of a medical officer shall be made without the approval of the Secretary of State.

An officer shall be eligible for promotion to the rank of Captain on the completion of three and a half years' service, and to the rank of Major on the completion of 12 years' service, provided that in each case he has previously qualified in such manner as may be prescribed by the Army Council.

Promotion to the rank of Lieutenant-Colonel to complete an establishment shall be made by selection from Majors who have qualified in such manner as may be prescribed by the Army Council.

If an officer has passed with distinction the examination qualifying for promotion to the rank of Major, the 12 years' service required to render him eligible for that rank may be reduced as follows:—

	Months.
If he obtained a "special certificate"	18
,, passed in the 1st Class	12
,, ,, ,, 2nd ,,	6
,, ,, ,, 3rd ,,	3

Promotion to the rank of Colonel to complete an establishment shall be made by selection from Lieutenant-Colonels. An officer promoted to the rank of Colonel shall, unless retired, be placed on half-pay on completing a period of four years' service in such rank. A Lieutenant-Colonel may also be promoted to the rank of Colonel if specially recommended for distinguished service in the field. Promotion to the rank of Surgeon-General shall be made by selection from Colonels. A Colonel may also be promoted to the rank of Surgeon-General for distinguished service in the field. An officer of the Royal Army Medical Corps is eligible for promotion to brevet rank. A Captain after at least 6 years' service, a Major or Lieutenant-Colonel, may be promoted to the next higher rank by brevet for distinguished service in the field or for meritorious or distinguished service of an exceptional nature other than in the field. If the officer dies before the date on which the notification of his promotion for distinguished service in the field appears in the *London Gazette* the promotion shall bear the date which it would have borne had the officer not died. Distinction in original investigation or research may, in the case of officers of the Royal Army Medical Corps, be regarded as "distinguished service of an exceptional nature other than in the field." An officer who may in the opinion of the Army Council have been prevented, in very special circumstances, from qualifying for promotion, or who, having failed to qualify, may have been debarred from further opportunity of qualifying, may be provisionally promoted. If, however, he fails to qualify on the first available opportunity his promotion shall be cancelled and he shall be retired from the service. An officer shall reckon towards his promotion any time, not exceeding one year, during which he may have been on half-pay on account of ill-health caused by military service; and also any time not exceeding two years during which he may have been on reduction. An officer while seconded shall continue to be eligible for selection for promotion as if he had remained on the establishment, and his service while seconded shall reckon towards such promotion.

RANK.

The Director-General of the Army Medical Service shall hold the substantive rank of Surgeon-General and shall rank in relation to combatant officers as a Lieutenant-General if recommended by the Army Council. All other Surgeon-Generals shall rank as Major-Generals in relation to combatant officers. Officers of the Army Medical Service above the rank of Colonel shall hold the substantive rank of Surgeon-General.

RETIREMENT.

(*a*) *Voluntary Retirement.*

An officer of the Army Medical Service will be permitted to retire in cases in which such retirement may be deemed expedient by the Army Council.

Scale of Retired Pay.

	Yearly. £
Director-General after 3 years' service in the appointment (with 30 years' service)	1125
Under 3 years' service as Director-General and after not less than 30 years' service	875
	Daily. £ s. d.
Surgeon-General	2 0 0
Colonel—	
Under 4 years' service as such, but with 30 years' total service	1 10 0
After 4 years' service as such	1 15 0
If not qualified as above	the rate for a lieutenant-colonel.
Lieutenant-Colonel—	
After 20 years' service	1 0 0
,, 25 ,,	1 2 6
,, 28 ,,	1 7 6
Major, after 20 years' service	1 0 0
	Gratuity. £
Major or Captain—	
After 5 years' service in the rank of captain	1000
,, 3 ,, ,, major	1800
,, 6 ,, ,, ,,	2500

Except in the case of a Colonel, or a Lieutenant-Colonel, an officer who, on voluntary retirement, has served for less than three years in

the rank from which he retires, shall be entitled only to the gratuity or retired pay assigned to the next lower rank.

(*b*) *Retirement on Account of Age or Limitation of Period of Service.*

The Director-General of the Army Medical Service shall, unless his service has been specially extended to complete 30 years' total service, retire on completion of the term of his appointment, and the retirement of other officers of the Army Medical Service shall be compulsory at the following ages: Surgeon-General, 60; Colonel, 57; and other officers, 55. A Major shall retire on completion of 25 years' service if he has been superseded for promotion; or, if he fails to qualify for promotion, on completion of 20 years' service.

It shall be competent to the Army Council to place a medical officer on the retired list after 30 years' service.

(*c*) *Retirement on Account of Medical Unfitness.*

An officer placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

An officer, whether on full pay or half pay, who, to the satisfaction of the regulated medical authority has been pronounced insane, shall be retired from the Army.

The scale of retired pay on account of age or medical unfitness is the same as under voluntary retirement, except that the condition of three years' service in the rank is omitted.

Rates for Officers not qualified for Retired Pay or Gratuity on Voluntary Retirement.

If the unfitness was caused by military service retired pay equal to the half pay of his rank. If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half pay of his rank for such period only, not exceeding five years from the date of the officer's retirement from the Army, after five years on half pay under Article 435, as the Army Council shall determine according to the merits of the case.

KING'S HONORARY PHYSICIANS AND HONORARY SURGEONS.

Six of the most meritorious officers of the Army Medical Service on the active list shall be named Honorary Physicians and six Honorary Surgeons. On appointment as Honorary Physician or Honorary Surgeon an officer under the rank of Colonel in the Army Medical Service may be promoted to the brevet rank of Colonel. A Lieutenant-Colonel appointed Honorary Physician or Honorary Surgeon shall receive pay at the rate laid down for a Colonel of the Royal Army Medical Corps when qualified for promotion to that rank. An officer shall relinquish the appointment of Honorary Physician or Honorary Surgeon on retirement.

MEDICAL OFFICERS OF THE REGIMENTS OF HOUSEHOLD TROOPS.

Commissions as surgeon-lieutenants in the Household Cavalry shall be given, on the nomination of the titular colonels of the regiments, to persons approved by the Army Council. The conditions governing pay and promotion are similar to those laid down for the Royal Army Medical Corps.

EXCHANGES AND TRANSFERS.

An officer of the Royal Army Medical Corps shall be permitted to exchange with another officer of such corps, or with a medical officer of the Household Cavalry, under such conditions and regulations as may from time to time be made.

Exchanges between officers of the Royal Army Medical Corps under the rank of Major and medical officers of the Indian Army, and transfers of such officers from either of the above services to the other, shall only be permitted subject to the approval of the Secretary of State for India in Council and on the following conditions: (1) That the officers have less than seven years' service; (2) that the senior officer exchanging takes the place of the junior on the list and shall not be promoted until the officer next above him has been promoted; (3) that the junior officer exchanging is placed for seniority next below all medical officers whose commissions have the same date as his own; and (4) that the officer transferred is placed for seniority below all medical officers holding the same rank at the time of his transfer and shall not be promoted until the officer next above him has been promoted.

An officer of the Royal Army Medical Corps who has exchanged or been transferred from the Indian Army shall reckon, subject to the above conditions his previous service with the said forces towards promotion, increase of pay, gratuity, and pension.

LEAVE OF ABSENCE.

Full pay during ordinary leave of absence for 61 days in each year at home stations and generally longer periods abroad may be granted to a medical officer provided that no additional expense is incurred thereby.

When the period of leave has been exhausted or exceeded in consequence of sickness no further pay during ordinary leave shall remain due.

SICK LEAVE.

An officer of the Army Medical Service may draw full pay for the undermentioned periods during sick leave granted on the recommendation of the regulated medical authority, provided there is reasonable probability that he will ultimately be fit to return to duty:—

1. In ordinary cases for a period not exceeding 12 months.
2. In very special cases, such as loss of health due to tropical service or to active operations, the period may be extended, but it shall not exceed 18 months in all.

When a medical officer is sick at his station, whether in hospital, quarters, or lodgings, his absence from duty on account of sickness, up to a period of 30 days, and if duly certified by a medical officer, shall not be included in the period of absence on leave to which the issue of pay is limited, provided the general officer commanding at the station considers that the circumstances of the case warrant such a concession. Any excess of such leave of absence on account of sickness at an officer's station beyond the period of 30 days shall be deducted from his ordinary leave.

SERVICE ON THE WEST COAST OF AFRICA.

An officer volunteering for, or ordered to, the West Coast of Africa shall receive double pay while actually serving on the coast, and for any time spent at Madeira or the Canary Islands on sick leave, or on ordinary leave not exceeding 61 days in a year.

A medical officer after 12 months' continuous service on the West Coast is entitled to full pay during leave at home for one day for every two days served on the coast.

Each year or portion of a year served on the West Coast of Africa by an officer of the Royal Army Medical Corps shall reckon double towards voluntary retirement or retired pay, provided that he has served 12 months on the coast. In ordinary cases the 12 months may be made up of two separate periods of not less than six months each; and if an officer leaves the coast on account of sickness he may reckon any period of service on the coast, however short, in order to make up the 12 months' coast service which is required to entitle him to count his service double. Except when the officer has been invalided, no period of less than six months' of service on the coast shall reckon double under this article, or count towards the required period of 12 months.

WIDOWS' PENSIONS.

Widows' pensions and compassionate allowances for children and other relatives of deceased officers are given under certain conditions specified in the Royal Warrant for Pay and Promotion. There is also an Army Medical Officers' Widows' and Orphans' Fund on mutual assurance principles.

PAY IN INDIA.

There has been an improvement of late years in the pay and conditions of service of army medical officers in India, as elsewhere. The pay and allowances (which are combined in India) of a lieutenant are 420 rupees per mensem; for captain's rank, the pay and allowances are from 475 rupees to 530 rupees after seven, and to 650 rupees after ten years' service. Majors receive 789 rupees on promotion and 826 rupees after 15 years' service. Lieutenant-Colonels, 1150 rupees. In addition, charge pay is given, ranging from 60 to 240 rupees according to the number of beds equipped in a hospital. There are also various specialist appointments, cantonment hospitals, &c., carrying extra pay, that are shared between the Royal Army Medical Corps and the Indian Medical Service. The value of the rupee is fixed at 1*s.* 4*d.*

INDIAN MEDICAL SERVICE.

The grades of officers in the Indian Medical Service are the same as those of the Army Medical Service and Royal Army Medical Corps. The Director-General will rank either as Major-General or Lieutenant-General as may be decided in each case by the Secretary of State for India in Council.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR ADMISSION TO THE INDIAN MEDICAL SERVICE.

Candidates must be natural born subjects of His Majesty, of European or East Indian descent, between 21 and 28 years of age at the date of the examination, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess under the Medical Acts a qualification registrable in Great Britain and Ireland. No candidate will be permitted to compete more than three times. Examinations for admission to the service are held twice in the year, usually in January and July. Candidates for the January examination must be between 21 and 28 years of age on Feb. 1st, and those for the July examination must be between 21 and 28 on August 1st. The exact date of each examination and the number of appointments, together with the latest date at which applications will be received, will be notified in THE LANCET.

They must subscribe and send in to the Military Secretary, India Office, Westminster, *so as to reach that address by the date fixed in the advertisement of the examination*, a declaration according to the annexed form, which is procurable from the Military Secretary.

Declaration and Schedule of Qualifications to be Filled up by Candidates.

I, ..., a candidate for employment in His Majesty's Indian Medical Service, do hereby attest my readiness to engage for that service, and to proceed on duty immediately on being gazetted.

I declare that I labour under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer.

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief.

I inclose, in accordance with Paragraph 4 of the Regulations, (*a*) proof of age; (*b*) two certificates of character; (*c*) certificate of having attended a course of ophthalmic instruction, showing that the course included instruction in errors of refraction; (*d*) evidence of a registrable qualification; (*e*) *in case of natives of India or others educated in that country only*, a certificate from the Director-General, Indian Medical Service.

Signature .....

Date ....., 19 .

1. Name in full.
2. Address. (*Any alteration to be notified to the Military Secretary, India Office, London, S.W.*)
3. Date of birth. (*This must be supported by a certificate or statutory declaration.* See *Paragraph 4 of the Regulations.*)
4. Profession or occupation of father, and whether, at the time of candidate's birth, his father was a British subject of European or East Indian descent.
5. Statement as to whether the candidate is married or single.
6. Colleges and Medical Schools at which the candidate has received his medical education.
7. Medical School in which the candidate completed his course as a medical student, and name of the Dean or other responsible authority.

8. Degrees of B.A. or M.A.; details as to any prizes, university honours, &c.
9. Registrable qualifications.
10. Date of examination at which the candidate proposes to present himself.
11. Date of any previous occasions on which the candidate may have presented himself for examination for admission to the Indian Medical Service, or other examination for the Public Services.
12. Particulars of any commission or appointment held in the Public Services.

The declaration must be accompanied by the following documents:—*a. Proof of age* either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form for which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless. In the case of natives of India it will be necessary for a candidate to obtain a certificate of age and nationality in the form laid down by the Government of India which is obtainable from the Director-General of the Indian Medical Service, Simla. *b.* A recommendation and certificate of moral character from two responsible persons—not members of his own family—to the effect that he is of regular and steady habits and likely in every respect to prove creditable to the service if admitted. *c.* A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction. *d.* Some evidence of having obtained a registrable qualification. *e.* Any European educated in India and every native of that country will be required to produce a certificate signed by the Director-General, Indian Medical Service, that he is a suitable person to hold a commission in the Indian Medical Service.

The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service.

The physical fitness of each candidate will be determined by a Board of Medical Officers who are required to certify that his vision is sufficiently good to enable him to pass the regulation tests (see under Army Medical Service). Every candidate must also be free from all organic disease and from constitutional weakness or other disability likely to unfit him for military service in India. The physical examination is otherwise in all respects the same as that detailed under Royal Army Medical Corps. Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete. No candidate will be permitted to compete more than three times. More detailed regulations as to the physical requirements can be obtained on application to the India Office.

Candidates for the Indian Medical Service may, if they like, undergo a preliminary examination by the Medical Board which meets at the India Office every Tuesday by applying to the Under Secretary of State, India Office, inclosing a fee of two guineas. They must pay their own travelling expenses. The decision must be understood, however, not to be final. It may be reversed in either direction by the Examining Medical Board immediately prior to the Professional Examination.

On proving possession of the foregoing qualifications the candidate will be examined by the Examining Board in the following subjects and the highest number of marks attainable will be distributed as follows:—

	Marks.
1. Medicine, including therapeutics...	1200
2. Surgery, including diseases of the eye	1200
3. Applied anatomy and physiology...	600
4. Pathology and bacteriology	900
5. Midwifery and diseases of women and children	600
6. Materia medica, pharmacology, and toxicology	600

N.B.—The examination in medicine and surgery will be in part practical and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. No syllabus is issued in the subjects of the examination, but it will be conducted so as to test the general knowledge of the candidate in all subjects. No candidate shall be considered eligible who shall not have obtained at least *one third* of the marks obtainable in each of the above subjects and *one half* of the aggregate marks for all the subjects.

For the clinical examinations each candidate should provide himself with notebook, pencil, stethoscope, and ophthalmoscope. In drawing up reports on cases the following points should be observed, viz.: (*a*) A brief history of the case as given by patient, including such points in the family or personal history as have a distinct bearing on patient's case. (*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case. (*c*) Where there is any reasonable doubt in the mind of the candidate as to the exact diagnosis he is to give the alternatives, with his reasons for making the selection. (*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

After passing this examination the successful candidates will be granted about a month's leave and will then be required to attend two successive courses of two months each at the Royal Army Medical College, Millbank, and at Aldershot. The candidate's commission as a lieutenant will bear the date on which the result of the entrance examination is announced, but his rank will not be gazetted until he has passed the final examination, held at the conclusion of his period of instruction.

The course at the Royal Army Medical College will be in (1) hygiene, (2) military and tropical medicine, (3) military surgery, and (4) pathology of diseases and injuries incidental to military and tropical service.

The course at Aldershot will include instruction in (1) internal economy, (2) Indian military law, (3) hospital administration, (4) stretcher and ambulance drill, (5) equitation, and (6) map reading.

Lieutenants-on-probation will receive an allowance of 14*s.* per diem, and during the period of instruction they will be provided with quarters (where quarters are not provided they will obtain the usual allowances of a subaltern in lieu thereof), to cover all costs of maintenance, and they will be required to provide themselves with uniform; a detailed list of the uniform and articles required will be sent to each successful candidate.

A lieutenant-on-probation who is granted sick leave before the completion of his course of instruction and final admission to the service will receive pay at the rate of 10*s.* 6*d.* a day for the period of his sick leave.

Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

At the conclusion of each course candidates will be required to pass an examination on the subjects taught, and in order to qualify each lieutenant on probation must obtain 50 per cent. of the total marks. If he fails to qualify in either of these examinations he will be liable to removal from the service, but if specially recommended he may be allowed to undergo the course or courses again under certain restrictions as to pay and position.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations. They will be liable for military employment in any part of India, but in view to future transfers to civil employment, they will stand posted to one of the following civil areas:—(1) Madras and Burma; (2) Bombay with Aden; (3) Upper Provinces—i.e., United Provinces, Punjab, and Central Provinces; and (4) Lower Provinces—i.e., Bengal, and Eastern Bengal and Assam. The allocation of officers to these areas of employment will be determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes. Officers transferred to civil employment, though ordinarily employed within the area to which they may have been assigned, will remain liable to employment elsewhere according to the exigencies of the service.

A lieutenant who, within a reasonable period before the date on which he would otherwise sail for India, furnishes proof of his election to a resident appointment at a recognised civil hospital,[2] may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination and that he holds himself in readiness to sail for India within 14 days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission. In special cases permission may be granted to lieutenants to delay their departure for India, in order to sit for some further medical examination. Lieutenants remaining in England under such circumstances will receive no pay for any period beyond two months from the date of termination of the course of instruction, unless the period elapsing before the day on which the majority of the lieutenants of the same seniority sail to India exceeds two months, in which case lieutenants allowed to remain in England will receive pay up to that day. In such cases pay will re-commence on the day of embarkation for India. All the provisions of this clause are subject to the general exigencies of the service. Before the commission of a lieutenant-on-probation is confirmed he must be registered under the Medical Acts in force at the time of his appointment. Candidates who have been specially employed in consequence of a national emergency, either as an officer, or in a position usually filled by an officer, will be allowed, under certain circumstances, to reckon such service towards pension.

Officers on appointment are, when possible, provided with passage to India by troop transport; when such accommodation is not available passage at the public expense is provided by steamer, or a passage allowance granted if preferred. Wives of married officers are entitled to passage by troop transport, if available. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of terminating his course of instruction, or within 14 days of the termination of his hospital appointment if the Secretary of State has permitted him to hold one, will be considered as having forfeited his commission unless special circumstances shall justify a departure from this regulation.

A course of instruction in sanitary methods, rules, and regulations as carried out in Indian cantonments has recently been instituted for young officers of the Indian Medical Service and the Royal Army Medical Corps on first arrival in the country. The nature of the diseases to be combated, the social and religious customs and prejudices of the various races, and the limited resources of money and material make large modifications from European methods necessary. Lieutenants of both services are now posted on arrival either to Rawal Pindi, Poona, Lucknow, or Bangalore for one month for this course, which is

[2] The following is a list of recognised Civil Hospitals.—England and Wales.—London: St. Bartholomew's Hospital, Charing Cross Hospital, Guy's Hospital, King's College Hospital, London Hospital, Middlesex Hospital, St. George's Hospital, St. Mary's Hospital, St. Thomas's Hospital, University College Hospital, and Westminster Hospital. Birmingham: General Hospital and Queen's Hospital. Bristol: Royal Infirmary and General Hospital. Cambridge: Addenbrooke's Hospital. Cardiff: Cardiff Infirmary. Leeds: General Infirmary. Liverpool: Royal Infirmary and Southern Infirmary Manchester: Royal Infirmary. Newcastle-on-Tyne: Royal Infirmary. Oxford: Radcliffe Infirmary. Sheffield: Royal Infirmary and Royal Hospital. Scotland.—Aberdeen: Royal Infirmary. Dundee: Royal Infirmary. Edinburgh: Royal Infirmary. Glasgow: Royal Infirmary and Western Infirmary. Ireland.—Belfast: Royal Victoria Hospital. Cork: North Infirmary and South Infirmary. Dublin: Adelaide Hospital, City of Dublin Hospital, Jervis Street Hospital, Mater Misericordiæ Hospital, Meath Hospital, Mercer's Hospital, Richmond, Whitworth, and Hardwicke Hospital, St. Vincent's Hospital, Sir Patrick Dun's Hospital, and Dr. Steevens' Hospital. Galway: The County Hospital and the Union Hospital.

carried out under the supervision of the senior medical officer and sanitary officer. The instructors are medical officers nominated by the principal medical officer, India, and demonstrations on various subjects are given by other officers, staff, engineer, and medical. The course consists of demonstrations and inspections in all parts of the lines of British and Indian troops, bazaars, Government dairies, bakeries, slaughter-houses, trade premises of dairymen, bakers, butchers, and aerated water manufacturers and dhobies' houses, market and water-supplies, methods of washing clothes, surface drainage, removal and disposal of sewage and refuse, antimalarial measures, disinfection, cantonment hospitals, control of venereal diseases, plague prevention, methods of hospital administration, &c. The officers under instruction thus have an opportunity of learning something of native customs and are encouraged to learn the vernacular, so as to be less dependent upon their subordinates when first put in responsible positions.

PROMOTION.

A Lieutenant is promoted to the rank of Captain on completing three years' full-pay service from the date of first commission, provided he passes an examination in military law and military medical organisation. Captains are promoted to the rank of Major *without examination* after 12 years' full-pay service; this promotion may be accelerated by six months in the case of officers who fulfil certain specified conditions. A Major is promoted to Lieutenant-Colonel *without examination* on completion of eight years' full-pay service in the rank of Major. All promotions to higher grades are given by selection for ability and merit. In case of distinguished service a medical officer may receive special promotion. The ages for compulsory retirement are 55 for Lieutenant-Colonel and Major, 60 for Surgeon-General and Colonel, and 62 for the Director-General.

LEAVE RULES.

Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay for officers in military employment (officers in civil employment are entitled to higher rates): After arrival in India, on first appointment, £250 a year; after the commencement of the tenth year's service for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £450 a year; after the commencement of the twentieth year's service for pension, £600 a year; and after the commencement of the twenty-fifth year's service for pension, £700 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff pay of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving. Officers of the Administrative grades may be granted leave not exceeding eight months, besides privilege leave, during their tenure of appointment. Extra leave (known as study leave) may be granted to officers desirous of pursuing special courses of study at the rate of one month's leave for each year's service up to 12 months in all. An officer on leave is required to join at once on being recalled to duty unless certified by a medical board as unfit to do so.

PAY AND ALLOWANCES.

The rate of pay drawn by Lieutenants of the Indian Medical Service previous to arrival in India is 14*s.* a day, but a Lieutenant (1) who has been permitted by the Secretary of State to hold a hospital appointment will receive no pay while holding it; (2) who is detained by illness in this country will be paid at the rate of £250 a year from the date on which he would otherwise have embarked until the date of embarkation, and at the rate of 14*s.* a day during the voyage to India.

Pay at the above rate is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India.

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the date of their arrival in India (N.B.—1 rupee = 1*s.* 4*d.*):—

Rank.	Unemployed pay.	Grade pay.	Staff pay.	In officiating medical charge of a regiment.	In permanent medical charge of a regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
,, after 5 years' service ...	475	450	150	525	600
,, after 7 years' service ...	—	500	150	575	650
,, after 10 years' service ...	—	550	150	625	700
Major	—	650	150	725	800
,, after 3 years' service as Major	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1075	1250
,, ,, after 25 years' service ...	—	900	400	1100	1300
,, ,, specially selected for increased pay	—	1000	400	1200	1400

NOTES.—(*a*) Unemployed pay is drawn by officers of less than seven years' service who are not holding officiating or substantive charge of native regiments *provided* they have passed the examination in Hindustani known as the "Lower Standard." Officers of more than seven years' service draw grade pay alone when unemployed. Staff pay is the pay of certain special appointments and is drawn in addition to grade pay.

(*b*) Horse allowance is granted to officers in charge of cavalry regiments at the rate of Rs. 90 a month to Lieutenant-Colonels and Majors, and Rs. 60 a month Captains and Lieutenants.

Exchange compensation.—Under present arrangements, officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1*s.* 6*d.* the rupee, and (2) the standard Government rate, which has been fixed at 1*s.* 4*d.* the rupee until further notice.

No officer, however employed, can draw more than the grade pay of his rank until he has passed the "Lower Standard."

Officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive the following consolidated salaries:—

	Rs. per mensem.
Colonel, 16 (some in civil employ) from	1800 to 2500
Surgeon-General, 1 @	2200
,, 2 @	2500
,, (the Director-General I.M.S.) 1 @	3000

Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of Lieutenant-Colonel who may be appointed to certain posts.

Except in the administrative grades and in certain special appointments officers are not debarred from taking private practice as long as it does not interfere with their proper duties.

POSTS IN CIVIL EMPLOY.

A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment. The principal appointments, together with the salaries attached to each, are stated in the following table:—

Description of appointment.	Approximate number of appointments in each class.	Salary per mensem. When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Inspectors-General of Civil Hospitals	6	2250-2500	—	—	—
Sanitary Commissioner with Government of India	1	2000-2500	—	—	—
Inspectors-General of Prisons	8	1500-2000	—		—
Principals of Medical Colleges	2	1650-1800	1200-1300	—	—
Professorial Appointments	23	1500-1650	1050-1150	800-950	750
Sanitary Commissioners ...	6	1500-1800	—	—	—
Deputy Sanitary Commissioners...	13	1450-1600	1000-1100	750-900	650
Bacteriological Appointments	5	1500-1600	1050-1150	700-900	650
Superintendents of Central Lunatic Asylums	6	1400-1550	1050-1150	700-900	650
Superintendents of First Class Central Jails	5	1400-1550	950-1050	700-850	650
Superintendents of Second Class Central Jails	5	1300-1450	850-950	600-750	550
Civil Surgeoncies (First Class)	37	1300-1450	850-950	600-750	550
Civil Surgeoncies (Second Class)	171	1200-1350	750-850	500-650	450
Probationary Chemical Examiner	1	—	—	600-750	550
Officers deputed to plague duty	—	1450	1000-1100	750-900	700

An allowance of Rs. 100 per mensem is also granted, in addition, to the chief plague medical officers in certain provinces.

There are also six Chemical Examiners with Rs. 800-1650 per mensem and a number of Port Health Officers with Rs. 750-1950 per mensem. Other appointments of Resident Surgeons and Physicians at hospitals, &c., are on salaries ranging from Rs. 700 to 1650 per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from Rs. 450 to 1450 per mensem, exclusive of local allowances.

Qualified officers of the Medical Service are also eligible for appointments in the Assay and Mint Departments. The salaries of these appointments are from Rs. 600-2250 per mensem.

POSTS IN MILITARY EMPLOY.

Approximately half the highest administrative posts in military medical employ are allotted to the Indian Medical Service. These include the appointments of Deputy Principal Medical Officer of His Majesty's Forces in India and Secretary to the Principal Medical Officer of

His Majesty's Forces in India. Half the appointments of Principal Medical Officers are to Divisions and Brigades, the other half being filled by Royal Army Medical Corps Officers. In the junior ranks half the appointments to military staff surgeoncies, the medical charge of cantonment hospitals and Staff Officers for medical mobilisation stores in each of the nine divisions of the Army are allotted to the Indian Medical Service and the other half to the Royal Army Medical Corps. The appointments of Medical Storekeepers to Government, which supply the needs of the Civil and Military Departments, are reserved for the Indian Medical Service alone.

Tenure of Office in Administrative Grades.

The tenure of office of Surgeon-Generals and Colonels is limited to five years. Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade or for employment in the higher grade of Surgeon-General by promotion thereto.

Absence on leave in excess of eight months during a five years' tour of duty involves forfeiture of appointment.

Surgeon-Generals and Colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw *in India* an unemployed salary of Rs. 1350 per mensem in the former, and Rs. 1000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:—

—	Surgeon-General. Per diem.	Colonel. Per diem.
	£ s. d.	£ s. d.
After 30 years' service on full pay	2 5 0	1 14 0
,, 25 ,, ,, ,, ...	2 5 0	1 10 0
,, 20 ,, ,, ,, or on promotion, should this period of service not be completed...	2 0 0	1 8 0

A Surgeon-General or Colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

Retiring Pensions and Half-pay.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension on completion of the required periods of service:—

After 30 years' service for pension...	£700 per annum + £350 after three years' active employment in India as a Surgeon-General, or + £250 per annum after five years' active employment as a Colonel or £125 after three years as a Colonel. Eight months' absence on leave is allowed to count towards actual service in those grades.
,, 27½ ,, ,, ,,	£600 per annum.
,, 26 ,, ,, ,,	£500 ,,
,, 20 ,, ,, ,,	£400 ,,
,, 17 ,, ,, ,,	£300 ,,

Service for pension counts from date of first commission and includes all leave taken under the leave rules.

Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of medical unfitness caused by duty, military or civil.

Officers of the Indian Medical Service are liable after retirement on pension before completing 30 years' service to recall to military duty in case of any great emergency arising up to 55 years of age.

All officers of the rank of Lieutenant-Colonel and Major are placed on the retired list at the age of 55, and all Surgeons-General and Colonels at the age of 60, but the Director-General is allowed to serve until he has attained the age of 62 years. In any special case, where it would appear to be for the good of the Service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on temporary or permanent half-pay are granted half-pay at the following rates.

—	Rates of Half-pay.* Per diem.	Per annum.
	£ s. d.	£ s. d.
Under 5 years' service	0 6 0	109 10 0
After 5 ,, ...	0 8 0	146 0 0
,, 10 ,, ...	0 10 0	182 10 0
,, 15 ,, ...	0 13 6	246 7 6
Lieutenant-Colonel, under 3 years' service as such	1 0 0	365 0 0
Lieutenant-Colonel, over 3 years' service as such	1 7 6	501 17 6

* Officers cannot retire *in India* on half-pay.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by service.

Invalid Pensions.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may be granted an Invalid Pension on the following scale:—

	Per annum.
After 16 years' pension service	£272
,, 15 ,, ,, ,, ...	252
,, 14 ,, ,, ,, ...	232
,, 13 ,, ,, ,, ...	212
,, 12 ,, ,, ,, ...	192

Wound Pensions.

Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

Family Pensions.

The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

Honours and Rewards.

Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious officers are named Honorary Physicians and six are named Honorary Surgeons to His Majesty. On appointment as Honorary Physician or Surgeon an officer below the rank of Colonel is promoted to that rank, remaining supernumerary until absorbed.

The Royal Army Medical Corps is at the present time, we believe, a fairly contented service, although for some time back there has been a feeling of uneasiness and uncertainty amongst all ranks, but more especially in the senior ranks, as to their future prospects by the adoption of a system of promotion by so-called selection. It is felt that the spirit of the Royal Warrant for promotion has been departed from, thereby causing a block in promotion affecting all ranks. We had reason to refer to this condition of affairs in an annotation on the appointment of the present Director-General (*vide* THE LANCET, April 2nd, 1910, p. 936). The limitation of the tenure of the colonel's appointments to four years has caused heartburnings in this grade, as after this period, unless promoted, men are now placed on half-pay. Again, the reduction of the cadre establishment of lieutenant-colonels has adversely affected a large number of majors who are well worthy of promotion to the next rank; and it is felt that the rules recently introduced allowing of accelerated promotion from the rank of captain to major have not worked as fairly as it was intended they should have. Dissatisfaction is also caused by the inconvenience caused to officers under 12 years' service having to remain in military hospitals on orderly duty as often as every fourth night for night duty and carry out their day work as well.

The improvements that have been introduced by Sir Alfred Keogh, K.C.B., the late Director-General, have, however, been so substantial, both as regards emolument and as affecting the professional and military status of medical officers, that it would be ungracious to refrain from acknowledging the generous spirit that has actuated the War Department authorities in their attitude to the medical service. We feel sure that the good results of this are being, and will continue to be, manifested in an improvement in the health and efficiency of the army at large.

In the Indian Medical Service the recent introduction of the increased pension (£600 per annum) after 27½ years service has been an important concession; there is still, however, a block in promotion, administrative rank, which used to come after 26 or 27 years', being now generally deferred until over 30 years' service; limitation of the period of service in administrative rank, as recently adopted in the Royal Army Medical Corps in the case of the colonel's grade, would probably be an improvement. The order issued that an officer of the Indian Medical Service must refer the question of his fees when above a certain low limit to the civil authority was most objectionable: it might necessitate the violation of professional secrecy and it is professionally degrading. Revised rules were promulgated in the early part of the present year (see THE LANCET, March 11th, 1911, page 682), which, if there is really necessity for any regulations at all in these matters, need not be objected to. The neglect of the rule that the office of principal medical officer to His Majesty's forces in India may be held by an officer of the Indian Medical Service is still felt to be a grievance. On the whole it can hardly be said that the Indian service at the present time offers the advantages over the Royal Army Medical Corps, either professional or pecuniary, that it formerly possessed. If the changes foreshadowed by the Secretary of State (see THE LANCET, May 29th, 1909, p. 1537, and July 10th, 1909, p. 91) be carried out, it seems to be inevitable that the status, prospects, and influence of the Indian Medical Service will be affected injuriously. The objections to these proposals are, however, we venture to think, so serious on the grounds of general policy that we

abstain from any criticism on their effect on the prospects of the Indian Medical Service; there is, indeed, no concrete proposal to criticise. It is, moreover, a dangerous thing to introduce a feeling of distrust and uncertainty into any public service; if the duties hitherto performed by the Indian Medical Service are in future to be shared with other medical men not of that service, then the privileges and emoluments of the Indian Medical Service will inevitably be diminished, with the natural result that men of the highest class will come forward in fewer numbers to compete for the service, and the service generally will deteriorate. Such a result would be disastrous.

PUBLIC HEALTH DIPLOMAS.

INSTRUCTION FOR DIPLOMAS IN STATE MEDICINE.

RESOLUTIONS, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," have been adopted at various times by the General Medical Council from 1902 to 1910. The rules require that—"1. A period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery and the admission of the candidate to any examination or any part thereof for a diploma in Sanitary Science, Public Health or State Medicine. 2. Every candidate shall produce evidence that after obtaining a registrable qualification he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the licensing body granting the diploma, in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught. 3. Every candidate shall produce evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration either under the supervision of: (*a*) in England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to Public Health work; or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British Dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the Department of Public Health of a recognised Medical School; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, District, Command, or Division, recognised for this purpose by the General Medical Council. (The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule 3, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Rule 2), in the case of any candidate who produces evidence that after obtaining a registrable qualification he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration, given by a teacher or teachers in the Department of Public Health of a recognised medical school. A candidate who shall have produced evidence that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British Dominions, and having a population of not less than 15,000, may be exempted from the requirement of Rule 3.) 4. Every candidate shall produce evidence that after having obtained a registrable qualification he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. (Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence under Rule 4.) 5. The examination shall be conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health."

The regulations in question as to study may be procured at the office of the General Medical Council in London.

University of London.—State Medicine is one of the subjects which candidates for the M.D. degree may offer (Branch V.). Certificates must be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' instruction in public health administration under the supervision of a medical officer of health, and three months' attendance on the practice of a hospital for infectious diseases. In connexion with this degree the various metropolitan medical schools hold regular classes under teachers of Public Health and Sanitary Science, such instruction being also used to obtain the various diplomas of other Universities and of those Royal Corporations which grant them.

University of Oxford.—An examination, conducted partly in writing, partly *vivâ voce*, and in each subject partly practical, is held in Michaelmas and Easter Terms in the following subjects:—General Hygiene, General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The examination is in two parts, which may be taken together or separately; but Part I. must be passed either before or at the same examination as Part II. The fee for admission to the examination is £5 for each part. Successful candidates are entitled to receive the Diploma in Public Health. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of registrable qualification and the time when he presents himself for either part of the examination; (2) he produce evidence of having, after obtaining a registrable qualification, attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; and (4) he produce evidence of having, after obtaining a registrable qualification, for six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) been associated day by day in the duty, routine and special, of public health administration under the supervision of: (*a*) in England and Wales either the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland or Ireland the medical officer of health of a county or of one or more sanitary districts having a population of not less than 30,000; or (*c*) a medical officer of health who is a teacher in the department of public health of a recognised medical school; or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps or district;

or (*e*) in the British dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000 who himself holds a registrable diploma in public health. A certificate of an assistant officer of health of a county or a large sanitary district may be accepted, provided the medical officer of health of a county or district consents to the assistant officer giving such instruction. Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation. A candidate who produces evidence that he has himself held, for a period of not less than three years, an appointment as medical officer of health of a sanitary district within the British dominions and having a population of not less than 15,000 shall be exempt from the provision of paragraph (4). The provisions as to previous study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890.

The First Part of the examination will comprise (*a*) a written paper of three hours in Chemistry and Physics; (*b*) a three hours' practical and *viva voce* examination in Chemistry and Physics. The Written Examination: the subjects will be: Air (Examination, Recognition and Determination of Impurities); Water (Rainfall, Sources and Characters of Waters, Purification and Softening, Methods of Analysis, Distribution and Supply); Soils; Ventilation and Warming; Removal and Disposal of Sewage, House Refuse, Trade Refuse; Offensive Trades in their Chemical and Physical Aspects; Disinfectants; and the Examination of Foods by Chemical and Microscopical Methods. The Practical Examination: Candidates will be expected to exhibit a practical acquaintance with the ordinary methods of analysis and examination used in investigations concerning the subjects of the Written Examination.

The Second Part of the examination will consist of the following parts:—(*a*) Two written papers, each of three hours, dealing with General Hygiene (including Sanitary Engineering, Vital Statistics, and the Laws relating to Public Health); (*b*) a practical and *viva voce* examination in General Hygiene; (*c*) a written paper of three hours in Pathology and Bacteriology; and (*d*) a three hours' practical and *viva voce* examination in Pathology and Bacteriology. The subjects of these examinations will be as follows:—General Hygiene.—The Written Examination: The construction, drainage, heating, and ventilation of dwellings, schools, hospitals, and other similar buildings; the general sanitation of villages and towns; influences which exercise or threaten to exercise an injurious effect on health and physical development; the etiology, symptoms, and methods of prevention of infectious and other preventable disease; the effects of food, season, soil, and climate upon health and disease; dangerous and offensive trades; the inspection of food; the principles and methods of Vital Statistics; the laws, statutes, memoranda, &c., relating to Public Health. The Practical and *viva voce* Examination: Candidates will be required to show a practical knowledge of outdoor sanitary work. Pathology.—The Written Examination: The general pathology of infection by any organism (including a general knowledge of parasitology and helminthology), immunity, the principles of prophylactic and curative inoculations, serum therapeutics; the special pathological characters of the common human infections; the pathology of the diseases of animals transmissible to man; the conditions affecting the existence of infective agents outside the animal body; the pathology of diseases dependent on occupation. The Practical *viva voce* Examination: Candidates will be expected (*a*) to be able to demonstrate the existence of infective agents in pathological material; (*b*) to recognise cultures of the ordinary pathogenetic bacteria; (*c*) to exhibit a knowledge of the ordinary methods of bacteriological investigation, and of the special methods applicable to the examination of air, water, food, soil, and sewage; (*d*) to be familiar with the appearances presented by food which for bacteriological reasons is considered unfit for consumption.

Candidates in Part I. of the examination will be required to produce a certificate (1) of Laboratory Work in Chemistry as applied to Hygiene.

Candidates in Part II. will produce the following further certificates: (2) of a Practical Knowledge of the Duties, Routine and Special, of Public Health Administration; (3) of having had Practical Instruction in Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man; and (4) of having attended the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of the Methods of Administration. The courses of instruction in Chemistry applied to Hygiene and in Pathology and Bacteriology may be taken in the laboratories of any University in the United Kingdom, of any school of the University of London, of the Royal Army Medical College, of University College, Bristol, of any extramural school in Edinburgh, of Anderson's College, Glasgow, The Royal Institute of Public Health, and in any such other laboratory as may, in the case of any particular candidate, be approved of by the Regius Professor of Medicine. In the cases of certificates (2) and (4), the certificates shall be given in such form as shall satisfy the secretary to the Boards of Faculties that the candidate has conformed to the rules of the General Medical Council. The names of candidates must be sent to the Assistant Registrar of the University, Clarendon Building, Oxford, to whom applications for any further information should be addressed.

University of Cambridge.—Two examinations in so much State Medicine as is comprised in the functions of medical officers of health are held during the year in Cambridge. Each examination consists of two parts, Part I. beginning on Wednesday, April 5th, and Wednesday, Oct. 4th, respectively, and Part II. on the Monday following, April 10th and Oct. 9th respectively. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to either part of the examination; (2) he produce evidence of having, after obtaining a registrable qualification, attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration, including therein the methods of dealing with patients at their admission and discharge as well as in the wards, and the medical superintendence of the hospital generally; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; and (4) he produce evidence of having, after obtaining a registrable qualification, during six months[1] (of which at least three months shall be distinct and separate from the period of laboratory instruction required under paragraph 3) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of public health administration under the supervision of: (*a*) in England and Wales either the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland the medical officer of health of a county or counties or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland the medical superintendent officer of health of a district or districts having a population of not less than 30 000; or (*d*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*e*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps district or command, recognised for this purpose by the General Medical Council[2]; or (*f*) in the British dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000 who himself holds a

[1] This period of six months may be reduced to a period of three months (which must be distinct and separate from the period of Laboratory Instruction required under paragraph 3) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration, given by a teacher or teachers in the Department of Public Health of a recognised Medical School.

[2] Districts recognised by the General Medical Council:—Aldershot, Salisbury Plain, Southern and South-Eastern, Western, Dublin and Belfast, Cork, Chatham and Woolwich, Home, Eastern, North-Eastern and North-Western, Scottish, Gibraltar Command, Western Command (late Bombay), Northern Command (late Punjab), Eastern Command (late Bengal), and Secunderabad and Burma Divisions (late Madras Command).

registrable diploma in public health. The certificate of an assistant officer of health of a county or of a large sanitary district having a population of not less than 50,000 may be accepted as evidence under paragraph 4, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. A candidate who produces evidence that he has himself held, for a period of not less than three years, an appointment as medical officer of health of a sanitary district within the British dominions and having a population of not less than 15,000 shall be exempt from the provisions of paragraph (4). The provisions as to previous study (paragraphs 2, 3, and 4) shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890.

Examinations in Tropical Medicine and Hygiene.—Two Examinations in Tropical Medicine and Hygiene are conducted yearly by the State Medicine Syndicate of the University of Cambridge. The examinations are held in Cambridge early in January and in the middle of August. Each examination will extend over four days.

Any person whose name is on the Medical Register is admissible as a candidate to the examination provided (I.) that a period of not less than 12 months have elapsed between his attainment of a registrable qualification and his admission to the examination; (II.) that he produce evidence, satisfactory to the Syndicate, that he has diligently studied Pathology (including parasitology and bacteriology) in relation to Tropical Diseases, Clinical Medicine, and Surgery at a Hospital for Tropical Diseases, and Hygiene and Methods of Sanitation applicable to Tropical Climates. As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with Tropical Medicine or Hygiene; (2) any Certificate or Diploma in Public Health or Sanitary Science he may have obtained from a recognised Examining Body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the examination and by the examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The examination will be partly oral and partly practical, and will have reference to the nature, incidence, prevention, and treatment of the epidemic and other diseases prevalent in tropical countries. It will comprise the following subjects: 1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical and microscopic, of poisonous or contaminated foods and waters. 2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of tropical climates, including—malaria; blackwater fever; trypanosomiasis; relapsing fever; dengue; yellow fever; plague; tetanus; beri-beri; dysentery and hepatic abscess, cholera, enteric fever, Malta fever, and specific diarrhœal affections of the tropics; diseases due to cestode and other worms; filariasis; bilharzial disease; specific boils, sores, and other cutaneous affections; mycetoma; ophthalmic affections of the tropics; affections caused by poisonous plants and animals, and by poisoned weapons; sunstroke. 3. The general effects on health in the tropics of seasons and climate, soil, water, and food. Personal hygiene, acclimatisation. Principles of general hygiene, with special reference to food- and water-supplies, sites, dwellings, drainage, and the disposal of refuse. The sanitation of native quarters, camps, plantations, factories, hospitals, asylums, jails, pilgrim, and coolie ships. Principles and methods of disinfection.

Every candidate who passes the examination to the satisfaction of the examiners will receive from the University a diploma testifying to his knowledge and skill in tropical medicine and hygiene.

The fee for the examination is £9 9*s*., and all applications for information should be addressed to Professor G. H. F. Nuttall, F.R.S., 3, Cranmer-road, Cambridge.

The first part of the examination will have reference to the general principles of sanitary science and will comprise the following subjects. The elements of chemistry and physics: methods of chemical analysis and in particular the analysis of food, air, water, and sewage. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics in their application to warming, ventilation, water-supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water-supply. The elements of meteorology in relation to health. The general principles and chemistry of sewage disposal. Disinfectants, their chemistry and use. The microscopical examination of foods and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection and of the diseases of animals that are transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects. Laws and Statutes relating to Public Health.[3] The model by-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cowsheds, &c. Inspection of meat and other articles of food. Principles of building construction in their application to dwellings, hospitals, and schools. The general principles and practice of sanitary engineering. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations and the diseases to which they give rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of vital statistics in relation to public health. (N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of sanitary science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of medical officers of health.) The examinations in both parts will be oral and practical, as well as in writing. Candidates may present themselves for either part separately or for both together at their option; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts. Every candidate will be required to pay a fee of £6 6*s*. before admission or readmission to *either part* of the examination, but candidates who have presented themselves before the year 1896 will be readmitted to either part on payment of a fee of £5 5*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health. Marks of distinction will be placed opposite the names of candidates who have specially distinguished themselves either in (1) the general principles of hygiene, (2) bacteriology, (3) chemistry in Part 1 of the examination, or (4) the second part of the examination. All applications for information respecting this examination and the courses of study should be addressed to J. E. Purvis, M.A., Assistant Secretary to the State Medicine Syndicate, the Chemical Laboratory, Pembroke-street, Cambridge. Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose and transmit them with the fees to Mr. J. W. Clark, Registrary, University of Cambridge, for the April examination on or before March 24th[4] and for the October examination on or before Sept. 22nd.[4] The prescribed certificate must be sent to the Registrary so as to reach him not later than 10 A.M. on March 30th and Oct. 1st respectively. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled, without an additional fee, to be a candidate on one subsequent occasion. Candidates must before admission to either part of the examination produce evidence of having satisfied provisions (1), (2), and

[3] All candidates will be examined in the provisions of the English Statutes relating to public health, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, *when applying for admission to the examination, he give notice* of his desire and indicate the special law he proposes to offer.

[4] These dates vary slightly from year to year.

(3), and before admission to Part II. having satisfied provision (4), above mentioned. The following is a list of colleges and schools of medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the State Medicine Syndicate: The University Laboratories, Cambridge; London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London; University College, London; the Royal Army Medical College, London; the Victoria University of Manchester; the University of Durham Medical School, Newcastle-on-Tyne; University of Birmingham; University of Liverpool; St. Mary's Hospital Medical College; Charing Cross Hospital College; Westminster Hospital Medical School; University College, Bristol; the University of Leeds; Guy's Hospital Medical School; St. Mungo's College, Glasgow; Edinburgh University; Middlesex Hospital Medical School; Royal Southern Hospital, Liverpool; Royal Colleges, Edinburgh; Surgeons' Hall, Edinburgh; Trinity College, Dublin; Queen's College, Belfast; St. Thomas's Hospital Medical School; University College, Cardiff; University of Sheffield; Medical School, Catholic University, Dublin; St. George's Hospital Medical School; University of Glasgow; University of Aberdeen; Anderson's College, Glasgow; the Royal Institute of Public Health; the Royal College of Surgeons in Ireland; the Government Bacteriological Laboratory, Hong-Kong; North-East London Post-Graduate College; and the Government Bacteriological Laboratory, Cairo.

University of Durham.—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor of Hygiene (B.Hy.) must be at least twenty-two years of age, registered, and a graduate in Medicine of a recognised university, and at least twelve months shall have elapsed after the date when the candidates obtained their first registrable qualification in Medicine, Surgery, and Midwifery before presenting themselves for examination. They shall spend six months at Newcastle-upon-Tyne studying Comparative Pathology, Practical Bacteriology, Sanitary Chemistry, and Physics. They have to pass an examination in Sanitary Chemistry, Physics, Comparative Pathology, Sanitary Legislation, Vital Statistics, Nosology, Climatology, Meteorology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B.Hy. is 10 guineas and for the degree £6 6*s*. The examination is divided into two parts and candidates may present themselves for either part or both together at their option. Candidates for the degree of Doctor of Hygiene (D.Hy.) must have acquired the degree of Bachelor of Hygiene, must for two years subsequently have been engaged in practice as a medical officer of health, and must write an essay upon some practical hygienic subject. The fee for the examination for the degree of D.Hy. is £5 and for the degree £6 6*s*. The regulations for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor of Hygiene, except that the candidate is not required to be a graduate in Medicine of a recognised University and the course of study need not be passed at Newcastle-upon-Tyne. The fee for the examination and Diploma in Public Health is 10 guineas.

Victoria University of Manchester.—An examination in Public Health is held twice yearly under the following regulations: The examination is in two parts and is written, oral, and practical. Candidates before entering for either part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates of having attended courses of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; of having attended, after obtaining a registrable qualification, during at least six months, practical instruction in a laboratory approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; of having, after obtaining a registrable qualification, attended for three months the clinical practice of an approved hospital for infectious diseases; of having, after obtaining a registrable qualification, practically studied the duties of outdoor sanitary work for not less than six months under the medical officer of health of a county or of a large urban district. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be admitted to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. The fee for each part is £5 5*s*. and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health. The examinations will begin about the end of March and the middle of July in each year. Holders of the Diploma in Public Health are eligible for examination for the Certificates in School Hygiene and Factory Hygiene after attending the prescribed periods of study and hospital practice.

University of Birmingham.—The University grants a degree of B.Sc. in Public Health and also a Diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University and they must, in addition, have attended a three months' course of Geology in the University. The following are the regulations for Diploma in Public Health (general conditions):—1. All candidates must be registered under the Medical Act. 2. The examinations will be held in the months of March and June and will consist of two parts. No candidate will be allowed to pass Part II. until he has passed Part I. 3. Candidates may enter for Parts I. and II. separately or at the same time. 4. The examination in each part will be written, oral, and practical. 5. Candidates intending to present themselves for either part of the examination must give notice in writing to the registrar of the University on the date prescribed in the calendar. 6. The fee for each part of the examination is £5. The conditions of admission to the examinations are identical with those approved by the General Medical Council.

Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the Staff College and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the Examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

University of Liverpool.—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The curriculum for the D.P.H. Examination demands (1) a six months' course of practical instruction in Sanitary Science; (2) a six months' course of laboratory instruction in Chemistry and Bacteriology; and (3) practical instruction in Infectious Diseases. Fees.—Chemistry, £5 5*s*; Bacteriology, £5 5*s*.; Practical Sanitation, £15; Infectious Diseases, £3 3*s*. The courses may be taken out at any time and students are allowed to work daily in the laboratories.

University of Leeds.—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The examination, which is held twice in each year—namely, in June and December—is in two parts, and is written, oral, and practical. Candidates, before entering for the first part of the examination, must have held for not less than 12 months a registrable qualification in Medicine, Surgery, and Midwifery and must present satisfactory certificates (1) of having attended an approved course of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; (2) of having attended, after obtaining a registrable qualification, during at least six months practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; three of these months must be spent in the University in attendance on one of the practical courses. Candidates before entering the second part of the examination must present certificates (3) of having, after obtaining a registrable qualification, attended during not less than three months the clinical and administrative practice of a hospital for infectious diseases approved by the University; (4) of having, after obtaining a registrable

qualification, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under 2), been diligently engaged in acquiring a knowledge of the duties, routine and special, of Public Health administration under the supervision of (*a*) the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or (*b*) a medical officer of health devoting his whole time to Public Health work, or (*c*) a medical officer of health who is also a teacher in the Department of Public Health of a recognised medical school, or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, district, or command recognised for the purpose by the General Medical Council, *or* of having attended during three months as required above, and during three months after obtaining a registrable qualification, having attended a course or courses of instruction, approved by the University, in subjects bearing on Public Health Administration. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be allowed to pass in Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. Fees—The fee for each part is £5 5*s*., and must be paid at least 14 days before the commencement of the examination. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination and who is legally registered will receive a Diploma in Public Health. Medical practitioners registered or entitled to be registered on or before Jan. 1st, 1890, may be exempted from producing the above required certificates of study.

University of Sheffield.—This University grants a Diploma in Public Health and courses of instruction have been arranged for it. These qualify for the Cambridge University Diploma, for that given by the Conjoint Board of England, and for the degree of M.D. in State Medicine of the University of London.

University of Bristol.—Diploma in Public Health. Candidates must be at least 23 years of age, shall be fully registered medical practitioners of not less than 12 months' standing as such, and shall have passed the examination prescribed by regulation. The examination is divided into two parts. The subjects of the First Part are Chemistry as applied to Public Health and Pathology and Bacteriology. Candidates for the First Part shall, during six months after having obtained a registrable qualification, have received practical laboratory instruction in Hygienic Chemistry, in Bacteriology, and in the Pathology of the Diseases of Animals Transmissible to Man. The subjects of the Second Part are: Public Health and Epidemiology, Sanitary Law, Vital Statistics, and Sanitary Reporting. Candidates for the Second Part shall, during six months after having obtained a registrable qualification, have been diligently engaged in acquiring a practical knowledge of the duties, both routine and special, of public health administration under the supervision of certain persons specified by the General Medical Council, a list of which can be obtained from the prospectus.

University of Edinburgh.—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh, viz., Bachelor of Science in Public Health and Doctor of Science in Public Health. Candidates for the degree of B.Sc. in Public Health must be graduates in Medicine of a University of the United Kingdom, or of some other University recognised for the purpose, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least 20 hours per week during a period of not less than eight months, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University; they must also have attended courses of instruction in Physics and Geology in some Scottish University. Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than 18 months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health in some University of the United Kingdom or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of 40 lectures at least; one of which courses shall deal with medicine and the other with engineering, each in its relation to public health. They must also give evidence that, subsequent to graduation in medicine, (1) they have during three months, which must be separate and distinct from the period of laboratory instruction, been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the supervision of (*a*) a medical officer of health recognised for this purpose by the General Medical Council; (*b*) a sanitary staff officer of the Royal Army Medical Corps, having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council; (2) that they have attended during three months the practice of a hospital for infectious diseases, at which opportunities are afforded for the study of methods of administration; and (3) that they have had three months' instruction in mensuration and drawing. The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics. Graduates who have held the degree of B.Sc. in Public Health from the University of Edinburgh for a term of five years may offer themselves for the degree of D.Sc. in Public Health in that University. They must then present a Thesis and pass an examination in Public Health. The fees are £3 3*s*. for the First and £3 3*s*. for the Second B.Sc. Examinations, and £10 10*s*. for the degree of D.Sc.

University of Aberdeen.—The Diploma in Public Health (D.P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than 12 months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having during six months (whereof three months must be distinct from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the medical officer of health of a county or large urban district. He must have regularly attended for three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. He must also have obtained practical instruction in the drawing and interpretation of plans. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s*. The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

University of Dublin (Trinity College).—The Diploma in Public Health is conferred, after examination, on the following conditions. The candidate must be a registered medical practitioner and have obtained a registrable qualification at least 12 months before the examination. The candidate must have completed (unless registered as a practitioner on or before Jan. 1st, 1890), subsequently to obtaining a registrable qualification, six months' practical instruction in a chemical and bacteriological laboratory or laboratories approved by the University, must have studied practically outdoor sanitary work for six months under an approved officer of health (at least three months of this period being distinct from the time spent in laboratory work), and must have spent three months in a fever hospital where opportunities are afforded for the study of methods of administration. The subjects of examination are:—Part I.: Chemistry, Bacteriology, Hygiene, Pathology (including methods of post-mortem examinations), Physics, and Meteorology. Part II.: Hygiene and Epidemiology, Vital Statistics, Public Health Law, and Sanitary Engineering and Reports.

National University of Ireland.—At this University there is a Diploma in Public Health and a B.Sc. in Public Health. The Diploma may be granted to matriculated students of the University who shall have completed approved courses

of study and shall have passed the prescribed examinations, provided that it shall not be granted except to a registered medical practitioner.

Candidates may present themselves for the examination after an interval of not less than 12 months from the time of obtaining a registrable qualification in Medicine, Midwifery, and Surgery. Every candidate when entering for the examination must produce a certificate that, after obtaining a registrable qualification, he has attended during a period of six months practical instruction in a laboratory, approved by the University, in the subjects of Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man. Every candidate must also produce evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction mentioned above) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*e*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council.[5] Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of methods of administration, which shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the Medical Superintendence of the Hospital generally; and in the case of a Medical Officer of the Royal Army Medical Corps a certificate from a principal Medical Officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to Infectious Diseases.

The examination extends over not less than four days, one of which is devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special out-door duties of a medical officer of health.[6] Candidates must answer questions in the following subjects: (1) Chemistry; (2) Meteorology and Climatology; (3) Sanitary Engineering and Architecture; (4) Bacteriology; and (5) Hygiene, Sanitary Law, and Vital Statistics. In connexion with this part of the examination candidates will be required to draw up a sanitary report upon the condition of dwelling-houses or other buildings selected for the purpose, and read plans, scales, sections, &c.

The examination consists of two parts, which may be passed separately or together. Part I. comprises the following subjects: Chemistry, Meteorology and Climatology, and Sanitary Engineering and Architecture. Part II. comprises the following subjects: Bacteriology, Hygiene, Sanitary Law, and Vital Statistics. The examination in each part will be oral and practical as well as written.

For the B.Sc. in Public Health, a candidate shall not be admitted unless he (*a*) shall have received the degrees of M.B., B.Ch., and B.A.O. at least one year previously; (*b*) shall have pursued an approved course of study in the Faculty of Medicine; and (*c*) shall have passed the prescribed examination. In addition to D.P.H. course the candidate will be required to take up (1) a Special Course of Pathology; (2) Bacteriology; and (3) Advanced Course in Hygiene. Each of these courses lasts three months.

University of Belfast.—A Diploma in Public Health is given by examination to every candidate, who must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diplomas, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.[7] He must also produce evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction mentioned above) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British Dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council.[8]

After obtaining a registrable qualification every candidate must produce evidence that he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.[9] The examination must have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

Examinations.—One examination will be held yearly and will consist of two parts. Candidates may present themselves for either part separately, or for both parts together at their option. The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects: Principles and methods of volumetric and gravimetric chemical analysis and their application to the analysis of air, water, milk, butter, beverages (alcoholic), foods, &c., ventilation, warming, water-supply, and drainage. Conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of drinking water. Elements of meteorology and climatology. Building construction in relation more particularly to dwellings, hospitals, and schools. The disposal and purification of sewage and the

[5] The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence of having received instruction in the practical duties and routine of a medical officer of health, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. It is provided also that the period of six months may be reduced to a period of three months, which shall be distinct and separate from the period of laboratory instruction, in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school

[6] The rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890.

[7] Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school.

[8] The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates. A candidate who shall have produced evidence that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British dominions, and having a population of not less than 15,000, may be exempted from the requirements of these regulations

[9] Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence. These regulations as to study do not apply to medical practitioners registered or entitled to be registered on or before Jan. 1st, 1890.

disposal of refuse. The general principles of sanitary engineering. Disinfectants. Methods of bacteriological investigation and analysis. Pathology of infection and of the diseases of animals transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise generally the following subjects:—Laws and statutes relating to public health. Model By-laws of the Local Government Board. Sanitation of dwellings, schools, factories and workshops; and of villages and towns. Inspection of slaughter-houses, cow-sheds, &c. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases, both of temperate and tropical climates. The methods applicable to the medical investigation of epidemics. Effects of overcrowding on health, also those of vitiated air, impure water, polluted soils, and of bad or insufficient food. Unwholesome trades and occupations and the resulting diseases. Nuisances injurious or dangerous to health. Relations of season and climate to health. The principles and methods of vital statistics in relation to public health. All candidates will be examined in the provisions of the statutes relating to public health in Ireland, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, when applying for admission to the examination, he give notice of his desire and indicate the special law he proposes to offer.

The examination in 1911 will begin on July 2nd. Candidates must lodge their names and pay the prescribed fees at the secretary's office on or before June 14th. The certificates of study required by the regulations must be produced before admission to the examination. The fee prescribed for each part of the examination is 1 guinea, and cannot be returned to any candidate who fails to present himself; but he will be entitled without an additional fee to be a candidate on one subsequent occasion.

Royal College of Physicians of London and the Royal College of Surgeons of England.—The following are the regulations for obtaining the Diploma in Public Health: Section 1: The examination consists of two parts. The fee for each part is £6 6*s*.[10] A candidate intending to present himself must give 14 days' written notice to the Secretary, at the Examination Hall, Victoria Embankment, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I. of the examination on producing evidence of being at least 23 years of age, and to Part II. on producing evidence of being at least 24 years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England during a period of six months; and (3) of being at least 23 years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having been associated day by day in the duty, routine and special, of Public Health administration during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Par. 2 for Part I.) under the supervision of a medical officer of health who fulfils certain conditions which can be ascertained on application to the secretary[11]; (2) of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, after obtaining his registrable qualification in Medicine, Surgery, and Midwifery; and (3) of being at least 24 years of age.

[10] On and after July 1st, 1911, the fee for each part will be raised to £10 10*s*. for those candidates only who are not Diplomates of the Royal Colleges.

[11] Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Regulation 2) in the case of any candidate who produces evidence that after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration given by a teacher or teachers in the department of public health of a recognised medical school.

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons of Glasgow.—All candidates for the Diploma in Public Health must have been qualified for at least one year. Those qualified before 1890 do not require to produce evidence of attendance on any special courses. All other candidates must have attended, after qualifying, six months' practical instruction in a recognised laboratory or laboratories, and must have studied for six months the duties of outdoor sanitary work under the medical officer of health of a county or large urban district or a medical officer of health who is also a teacher of Sanitary Science in a Medical School, or a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps District or command. There are two examinations, and candidates may enter for both at one period or for either separately. The First Examination includes (*a*) Laboratory Work (Chemistry and Bacteriology), (*b*) Physics and Meteorology; and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Written and Oral Examinations on Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of 3 guineas is payable by rejected candidates for either examination. The examination is held twice yearly, in May and October. The published regulations provide detailed synopses of the subjects of examination. The Registrar for Edinburgh is Mr. James Robertson, solicitor, 54, George-square, and for Glasgow Mr. Alexander Duncan, LL.D., 242, St. Vincent-street.

Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland.—Stated examinations for the Diploma in Public Health are held in the months of February, May, July, and November. A special examination for the diploma may, at the discretion of the Committee of Management (except during the months of August and September), be obtained on payment of £15 15*s*., in addition to the ordinary fees mentioned below, and on giving notice at least one fortnight before the date of the proposed examination. Every candidate for the Diploma in Public Health must be a registered medical practitioner. (Candidates registered or entitled to be registered prior to January, 1890, are exempt from the rules as to study.) He must subsequently to qualification (1) receive six months' laboratory instruction in Chemistry, Bacteriology, and the Diseases of Animals transmissible to man; and (2) during six months practically study outdoor sanitary work under a medical officer of health and shall as an additional requirement attend a hospital for infectious diseases. Candidates are examined on four days, commencing on the first Monday of February, May, and November. Each candidate must return his name to the secretary of the Committee of Management under the Conjoint Scheme two weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. The fee for the examination is £10 10*s*. The examination for the Diploma in Public Health comprises the following subjects:—Hygiene, Chemistry, Meteorology and Climatology, Engineering, Vital Statistics, Sanitary Law, and Bacteriology. For further particulars apply to Alfred Miller, Secretary, Committee of Management; Office, Royal College of Physicians, Dublin.

DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without the special licence; but it is of eminent advantage to take the L.D.S., otherwise few dental appointments at general or special hospitals or dispensaries are available, and, what is still more important, the manual dexterity requisite for the successful practice of dentistry can only be gained by long and careful training; and, this having been attained, it is but little trouble to pass the special examinations. The subjects beyond those included in the general qualification are—Dental Anatomy and Physiology (Human and Comparative), one course;

a separate course of Dental Histology, including the preparation of microscopical sections; Dental Surgery, one course; a separate course of Practical Dental Surgery; a course of not less than five lectures on the Surgery of the Mouth; Dental Mechanics, one course; a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns; Dental Metallurgy, one course; a course of Practical Dental Metallurgy; Practice of Dental Surgery at a recognised school, two years, and a certificate of having been engaged during a period of not less than two years in acquiring a knowledge of Dental Mechanics (this may be obtained by apprenticeship to a duly qualified dental practitioner or in the mechanical department of a recognised dental hospital). The Dental Schools in London are the Royal Dental Hospital of London, the National Dental Hospital, and Guy's Hospital Dental School. Most of the large provincial towns have now dental hospitals. A convenient arrangement by which the M.R.C.S., L.R.C.P., and L.D.S. can be taken is as follows:—The Preliminary Examination in General Education having been passed the student should commence his mechanical training at a dental school or with a qualified dentist and register as a dental and medical student. (This instruction, however, may be taken prior to the date of registration as a dental student.) During the mechanical tuition the student should receive instruction in Chemistry and Physics, together with Biology, and should pass the First Professional Examination for the Conjoint Diploma during his first year. He should then obtain instruction in Pharmacy and, having passed the examination, should complete his work for the First Professional Dental Examination and pass this at the end of his second year. On the completion of the mechanical training the student should join the general and dental hospitals and at the expiration of 18 months at the general hospital should pass the Second Examination for the Conjoint Diploma. The Final Examination for the L.D.S. can be taken at the end of two years from joining the hospital. The student during these two years will have been attending simultaneously both the general and dental hospitals. During the remainder of his time he should devote himself to Surgery, Medicine, Midwifery, &c., in which subjects he may be examined at the expiration of the required time from the passing of the Second Examination. When time is not a great object, a better course is to join only the general hospital at the completion of the mechanical tuition, and complete the Second Examination for the Conjoint Diploma and also his "Dressing" and "Clerking" appointments before commencing his surgical training at the Dental Hospital. The best course, however, is entirely to finish the curriculum for the M.R.C.S. and L.R.C.P. and then take the special Dental work. The regulations for the Dental Licence of the Royal Colleges of Ireland and Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow are very similar to those of the English College. The L.D.S. can also be obtained alone.

The Registration of Dental Students is carried on at the Medical Council Office in London in the same manner as the existing registration of medical students, and subject to the same regulations as regards Preliminary Examinations. Candidates for a diploma in Dental Surgery must produce certificates of having been engaged during four years in professional studies and of having received two years' instruction in mechanical dentistry. The two years of instruction in mechanical dentistry, or any part of them, may be taken by the dental student either before or after his registration as a student, but no portion of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

It is now necessary for anyone practising Dental Surgery in this country to be on the Register and no foreign qualifications are admitted.

The Royal College of Surgeons of England grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have registered as dental students after Jan. 1st, 1897. Candidates are required to pass three examinations: the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination. I. Preliminary Science Examination.—Before admission to this examination the candidate must produce a certificate of having received instruction (which may be taken prior to the date of registration as a dental student) at a recognised institution in Chemistry, Physics, and Practical Chemistry. The examination consists of these subjects and is identical with Part I. of the First Examination of the Examining Board in England. II. The First Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of mechanical dentistry, under the instruction (which may be taken prior to registration as a dental student) of a competent practitioner or under the direction of the superintendent of the mechanical department of a recognised dental hospital. 2. Of registration as a dental student by the General Medical Council. 3. Of having attended at a recognised Dental Hospital and School (*a*) a course of Lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of Lectures on Dental Mechanics; and (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns. Candidates may present themselves for the First Professional Examination on production of the required certificates. The Examination consists of Part I. (Mechanical Dentistry) and Part II. (Dental Metallurgy), the examination in Dental Metallurgy being by written paper. The parts may be taken together or separately. III. The Second Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; (*e*) a course of not less than five lectures on the Surgery of the Mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery; (*f*) a course of Dental Materia Medica; and (*g*) a course of Dental Bacteriology. 3. Of having attended at a recognised dental hospital or in the dental department of a recognised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. The lectures on Surgery and Medicine must be attended after the completion of the courses of lectures on Anatomy and Physiology. 5. Of having performed Dissections at a recognised medical school during not less than 12 months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery for twelve months during the ordinary sessions. 7. Of being 21 years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. All students joining the Dental Hospitals after Oct. 1st, 1909, will be required to attend a course of practical instruction in the anæsthetics in common use in the practice of Dental Surgery. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of: Part I., General Anatomy and Physiology, General Surgery and Pathology; Part II., Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination in Part I. comprises General Anatomy and Physiology, General Pathology and Surgery, and in Part II., Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries and may be required to prepare and fill cavities or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Candidates may take the two parts of the examination together or separately. Candidates must pass Part I. before proceeding to Part II. If they fail in Part I. they are not allowed to proceed with Part II. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a

University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination for any degree or qualification in medicine or surgery registrable under the Medical Act of 1886. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and Universities above mentioned. The fee for the diploma is 20 guineas and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional Examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March, or April, July, and October in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give 21 clear days' notice of their intention to present themselves for examination.

Royal College of Surgeons, Edinburgh.—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. D. L. Eadie, Clerk to the Royal College of Surgeons, at 54, George-square, Edinburgh. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, with Laboratory Instruction, one course of six months; Physics, with Laboratory Instruction, three months; Physiology, with Laboratory Instruction, one course of six months; Surgery, including Surgical Pathology, one course of six months; Medicine, including Medical Pathology, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction on Surgery and Medicine, twelve months. These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), with Practical Dental Histology, three months; Dental Surgery and Pathology (not less than 20 lectures), with the Materia Medica and Therapeutics applicable to Dental Surgery, three months; Dental Mechanics (not less than 12 lectures), Theoretical and Practical, with Dental Metallurgy, three months—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Practical instruction in Mechanical Dentistry from a registered Dentist, or in the Mechanical Department of a recognised dental hospital and school, as apprentices or otherwise, either before or after registration, for *three* years. Certificates of attendance on such of these courses as may be respectively required will entitle candidates to appear either for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the required courses. The examination embraces (1) Chemistry and Physics; and (2) Anatomy and Physiology. The fee is £5 5*s*. for the complete examination and £3 3*s*. is payable for each division. In all cases of rejected candidates the fee for re-entry is £3 3*s*. Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is 21 years of age, and must pay a fee of £10 10*s*., for re-entry £5 5*s*. The examination embraces (1) Surgery and Medicine; and (2) the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Materia Medica, Dental Mechanics and Dental Metallurgy, with a practical as well as the written and oral examinations in the subjects of Dental and Oral Surgery, Pathology, and Mechanics. The candidate will be tested in the Treatment of Dental Diseases, in Operative Dentistry, the Administration of Anæsthetics, Orthodontics, and in Prosthetic and Mechanical Dentistry. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations or other recognised examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £15 15*s*. payable for the dental diploma. Fees and schedules must be lodged not later than one week before the examination with Mr. D. L. Eadie, 54, George-square, Edinburgh, Clerk to the College.

Royal Faculty of Physicians and Surgeons of Glasgow.—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh, but embrace Dental Bacteriology. Candidates can enter for the First Examination in three divisions, the first embracing Physics and Chemistry, the second Dental Metallurgy and Dental Mechanics, and the third Anatomy and Physiology. The examination in Dental Mechanics is practical; and there is at the Final Examination an examination in Practical Dentistry conducted in a dental hospital.

Royal College of Surgeons in Ireland.—Candidates for the Licence in Dental Surgery are required to pass two professional examinations, and to produce the following certificates before admission to the several examinations:—

First Dental Examination.—(A) Of having attended courses of instruction in the following subjects at an institution recognised for the purpose: (*a*) Theoretical Chemistry (six months); (*b*) Practical Chemistry, including Metallurgy (three months); (*c*) Physics (six months). The courses for these certificates need not be completed within one year, nor need they run concurrently; and they may be commenced or attended before the candidate registers as a medical or dental student. (B) 1. Of having passed a recognised Preliminary Examination in general education, and of having been registered as a medical or dental student by the General Medical Council. 2. Of having, subsequently to registration as a dental or medical student, attended courses of instruction in the following subjects at a recognised school of medicine: (*a*) Anatomy Lectures. (*b*) Dissections with Demonstrations (the candidates must dissect the head and neck three times) (12 months). (*c*) Physiology, including Dental Physiology. Lectures (six months). (*d*) Practical Physiology and Histology, including Dental Physiology and Histology, Human and Comparative (three months).

Final Dental Examination.—1. Of having been engaged during a period of two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist, or under the direction of the superintendent of the Mechanical Department of a recognised Dental Hospital where the arrangements for teaching Mechanical Dentistry are satisfactory to the Council of the College. This instruction may be commenced or attended before the candidate registers as a medical or dental student. 2. Of having passed the First Dental Examination. 3. Of having attended, at institutions recognised by the College for the purpose, the following courses of instruction: (*a*) Dental Surgery and Pathology, Orthodontia, and the Materia Medica and Therapeutics applicable to Dental Surgery. Lectures. Two courses. (*b*) Dental Mechanics. Lectures. Two courses. (*c*) Dental Anatomy. Lectures. One course. (*d*) The practice of a Dental Hospital, or of the Dental Department of a General Hospital. Two years.

4. Of having attended Clinical instructions at a recognised General Hospital during the ordinary teaching sessions (nine months). 5. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a medical or dental student. One year's *bonâ fide* apprenticeship with a registered dental practitioner, after being registered as a medical or dental student, may be counted as one of the four years of professional study. 6. Of being 21 years of age. All certificates of instruction and evidences of age and registration shall be submitted at least seven days before the commencement of the examination to the Registrar of the College.

In the First Dental Examination candidates will be examined in (A) Physics and Chemistry, including Practical Chemistry and Metallurgy. (B) Anatomy, Physiology, and Histology—General and Dental. All the subjects may be passed at the same time, or they may be passed in two groups, (A) and (B). Before presenting themselves for examination in either group, candidates must have attended the required courses of instruction in the subjects of the group for which they present themselves. The examination is partly written, partly *vivâ voce*, and partly practical.

In the Final Dental Examination candidates will be examined in General Pathology, Medicine, and Surgery; Dental Surgery, and Dental Pathology, with the Materia Medica and Therapeutics applicable to Dental Surgery; Dental Mechanics and Metallurgy; Orthodontia. Candidates must pass in all the subjects at one examination. The examination is partly written, partly *vivâ voce*, and partly practical, and includes the examination of patients and the performance of dental operations. Candidates are required to provide their own instruments and gold for filling. The First Dental Examination will commence on the first Mondays in the months of February, May, and November. The Final Dental Examination will commence on the second Mondays in the months of February, May, and November. The fee for the Diploma in Dental Surgery is 20 guineas, and is payable in the following manner, viz., First Dental Examination, Part (*a*), each admission, £3 3*s*.; Part (*b*), each admission, £4 4*s*.; Final, each admission, £5 5*s*.; amount payable before grant of Diploma, £8 8*s*.; total, £21. Fees for re-examination will not be allowed to count as part of the fee of £21 payable for the Diploma. Fees will not be refunded under any circumstances. Candidates must pay the fees for examinations from which they are exempted, unless when such exemptions have been granted in virtue of examinations passed before the Conjoint Board in Ireland.

University of Birmingham.—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that the students may fully qualify themselves for the Dental diploma (L.D.S.) of this and other universities and licensing bodies. There is a special and well-equipped Dental Museum and Laboratory. An Entrance Exhibition, value £37 10*s*., is awarded annually at the commencement of the winter session. The following are the regulations for Degrees in Dentistry:—1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees. 3. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. 4. *A*. In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Elementary Biology, (*d*) Anatomy and Practical Anatomy, and (*e*) Physiology and Practical Physiology. *B*. That he has attended the following courses and passed the class examinations in each of these subjects: (*f*) One Special Course of Lectures on Medicine, (*g*) One Special Course of Lectures on Surgery, and (*h*) Pathology and Bacteriology. *C*. That he has attended courses and passed the class examinations in: (*k*) Dental Histology and Patho-Histology, (*l*) Comparative Dental Anatomy, and (*m*) Dental Surgery and Prosthetic Dentistry. *D*. That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. 5. The Final Examination will deal with the subjects in Classes *C* and *D*. 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Dental Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

University of Bristol.—Candidates for the degree of Bachelor of Dental Surgery must be not less than 21 years of age and shall have pursued the courses prescribed by University regulations during not less than five years, of which three shall have been passed in the University, and shall have been registered as dental students by the General Medical Council. All candidates for the degree of B.D.S. are required to satisfy the examiners in the several subjects of four examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination. The First Examination: The subjects are Chemistry, Physics, and Zoology, and the curriculum extends over one year. The Second Examination: The subjects are Dental Mechanics, Dental Metallurgy, and Dental Materia Medica, and the candidate shall produce evidence of having served for two years an approved pupilage in Dental Mechanics. The Third Examination: The subjects are Anatomy, Physiology and Histology, Dental Anatomy, and Dental Histology. The Final Examination: The subjects are Medicine and Surgery, Dental Surgery (including Prosthetics), Operative Dental Surgery, and Dental Bacteriology. Degree of Master of Dental Surgery: Candidates shall be Bachelors of the University, shall present a Dissertation on some subject of Dental Surgery to be approved by the Examiners, and pass an examination in Dental Surgery. Diploma in Dental Surgery: Candidates need not be undergraduates, but shall be registered dental students before being admitted to any professional examination; the curriculum extends over four years. A two years' pupilage in Mechanical Dentistry is required, and four examinations must be passed the subjects of which differ only from those of the B.D.S. in that Zoology is not required for the First Examination, and Medicine is not required for the Final Examination. Candidates who are already registered medical practitioners shall be further exempted from study and examination in Physics and Chemistry, Anatomy, Physiology and Histology, Medicine, and General Surgery.

University of Durham.—A Licence in Dental Surgery is granted. The conditions are as follows:—Every candidate for the Licence must pass the necessary examination required by the General Medical Council for registration as a dental student. There are four Examinations—viz., First, Second, Third, and Final. The subjects of the Examinations are:—*First:* (*a*) Chemistry; and (*b*) Physics. *Second:* (*a*) Dental Mechanics, Theoretical and Practical; (*b*) Dental Metallurgy; and (*c*) Dental Materia Medica. *Third:* (*a*) Anatomy; (*b*) Physiology and Histology; and (*c*) Dental Anatomy and Dental Histology. *Final:* (*a*) Surgery; (*b*) Dental Surgery, including Prosthetics and Orthodontia; (*c*) Operative Dental Surgery, Practical Examination; and (*d*) Dental Pathology and Bacteriology. A candidate before presenting himself for examination is required to furnish certificates of instruction in the following subjects, attended after registration as a dental student at recognised University Colleges, Medical or Dental Schools:—*First Examination:* Chemistry, lectures and practical work (nine months); and Physics, lectures and practical work (nine months). *Second Examination:* Dental Mechanics (not less than 20 lectures); Dental Metallurgy (not less than 12 lectures and 30 hours practical work); and Dental Materia Medica (not less than 12 lectures). *Third Examination:* Anatomy (six months); Dissections (12 months); Physiology (six months); Histology (three months); Dental Anatomy and Physiology (a course of not less than 20 lectures); and Dental Histology (not less than 12 lectures). *Final Examination:* Dental Hospital Practice (two years); General Hospital Practice (nine months); Medicine Lectures (six months); Surgery Lectures (six months); Dental

Surgery and Pathology (a course of not less than 20 lectures); Dental Bacteriology (not less than 12 lectures); Operative Dental Surgery (not less than 12 lectures); and Anæsthetics (a course of not less than one month).

Before admission to the Final Examination each candidate must furnish evidence (1) of having attained the age of 21 years, (2) of having undergone a three years' pupilage in Mechanical Dentistry with a registered dentist, and (3) of having been engaged in professional study for at least four years subsequent to registration as a dental student. He must also sign such declaration as the University may determine, binding himself not to advertise for professional purposes. The examinations will be held concurrently with the medical examinations, and the fees payable by candidates are as follows: First Examination, £2 10*s.*; Second Examination, £2 10*s.*; Third Examination, £3 10*s.*; Final Examination, £3 10*s.*; fee for Licence, £3; total, £15. For re-examination: First Examination, £1 10*s.*; Second Examination, £2; Third Examination, £2; Fourth Examination, £2. The practical examinations in dentistry will be conducted at the Newcastle Dental Hospital.

University of Leeds.—The degrees in Dental Surgery are Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D.). All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation examination, to have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I. and II. of the first examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the University. No candidate will be admitted to the degree who has not attained the age of 21 years on the day of graduation. All candidates are required to have passed the following examinations: the first examination, the second examination, and the final examination. Each examination will include practical work in the subjects offered. All candidates shall be required, before presenting themselves for examination, to furnish to the registrar certificates testifying that they have attended the prescribed courses of instruction in accordance with the regulations of the University in each of the subjects which they offer, and that they have fulfilled the other requirements of the ordinance and regulations in respect of such examination. Candidates for the diploma in Dental Surgery (L.D.S.) are required to present certificates showing that they have attained the age of 21 years, that they have attended courses of instruction approved by the University, extending over not less than four years, and that they have completed a pupilage of three years, two of such years at least having been taken before the First Professional examination. Candidates are required to satisfy the examiners in the several subjects of the following examinations: A preliminary examination in Arts; a preliminary examination in Science; the First Professional examination; and the Final examination. The classes in the Department of Dentistry will begin on Oct. 1st. The instruction in the Preliminary subjects of Chemistry, Physics, and Biology will be given at the University in College-road. The classes in the other subjects and the systematic courses in Dental subjects will be held in the School of Medicine of the University in Thoresby-place. The systematic instruction in the School of Dentistry will be given by the following:—Anatomy: Professor J. K. Jamieson. Physiology: Professor de B. Birch. Pathology: Professor A. S. Grünbaum. Medicine: Professor T. W. Griffith. Surgery: Professor R. L. Knaggs. Dental Surgery: Mr. A. G. G. Plumley. Operative Dental Surgery: Mr. T. S. Carter. Dental Anatomy and Physiology: Mr. A. Alan Forty. Dental Mechanics: Mr. C. Rippon. Dental Metallurgy: Mr. W. Lowson. Dental Materia Medica: Mr. J. H. Gough. The clinical instruction will be given in the Dental Department of the Leeds Public Dispensary, which is recognised by the University and by the Royal College of Surgeons. Applications for the prospectus should be made to the Dean of the Faculty of Medicine.

University of Liverpool (Liverpool Dental Hospital and School of Dental Surgery).—The University grants a diploma in Dental Surgery (L.D.S.) and degrees in Dental Surgery (B.D.S. and M.D.S.). The courses of systematic instruction are given in the University buildings, five minutes' walk from the Dental Hospital. The two institutions are now closely associated and the management of the curriculum is in the hands of the Board of Dental Studies. This school offers advantages to students which are not excelled anywhere for their practical nature. On Jan. 16th, 1909, the Earl of Derby laid the foundation stone of a new Dental Hospital in Pembroke-place, immediately opposite the University and Royal Infirmary, and covering a site of 672 square yards. The new Dental Hospital was opened in March, 1910, equipped in each department with every modern accessory. The ground floor contains a large waiting-hall, examination room, extraction and anæsthetic rooms, with special waiting and recovery rooms for each, staff room, and special room for nurses. A large lecture hall with library and museum, prosthetic room adjoining a lofty and well lighted laboratory divided into special rooms to accommodate over 30 pupils, and smaller laboratory for advanced students, plaster and smelting rooms, are situated on the first floor. The whole of the top floor (470 square yards) is devoted to conservation work, and lighted entirely from the north, and contains 50 pump operating chairs, each provided with water-flushed spittoons, brackets, and electric light. Provision is also made for the use of electric motors. Portions are reserved for porcelain inlay work, orthodontia, and the use of the demonstrator. The students' room, with cloak-room and lavatories, is placed in the mezzanine immediately below the conservation (filling) room, and provision is made in the basement for cycles. The whole of he building is heated by hot-water pipes and radiators, and specially ventilated and lighted throughout by electricity. The laboratory is in charge of a skilled dental mechanic under the supervision of the Warden, and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lecture at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes 12 honorary Dental Surgeons, a Demonstrator, six Anæsthetists, two House Surgeons, and a Curator. Fees for two years' hospital practice, £21. Apprenticeship.—A limited number of apprentices are admitted annually. Fees for three years, £105. Further information may be had from the Warden, Mr. W. H. Gilmour. The various medical and dental lectures are given at the University of Liverpool. The Anatomical Department has been removed to a new building, comprising a spacious dissecting room and a museum which contains an excellent collection of skulls illustrative of human and comparative dental anatomy. Fees: The composition fees are as follows: Diploma course (L.D.S.): Composition fee £58 10*s.*, for diploma course of other licensing bodies £61 10*s.*, payable in two equal instalments, the first on entry, the second 12 months later. Two years' instruction in Mechanical Dentistry (pupilage) and two years' Dental Hospital Practice (combined) £100. Degree course (B.D.S.): £67 10*s.* for all lectures (including Chemistry, Physics, and Zoology) in three instalments. Two years' dental hospital, £21; general hospital practice, £10 10*s.*; three years' mechanical instruction (pupilage), £105.

University of Manchester.—In the University of Manchester the Dental Department forms an integral part of the Faculty of Medicine. This contains a series of laboratories, lecture rooms, and museums which will bear comparison with those of any other school in the kingdom, and the fullest opportunities for study are offered to students preparing for any of the professional examinations. Instruction adapted to the requirements of students preparing for the B.D.S. Degree and the Dental Diplomas of the University, the Royal College of Surgeons of England, and of other licensing bodies is given during the Winter and Summer sessions both at the University and at the Dental Hospital of Manchester in Oxford-street. The required general hospital practice is taken at the Manchester Royal Infirmary. Women students are admitted to the classes in the Dental Department and for them a separate laboratory for Practical Anatomy and common rooms are provided. The composition fee for candidates for the University degree of Bachelor of Dental Surgery is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the University Diploma in Dentistry is 55 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the L.D.S. of England is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. Students who have already served their apprenticeship with a private

practitioner, and who propose to complete the final portion of their attendance at the University and at an approved dental hospital, will be required to pay the composition fee in two equal instalments at the commencement of the first and second years of studentship. The payment of any of the above composition fees will entitle the student to attend all the classes in the following list which are required for their respective examinations. The composition fee does not include the hospital fees, the examination fees, the fee for the conferment of the degree or the diploma, the registration fee, nor the fees for chemicals and chemical apparatus (£1 1*s*.).

National University of Ireland.—This University grants the degrees of Bachelor of Dental Surgery and a degree of Master of Dental Surgery. A student may not be admitted to the Degree of Bachelor of Dental Surgery unless a period of not less than four years shall have elapsed from the date of his matriculation, during which period he must have pursued an approved course of study of not less than nine terms. For the degree of Bachelor of Dental Surgery candidates must pass four examinations, the first two being the same as those for the first and second examination in Medicine. The subjects of the third examination are Dental and Practical Pathology, Dental Surgery, and Dental Medicine, the subjects of the fourth being Dental Surgery and Pathology, Dental Mechanics, Operative Dentistry, Orthodontia, and Dental Materia Medica. A candidate for the degree of B.D.S. must produce evidence of apprenticeship to a registered dentist for a period of two years. A portion of or the entire period may be served before commencing study for the degree of B.D.S., but no portion so taken prior to commencement of study shall count as part of the four years of Dental Study. The degree of Master of Dental Surgery will not be granted until three years after the B.D.S. has been obtained.

TEACHING INSTITUTIONS IN DENTISTRY.

See also under Universities of Birmingham, Leeds, Liverpool, and Manchester above.

LONDON.

Royal Dental Hospital of London and School of Dental Surgery, Leicester-square.—The school provides the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 5 P.M., there being one staff for the morning and another for the afternoon of each day. Pupils are received for the mechanical training recognised by the curriculum. The demonstrators at the commencement of each session give a course of lectures on Operative Dental Surgery. The five house surgeoncies are held for six months each and are open to all qualified students. The lecturers, in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the mechanical laboratory. There are two Entrance Scholarships in Chemistry and Physics of the value of £50 and £25 respectively. One Entrance Scholarship in Dental Mechanics and Metallurgy value £25, open to pupils of the Hospital only. One Entrance Scholarship of £25 in Dental Mechanics, open to pupils of private practitioners. The Saunders Scholarship awarded to second year students. The Storer Bennett Research Scholarship for Scientific Research in any branch of Dental Surgery, value £50, is awarded triennially. The Alfred Woodhouse Scholarship of £35 and the Robert Woodhouse Prize of £10 for Practical Dental Surgery. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses, at the end of the summer and winter sessions. Consulting Physician: Sir Richard Douglas Powell, Bart. Consulting Dental Surgeons: Mr. T. Arnold Rogers, Mr. Morton Smale, and Mr. C. S. Tomes, F.R.S. Dental Surgeons: Mr. J. F. Colyer, Mr. W. H. Dolamore, Mr. G. Hern, Mr. J. G. Turner, Mr. N. G. Bennett, Mr. D. P. Gabell, Mr. A. Hopewell Smith, and Mr. H. Austen. Assistant Dental Surgeons: Mr. R. McKay, Mr. W. W. James, and Mr. F. Coleman. Anæsthetists: Dr. Dudley Buxton, Dr. R. J. Probyn-Williams, and Mr. H. Hilliard. Demonstrators: Mr. A. T. Pitts, Mr. L. A. Harwood, Mr. R. M. Tickling, Mr. W. D. Southern, Mr. J. F. Gow, and Mr. G. J. Harborow. Lecturers:—Dental Anatomy and Physiology (Human and Comparative): Mr. A. Hopewell Smith. Dental Surgery and Pathology: Mr. J. G. Turner. Operative Dental Surgery: Mr. W. H. Dolamore. Dental Mechanics: Mr. D. P. Gabell. Metallurgy in its application to Dental Purposes: Mr. P. Ellis Richards. Dental Bacteriology: Mr. Howard Mummery. Dental Materia Medica: Mr. H. A. Austen. Chemistry: Mr. P. Ellis Richards. Physics: (vacant). Anæsthetics: Dr. Dudley Buxton. During the sessions the surgeons of the day will give demonstrations at stated hours. The house surgeons attend daily while the hospital is open. Fee for two years' hospital practice required by the curriculum, including lectures, £53 3*s*. in one payment, or £55 13*s*. in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £60. Both hospitals can be attended simultaneously. For the lectures in Chemistry and Physics for the Preliminary Science Examination £10 10*s*. The fee for the instruction in Dental Mechanics and the two years' hospital practice required by the curriculum is £150 if paid in one instalment, or 150 guineas if paid in three equal instalments. The fee for tuition in Dental Mechanics is 50 guineas per annum; for one year's hospital practice £21. The Dean attends at the hospital every Thursday morning from 9.45 to 11 o'clock, or he can be seen at other times by appointment. Letters to be addressed—The Dean, 32, Leicester-square. The Winter Session opens on Oct. 3rd.

National Dental Hospital and College.—Corner of Great Portland and Devonshire-streets, W.—Consulting Surgeon: Sir Victor Horsley. Consulting Dental Surgeon: Mr. Sidney Spokes. Visiting Physician: Dr. James Maughan. Visiting Surgeon: Mr. E. W. Roughton. Dental Surgeons: Mr. K. W. Goadby, Mr. H. R. Pring, Mr. A. E. Relph, Mr. H. Creemer Cooper, Mr. H. W. Turner, and Mr. E. C. Sprawson. Assistant Dental Surgeons: Mr. F. St. J. Steadman and Mr. F. R. Smyth. Assistant Dental Surgeon for Radiology: Mr. C. A. Clark. Anæsthetists: Mr. H. P. Noble, Mr. C. J. Ogle, Mr. Vivian B. Orr, Dr. J. Maughan, Mr. P. H. Parsons, and Mr. R. E. Delbruck. Lecturers:—Dental Anatomy and Physiology: Dr. J. W. Pare, Tuesdays and Thursdays, 5 P.M., in October, November, and December. Dental Metallurgy: Mr. Hugh Candy, Tuesdays, 5 P.M., in January, February, and March, and May, June, and July. Dental Mechanics: Mr. H. W. Turner, Wednesdays, 5.30 P.M., in May, June, and July, and October, November, and December. Dental Materia Medica: Mr. F. R. Smyth, Tuesdays, 6 P.M., October, November, and December. Dental Surgery and Pathology: Mr. H. J. Relph, Thursdays, 5 P.M., during January, February, and March. Bacteriology of the Mouth: Mr. K. W. Goadby, Tuesdays, 4 P.M., during May, June, and July. Practical courses to comply with the R.C.S. curriculum are also held. The hospital is lighted throughout by electricity and warmed and ventilated by approved methods. Clinical Lectures and Demonstrations are given from time to time, and each student on entering passes through a preliminary course under a demonstrator. The stopping rooms have accommodation for 50 chairs. Dresserships in the extraction and stopping rooms are re-arranged every three months. Two Entrance Exhibitions, of the value of £40 and £20, are open for competition. Prizes are open for competition at the end of each course of lectures. Certificates of honour are also open in each class. The Rymer Medal for General Proficiency, value £5, is awarded annually to the most meritorious student; and the Ash Prize, value £3 3*s*., for a Thesis on a subject in Dental Surgery. Total fee for the Special Lectures and Hospital Practice required, 40 guineas. A composition fee covering the two years' mechanical pupilage and the two years' hospital practice required by the Royal College of Surgeons, £120. Single Courses: Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Mechanics, Dental Metallurgy, Bacteriology of the Mouth, Dental Materia Medica, Demonstration of Dental Mechanics, £5 5*s*. each. Hospital Practice to registered practitioners by special permission of Committee, 12 months, £15 15*s*. Information respecting the Hospital Practice and the College may be obtained from the Dean, Mr. Sidney Spokes, who attends at the Hospital, Great Portland-street, on Tuesday mornings.

Guy's Hospital.—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. *The Extraction Rooms:* A new Dental Out-patient Department has been provided. There

is ample accommodation for ordinary extractions and anæsthetic extractions, together with waiting- and retiring-rooms. Patients are admitted between 8.45 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such patients as are suitable for conservative treatment are transferred to the conservation room, taking with them a chart to indicate the treatment required. *The Conservation Room:* This room is open from 9 A.M. till 5 P.M. It is now being reconstructed and when completed in October will afford accommodation for upwards of 100 dental chairs, with the necessary equipment of the most modern type, for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. The *Probationers' Laboratory* is supervised by two of the staff demonstrators, and instruction is given in operative dentistry on a "mannikin" to students during their first three months of study. Pupils in Dental Mechanics are received, and a graded, systematic, and full course of instruction, extending over two years, is carried out. The control and supervision of the *Pupils' Laboratory* is in the hands of the following staff: The Demonstrator of Dental Mechanics, Two Staff Demonstrators of Prosthetic Dentistry, Two Skilled Mechanics and their Assistants. Dental students have the opportunity of attending at this hospital the whole course of instruction required by the examining board for the L.D.S. Eng., viz., two years' pupilage in dental mechanics, the special lectures and practice of the Dental Department and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. Four Entrance Scholarships in Dental Mechanics of the value of £20 each are offered for competition annually, two in September and two in April, and prizes of the aggregate value of £47 are awarded for general proficiency and for skill in Practical Dentistry. A Dental Travelling Scholarship of the value of £100 is awarded every second year. The next award will be made in 1913. Dental students are eligible for admission to the Residential College and enjoy the privileges of students in the Medical School.

Staff.—Consulting Dental Surgeons: Mr. F. Newland-Pedley and Mr. W. A. Maggs. Dental Surgeons: Mr. Wynne Rouw, Mr. H. L. Pillin, Mr. M. F. Hopson, and Mr. J. B. Parfitt. Assistant Dental Surgeons: Mr. J. L. Payne, Mr. E. B. Dowsett, Mr. J. F. Pearce, and Mr. H. P. Aubrey. Demonstrators of Practical Dentistry: Mr. H. Chapman, Mr. H. C. Malleson, Mr. F. N. Doubleday, and Mr. C. A. Hodgson. Demonstrators of Prosthetic Dentistry: Mr. S. W. Charles and Mr. E. A. Tomes. Anæsthetists: Dr. H. F. Lancaster, Mr. C. J. Ogle, Mr. R. Davies-Colley, Dr. F. E. Shipway, Mr. H. M. Page, and Mr. T. B. Layton. Lecturers:—Dental Anatomy and Physiology: Mr. Hopson. Dental Surgery and Pathology: Mr. Wynne Rouw. Operative Dental Surgery: Mr. Parfitt. Dental Mechanics: Mr. Payne. Practical Dental Mechanics: Mr. Pillin. Dental Materia Medica: Dr. A. P. Beddard. Dental Bacteriology: Dr. Eyre. Dental Microscopy: Mr. Dowsett and Mr. Kennaway. Metallurgy: Dr. J. Wade. Practical Dental Metallurgy: Mr. Pearce. Curator of Dental Museum: Mr. Dowsett. Dean: Dr. Eason. Sub-Dean: Dr. Cameron.

London Hospital—This school is part of the London Hospital and Medical College. It provides a complete curriculum in all subjects for the L.D.S. Lecturers: Dental Surgery and Pathology:—J. Sim Wallace, M.D., D.Sc. Glasg., L.D.S. Eng. Operative Dental Surgery: George Northcroft, L.D.S. Eng., D.D.S. Mich. Dental Prosthesis: F. M. Farmer, L.D.S. Eng. Operative Dental Prosthesis: G. Paton Pollitt, L.D.S. Eng., D.D.S. Penna. Odonto-prosopic Orthopædics: Harold Chapman, L.D.S. Eng., D.D.S. Penna. Dental Histology: Evelyn Sprawson, M.R.C.S., L.R.C.P., L.D.S. Eng. Dental Anatomy: William Wright, M.B., D.Sc., F.R.C.S. Dental Bacteriology: William Bulloch, M.D. Dental Materia Medica: Otto Grünbaum, M.D., D.Sc., F.R.C.P. Dental Metallurgy (Theoretical and Practical): H. Candy, B.A., B.Sc. Instructor in Anæsthetics: R. J. Probyn Williams, M.D. Connected with the Medical College and Dental School are a Library, Athenæum, Clubs' Union, Athletic Ground, Dining Hall, and Students' Hostel. For prospectus and particulars apply to the Dean (William Wright, M.B., D.Sc., F.R.C.S.).

PROVINCIAL.

Devon and Exeter Dental Hospital, 24, Southernhay, West, Exeter.—Established 1880.—The hospital is open daily (Sundays excepted) and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M. Ackland; secretary, Mr. W. Alfred Hooker.

SCOTLAND.

The Incorporated Edinburgh Dental Hospital and School.—The Edinburgh Dental Hospital and School is located in a spacious and well-equipped building at 31, Chambers-street and offers special advantages to dental students. The General Courses required for the Dental Diploma may be taken in the Medical School of the Royal Colleges of Physicians and Surgeons or in the University schools. The hospital attendance and clinical instruction are taken at the Royal Infirmary. The University, Medical Schools, and Royal Infirmary are within three minutes' walk of the Dental Hospital. The special courses are taken in the hospital. The Dental Hospital practice, extending over two years, affords a student ample opportunity for a full acquaintance with every branch of dentistry. The hospital admits a limited number of indentured pupils. They receive their instruction in Mechanical Dentistry concurrently with the general and special courses. A premium of 60 guineas is payable with each such pupil. The practice and lectures of the hospital are recognised by, and qualify for, all the Licensing Boards. For the special classes, both theoretical and practical, required by dental students the directors have secured the services of an efficient staff of dental officers and lecturers. There will also be a course of demonstrations in Mechanical Dentistry. Students will receive instruction in Practical Dental Mechanics under the mechanician. The cost of the hospital outfit of instruments is included in the Dental Hospital fee of £31 10*s.* The minimum cost of classes and Diploma for the whole course of dental instruction amounts to £90 7*s.* Those students who desire to take a Medical and Surgical Diploma in addition to the L.D.S. have in this school admirable facilities for so doing. The triple qualification of the Royal College of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow is recommended. The minimum cost of the Professional Education Triple Qualification and Licence in Dental Surgery amounts to £169 7*s.* The mechanical department is large and airy and furnished with all modern tools and appliances. The winter session commences Oct. 2nd. The Museum is open to students for study. Further particulars can be obtained from the Dean, Mr. W. Guy.

Incorporated Glasgow Dental Hospital and School, 158, Renfrew-street and 15, Dalhousie-street, Garnethill, Glasgow.—The winter session will begin in October and the lectures will be delivered as follows. In Dental Mechanics on Tuesday and Thursday at 7 P.M., by Dr. Hugh McKay, and in Dental Metallurgy on Monday and Wednesday at 7, by Mr. W. Bruce Hepburn, L.D.S. Fee for each of the above courses of lectures, £3 3*s.* Lectures will also be delivered on the following subjects: Dental Surgery and Pathology, by Mr. J. Mason Noble; Dental Anatomy and Physiology, by Dr. W. Wallace; Dental Bacteriology, by Mr. J. F. Webster; Anæsthetics, by Dr. R. Home Henderson; Operative Technique, by Mr. Adam Cubie. The lectures and instruction at the Glasgow Dental Hospital and School are recognised by all the licensing bodies in the United Kingdom. The fees for two years' hospital practice are £15 15*s.* Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. The hospital is opened daily from 5 to 7 P.M. (Saturdays excepted). Students may only enrol during the months of April or October. Summer session begins in April. Winter session begins in October.

Glasgow Royal Infirmary (Dental Department).—Mr.

W. Taylor attends at the Royal Infirmary at 3.30 P.M. on Mondays, Wednesdays, and Fridays, and gives a course of instruction in Dental Surgery on these days. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry with Metallurgy, three months; Surgery, six months; Medicine, six months; Materia Medica. three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital. The winter session opens Monday, Oct. 18th.

ANCILLARY SCIENTIFIC INSTITUTIONS.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, London (including as integral parts the ROYAL COLLEGE OF SCIENCES, the ROYAL SCHOOL OF MINES, and the CITY AND GUILDS COLLEGE).—Mechanics and Mathematics: Professor J. Perry, F.R.S., Dr. A. R. Willis, Mr. J. Harrison, M.I.M.E., and Mr. H. Klugh, B.A. Zoology: Professor A. Sedgwick, F.R.S. Botany: Professor J. B. Farmer, M.A., F.R.S., Plant Physiology and Pathology: Professor V. H. Blackman, M.A., Sc.D. Technology of Woods and Fibres): Professor Percy Groom, M.A., D.Sc. Chemistry: Professor Sir Edward Thorpe, F.R.S., Professor H. E. Armstrong, F.R.S., Dr. M. O. Forster, F.R.S., Dr. J. C. Philip, M.A., Ph.D., D.Sc., and Dr. G. T. Morgan, D.Sc., A.R.C.S. Physics: Professors H. L. Callendar, F.R.S., and the Honourable R. J. Strutt, F.R.S., Dr. W. Watson, F.R.S., and Mr. A. Fowler, F.R.S. Geology: Professor W. W. Watts, F.R.S., and Dr. Cullis. Metallurgy: Professor W. A. Carlyle, A.R.S.M., M.I.M.M. Mr. W. H. Merrett, A.R.S.M., F.I.C., M.I.M.M. Mining: Professor S. H. Cox, A.R.S.M., M.I.M.M. Mr. L. H. Cooke, A.R.S.M., M.I.M.M. Civil and Mechanical Engineering: Professor W. E. Dalby, M.A. Mr. A. G. Ashcroft, M.I.C.E. Electrical Engineering: Professor T. Mather, F.R.S. Mr. G. W. O. Howe, M.Sc. The College reopens on Wednesday, Oct. 4th, 1911. Communications should be addressed to the Secretary, Imperial College, South Kensington, S.W.

ELECTRICAL STANDARDIZING, TESTING, AND TRAINING INSTITUTION, Faraday House, 62–70, Southampton-row, W.C.—Principal, Alexander Russell, M.A. Cantab, D.Sc. Glasg., M.I.E.E. Instructor in Electrical Machine Design: F. T. Chapman, B.Sc., A.M.Inst.C.E. Instructor in Chemistry: Mr. J. Thomas, B.Sc. Lond. Instructor in Mechanical Engineering: Mr. Walter H. Bell, A.M.Inst.C.E. This institution, in addition to its ordinary course of training in electrical engineering, which occupies four years, also arranges for special instruction in all branches of electricity either by private tuition or by a specially arranged course at the College or at the works of the companies with which it is associated. There are Entrance Scholarships of the value of 150 and 100 guineas. Particulars may be obtained on application to the Secretary, Faraday House, Southampton-row, W.C. Session begins Sept. 25th.

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—Chemistry and Physics: Professor Arthur W. Crossley, F.R.S. Botany: (vacant). Pharmaceutics: Professor Greenish. The session commences on Wednesday, Oct. 4th, on which day the inaugural address will be delivered. Medical students, or pupils intending to enter the medical profession, are admitted to the lectures and laboratory work in any or all the courses. Certificates of instruction in this school are received by the Conjoint Board of the Royal Colleges. Application for admission to the school, or for further information, may be made to the Dean, Professor Crossley, F.R.S., 17, Bloomsbury-square, London, W.C.

ROYAL SANITARY INSTITUTE (WITH WHICH IS INCORPORATED THE PARKES MUSEUM), 90, Buckingham Palace-road, S.W.—The objects of the Royal Sanitary Institute are to promote the advancement of sanitary science in all or any of its branches and to diffuse knowledge relating thereto. It was founded in 1876 and incorporated in 1888. Sessional meetings are held in London and in various provincial centres from time to time for the reading of papers and for discussions upon subjects connected with sanitary science, and lectures and demonstrations are arranged for sanitary officers; for army officers and professional men on food and meat inspection; for meat inspectors; for women health visitors and school nurses; and for school teachers. Examinations are held in London, and in provincial and colonial centres, and certificates of competency in sanitary knowledge are granted. The Parkes Museum, which is maintained by the institute, contains a great variety of the most approved forms of apparatus and appliances relating to health and domestic comfort. Professors and teachers of hygiene are allowed the use of the museum for demonstrations to their students on application to the committee. The museum is open daily free of charge from 9.30 A.M. to 5.30 P.M. and on Mondays to 8 P.M. There are also a large library of sanitary literature which contains, in addition to standard works on sanitary science, a collection of reports of medical officers of health over the whole country, and a reading room supplied with the principal sanitary periodicals, both home and foreign. The institute is under the patronage of the King, and the officers are: President, the Duke of Northumberland; chairman of council, Mr. H. Percy Boulnois, M.Inst.C.E.; treasurer, Colonel J. Lane Notter, R.A.M.C., M.A., M.D.; registrar, Mr. A. Wynter Blyth, M.R.C.S.; and secretary and director, Mr. E. White Wallis. The lecturers are Dr. C. Porter, Dr. J. A. Priestley, Dr. G. F. McCleary, Dr. A. Wellesley Harris, Dr. E. J. Steegmann, Dr. E. Petronell Manby, Professor H. R. Kenwood, M.B., Dr. C. J. Thomas, Dr. H. Meredith Richards, Colonel J. Lane Notter, R.A.M.C., Mr. J. Osborne Smith, F.R.I.B.A., Mr. W. C. Tyndale, M.Inst.C.E., Mr. J. E. Worth, M.Inst.C.E., Mr. J. Wright Clarke, Professor Henry Adams, M.Inst.C.E., Mr. C. Chambers Smith, Mr. Percy Griffiths, M.Inst.C.E., Mr. H. Percy Boulnois, M.Inst.C.E., Mr. Ainsworth Wilson, F.R.C.V.S., Mr. T. Dunlop Young, M.R.C.V.S., Mr. W. G. Barnes, M.R.C.V.S., Mr. W. Hunting, M.R.C.V.S., Dr. Eric C. Pritchard, Dr. A. Beresford Kingsford, Dr. Marian Hunter-Vaughan, and Miss E. Morris. For members the annual subscription is £2 2*s.* and for associates £1 1*s.*, but members and associates holding certain qualifications only pay half the ordinary rate of subscription.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.—The Royal Institute of Public Health, 37, Russell-square, W.C., was founded in the year 1886 with the object of obtaining the registration of public health diplomas and the further statutory requirement that all medical officers of health should possess such a qualification. In 1905 the Fellows and members of the Institute, now numbering nearly 2000, decided to create a central public health institution in London and have erected bacteriological, serological, and chemical laboratories in which researches of a public-health character are undertaken for municipal and other authorities and for private medical practitioners and the necessary training for obtaining public health diplomas is provided, together with a library, lecture room, and common room. The Royal Institute of Public Health is recognised by the University of London as a public educational institution, and its course of instruction for the diploma by the universities and other examining bodies of the United Kingdom. The council appointed four medical practitioners yearly who possess a Diploma in Public Health as Assistant Demonstrators, and who are desirous of obtaining a more extended knowledge of laboratory work in connexion with the duties of a medical officer of health. The Royal Institute of Public Health is a recognised place of research in connexion with the Beit Memorial Fellowships for Medical Research. The Institute is under the patronage of His Majesty the King, and the Right Hon. the Earl Beauchamp, K.C.M.G., is President. The teaching staff consists of—the Principal, Professor William R. Smith, M.D., F.R.S.Ed.; demonstrators of chemistry, Ernest Garratt, M.Sc., and Alan Stewart, D.Sc.; demonstrators of bacteriology, Dr. L. Rajchman and Dr. A. Distaso. Occasional lectures are given by eminent sanitarians. The Harben lecturer for 1911 was Professor Dr. P. Uhlenhuth and the Harben lecturer for 1912 is Professor Simon Flexner, M.D. New York.

THE BRITISH MEDICAL MAN ABROAD.

THE conditions of medical practice have much altered in this country of late, as we have been able to point out in THE LANCET during the past decade. Professional incomes in many places have been lowered seriously by the unfair tactics of so-called medical aid societies, and the position of servant to which some of these associations would reduce their medical officer is one that liberally educated gentlemen do not welcome with enthusiasm. Improvement has taken place, but recent developments of legislation seem likely to increase the severe struggle ahead. Again, the expenses of living have gone up for medical men as they have for all the middle and upper middle

classes of this country, while more money is required to secure the necessary medical degrees and diplomas owing to the lengthy curriculum and the more expensive equipment. These facts account, though only partially, for the increased number of medical men who having obtained British medical qualifications desire to settle abroad. Other factors at work are the spirit of adventure, the feeling that in a new country there is more elbow-room and more chances of getting out of the ruck, and the increased facilities of transport. Newspapers and books galore nowadays make us familiar with life in other lands, while trains and steamers will take us all over the world in a short time and at a comparatively small expense. For this reason or that, the number of medical men who make inquiry from us as to their legal and professional position in a foreign country continues to increase, and in the following columns we attempt to give the information.

Speaking generally, our colonies make it easy for medical men from home to practise there, but the same is not the case on the continent, where there is an obvious tendency towards protection. But in the colonies there are not many openings for practise except for those who are willing to "rough" it and work hard. In Canada there are outlying districts where a good start might, perhaps, be obtained; but it must be remembered that Canada possesses advanced medical schools and is a sparsely populated country as yet. In Australia and New Zealand the prospect for the British practitioner is not greater than that which faces him in Great Britain. The medical profession is, in fact, crowded in all places at home and abroad where the circumstances of practice are favourable, and many practitioners who have gone out from the mother country have had to leave the colonies unsuccessful, or have been very hard pushed to make both ends meet. The graduates of the colonial universities every year tend to more than meet the usual vacancies. It used to be generally believed that, even where there was a large supply of general practitioners in the big colonial towns, there would still be good openings for men who have specialised in such branches of practice as the treatment of eye and ear diseases. This is partially true. There are openings of which good men can take advantage. But as a rule the openings in the colonies for newcomers are in country districts where the medical man, besides being proficient in every branch of the profession, must be ready to lead a hard life. It is desirable that every colonial practitioner, intending to start in a country district, should be of good physique and not only able to ride but able to take care of his horses.

There are, of course, certain colonial appointments made in this country, particulars of which will be found in our columns. These appointments are sometimes made with permission to practise privately, and sometimes this is not permitted. Candidates for the post should apply to the Colonial Office for information, and their chances of success will be much increased by having passed through one of the schools of tropical medicine. The duties of colonial medical officers involve medical charge of a district, including as a rule the charge of a hospital and a lunatic asylum. The medical officers also supervise the sanitation of their districts, and as a rule give gratuitous attendance to all Government officials.

The United States of America form a rich and well-populated country to which, as speaking our language, it is natural for the British medical man to desire to go. The regulations for practice in the various States differ much, but it will be found that wherever the social conditions are pleasant and the opportunities for emoluments good there will be plenty of competition. There is an enormous number of medical men in the United States, and the British medical man contemplating starting in medical practice there will be prudent to make full inquiry before deciding on the locality, while his chance of success will be increased by his having some good introductions.

FRANCE.

The law that regulates the conditions of the practice of medicine in France is that of Nov. 30th, 1892, passed by the Senate and the Chamber of Deputies and signed by Carnot, President, and Poincaré, the Minister of Public Instruction, at that date:—

> No one may practise medicine in France unless he holds a diploma of the doctorate of medicine given by the French Government after examinations duly passed in the State institution of higher medical education.

The fifth article of this law specifically refers to foreigners:—

> Physicians who have taken their degree abroad, of whatever nationality, can only practise in France on condition of having obtained in France the degree of doctor of medicine.

This article was modified by a special degree, signed in July, 1893, referring to certain concessions to be made to such foreigners:—

> Physicians with a foreign degree who desire the French degree of doctor of Medicine may obtain partial or complete dispensation of medical study and partial exemption from the examinations required. In no case will candidates be exempted from more than three examinations. Such exemption is accorded by the Minister of Public Instruction on the recommendation of the competent Faculty and the Committee of Public Education.

While this last quotation may be considered the actual state of the law in the formal sense of the word, further and much less liberal projects have since been considered by the legislative bodies and adopted in the form of *arrêt ministériel*, of *circulaire* issued by the Minister of Public Instruction, or of *décrêt* adopted by Parliament. Presumably too much advantage was taken of the generosity of the concessions of July, 1893, although it must be remembered that the exclusive policy since adopted is by no means aimed at English physicians, but rather against graduates of little-known universities the value of whose qualifications it is difficult to estimate. Be that as it may, in July, 1896, a certain number of exemptions were granted—among whom the writer was fortunate to find himself—and a circular was issued repealing—in substance—the concessions of 1893. No foreign qualifications were to be recognised as deserving of any dispensations, and physicians holding foreign degrees and desirous of practising medicine in France were obliged not only to matriculate as medical students, but also to produce evidence of having obtained the French diploma of Bachelor in Classical Education (Arts and Philosophy) and the certificate in physical, chemical, and natural science.

The refusal that for the last ten years has almost invariably met the request made by foreign physicians for the right to practise in France is based upon this *arrêt ministériel*. Such requests are answered in the formula—"Depuis 1896, époque à laquelle il y a eu une décision du Parlement, il n'est accordé aucune dispense aux étrangers désireux d'obtenir le diplôme d'etat: ils doivent tous produire le baccalauréat." The simplicity and clearness of this statement make translation unnecessary. This exclusive attitude was not, however, wholly maintained. While withdrawing nothing of the exclusiveness of 1896, the Minister could grant leave to foreigners to possess themselves of a formal academic medical degree which, while it entitled the possessor to call himself docteur en médecine de la Faculté de Paris (de Montpelier, Nancy, Bordeaux, Lille, Lyon, or Toulouse), gave him no right whatever to practise on French territory. To obtain this degree the postulant must formulate his request to the Minister on *papier timbré*, enclosing a copy of his birth certificate, his diplomas, and class certificates, formally translated. This honorary degree is readily obtained, and from English candidates it is probable that an appearance in so-called "final" subjects would alone be required.

Up to Dec. 29th, 1906, it was possible to transform the university or academic diploma into a Government degree by becoming a naturalised French subject. On account of the large number of young Russian girls who married in France and thereby became French and claimed the State diploma it has been decided to insist upon the possession by foreigners of the *license-ès-sciences* before this transformation can be granted. The fees for this degree amount to between £60 and £70.

The authority conferred on the Minister empowered him to exempt a certain number of students from the necessity of taking the diploma of bachelor, but this at last gave rise to such abuses that various associations both of medical men and of students protested against what they felt to be an injustice, as the proportion of exemptions was 20 per cent. in some of the faculties. A decree of May 12th, 1909, announced that no exemption would from that time be granted to any student. As, however, there was no desire to create obstacles for foreign students who come to Paris in continually increasing numbers, an official circular of June 2nd, 1909, stated that foreign students (but no others) might be granted exemption under the same circumstances as before, provided, that is to say, that their object is to

take merely the diploma of the university and not the State diploma, which alone gives the right to practise medicine in France.

ITALY.

Some years ago the British and American consuls at the great centres of Italian population and commerce combined to form an estimate of the money brought annually into the kingdom and spent within its borders by the English-speaking world. That estimate, an approximate one necessarily, which they carefully checked by every qualifying consideration conceivable, amounted to £20,000,000 sterling, about one-third of Italy's whole revenue at that time. Since then the yearly influx of English, and especially of American visitors, has greatly increased, so that were a similar calculation to be made now the estimate would doubtless be still larger. This is a fact of great importance from whatever side it is contemplated, and it implies a large and continuous demand for English-speaking practitioners. It is true that of late years an active agitation, having for its object the expulsion of all foreign practitioners from the country, has been carried on by a section of the medical profession in Italy, but the movement has proved only partly successful, the public at large being well aware of the injury which the adoption of such a measure would inflict upon its interests. The British medical men and their American *confrères* form a prominent reason for Italy continually to attract that portion of the travelling public from which she derives so much of her annual revenue.

The question of the foreign practitioner in Italy, which for so many years has agitated medical circles in this country, has now been settled in what appears to be a fair and satisfactory manner by the Bill which has lately been passed by the Chamber of Deputies. Approved a year ago by the Senate, this Bill, on account of the fall of the Giolitti Ministry, has only now reached the Lower House and been placed upon the statute book, under the title of "Sugli Ordini dei Sanitari." The object of the Bill as described by its promoter, Signor Giolitti, is the institution of organised bodies for the legal representation of the sanitary classes similar to those already existing for the members of the legal profession. There was at first some idea of uniting the medical profession with veterinary surgeons and pharmacists for this purpose, but this proposal had to be abandoned as, for obvious reasons, impracticable, and provision made for a separate organisation for each of the three categories.

Article 1 of the new law therefore provides for the institution of an "Ordine dei Sanitari" in each province of the kingdom for each of the three classes above mentioned. This will be accomplished by means of a register for each category, in which the names of all belonging to that category must be inscribed.

According to Article 2, the enjoyment of civil and political rights and the possession of a professional diploma granted by a recognised institution of the kingdom are the qualifications necessary for registration. To this rule there are certain exceptions. The first regards women with civil rights who have taken a professional diploma entitling them to practise and whom it would therefore be illogical to exclude merely because of their political disability. The same consideration holds good for foreigners who have civil rights and have taken a professional diploma in a competent institution of the kingdom. A third exception is made in favour of citizens and foreigners who have taken a professional diploma abroad. But in this case registration is permitted only to the possessors of foreign diplomas from universities in those states which grant reciprocal rights to diplomates of Italian universities. To obviate injustice being done to foreign practitioners settled in Italy under the old law, Article 10, however, authorises such persons to continue provisionally the exercise of their profession, but only amongst foreigners, and only on condition that for more than two years before the promulgation of the new law they have been enrolled on the list of tax-payers paying taxes on their professional income.

Article 3 makes inscription on the provincial register the *conditio sine quâ non* for the unrestricted exercise of the profession in the kingdom and in its colonies and protectorates, except in the case of sanitary officials connected with the public administration of the State, or of the provinces, or of the communes, and who do not engage in private practice. Such officials are only subject to the discipline of the "Ordine" in so far as may concern their private practice.

By Article 4 no one is permitted to inscribe contemporaneously in more than one provincial register, but his name may be transferred from one register to another under certain conditions.

Article 5 limits the registration fee to a maximum of 25 lire (£1).

Article 6 regulates the election of an executive council for each provincial "Ordine."

Article 7 defines the duties, functions, and disciplinary powers of these executive councils. *Inter alia* they are empowered when requested to intervene in disputes between members, or between a member and his client in regard to charges, fees, or other professional questions, to repress abuses, and to punish those guilty of unprofessional conduct.

Articles 8 and 9 refer to appeals from the "Ordini" and their councils and to various details of administration.

As will be seen, the position of foreign practitioners is considerably affected by the new law. Up to the present the possession of a diploma from any recognised foreign medical school has been sufficient to secure all the privileges the foreign practitioner wanted—namely, the right to practise amongst foreigners. Henceforward, only those whose respective countries grant reciprocity of medical practice to Italy will be admitted to exercise their profession there. As at the present moment Britain is the only foreign country which has conceded such reciprocity, British practitioners are the only ones whose foreign diplomas can gain them admission to the Italian register. The new law, therefore, affects the British practitioner in Italy favourably, since it gives him complete freedom to practise amongst Italians as well as amongst foreigners. Other foreign practitioners will be variously affected. None of them will be entitled to practise amongst Italians unless they possess an Italian diploma, but those already established and who have been enrolled for more than two years as contributories to the tax on professional incomes will, for the present at all events, be allowed to continue the exercise of their profession, although only amongst foreigners. Finally, all eligible foreign practitioners must become members of the new "Ordini," or associations of the provinces in which they practise, and consequently become subject to the discipline of these "Ordini." Altogether, the new regulations must be acknowledged to be equitable and just, even by those—and they are very few in number—on whom they fall most heavily. New arrivals, indeed, possessing diplomas of countries which do not grant reciprocity to Italy will be excluded henceforth from practice, but even to these it remains open to qualify themselves by taking an Italian degree, which is still obtainable under comparatively easy conditions.

As to the career Italy offers, it is in some respects better, in other respects worse, than it was some years ago. It is better inasmuch as Italian medicine and surgery have greatly improved of late years, and the foreign practitioner, particularly in those cities which are the seat of medical schools, is not in danger, as he used to be, of getting out of touch with the advance of the profession. Indeed, the British medical man may keep himself *au courant* with the latest accession to medical doctrine as conveniently in the Italian as in any other kingdom. By graduating at one or other of the many Italian schools he can obtain the *entrée* to the medical societies, the congresses (provincial and national), the hospitals, the class-rooms open to the native practitioners, and also become entitled to the reduced railway and steamboat fares conceded on occasion to all duly qualified Italians. Indeed, he is generally welcome to them on the ground of professional *fratellanza* (brotherhood), but the graduation above indicated gives him a right to what he would otherwise owe merely to courtesy. On the other hand, the career is less favourable than formerly on account of the large number of English-speaking competitors whom it now attracts and who comprise not only Englishmen and Americans, but Swiss, Germans, and other nationalities as well. Their harvest (generally limited to three or four months of the "season") entails immense, almost excessive, activity, compensating the comparative idleness of the months before and after it. Upon this short period of remunerative work the practitioner must therefore rely to carry him through the entire year, and with heavy expenses to meet for housekeeping, house rent, servants' wages, taxes, &c., it becomes a serious matter for him when

the "season," as it often happens, turns out a poor one. Nevertheless, for a well-qualified man with sufficient private means to tide him over the first years, and who is possessed of good social introductions, there are always openings where he can still find a profitable *clientèle*, although his possible income at any of the smaller health or pleasure resorts will necessarily be limited.

One word of warning in conclusion. Let anyone who is tempted to buy a practice in Italy proceed with even more caution than he would in negotiating in his own country. In the first place, the foreign population of nearly all Italian towns is largely a floating one, composed chiefly of people who remain for but a few weeks, often for only a few days in one resort, and many of whom never come back again. The vendor of a practice in a place of this sort will have many patients on his books whom he cannot possibly introduce in any way to his successor, and a good many others whom he may introduce but who will never return to the locality, or at best do so only at long intervals, and can therefore form no permanent or profitable part of his successor's *clientèle*. His hold upon the practice is, in fact, of a peculiarly personal kind, and cannot, in the nature of things, be easily transferred to another. Secondly, the purchaser himself must be a man fitted for this particular class of work, or he may discover too late that he cannot make it pay and that the capital which he has expended has been spent to no purpose. A similar remark is doubtless true with regard to all such transactions, but it applies with special force in the circumstances now under consideration, where the physician has to deal with patients of such varying types and diverse characteristics as are to be met with amongst the travelling public in an Italian health or pleasure resort. To achieve a full measure of success the foreign practitioner in Italy must not only be a man of good all-round attainments, conversant with all branches of his profession, but should be possessed of an unusual share of sympathy and tact, for the exercise of which he will have daily scope amongst patients on whom illness falls with peculiar sadness, alone, as they so often are, and helpless in a foreign land.

GERMANY.

Foreign diplomas are not legally recognised in Germany as entitling their owners to practise medicine, so that British medical men desiring to settle in that country have to attend all the classes and pass all the examinations. A young German before commencing the study of medicine must pass an *Abiturienten-Examen* requiring a knowledge of French, Latin, Greek, mathematics, history, and theology. Or the examination of a *Real-Gymnasium* or an *Oberrealschule* may be passed. In the latter event more stress is laid on modern languages, mathematics, and natural history, and English is required instead of Greek. Foreigners have, as a rule, to pass this examination, but if they have already passed a similar one in their own country they may be exempted from it by a special order to be obtained from the Minister of Public Instruction for each individual case. Medicine can only be studied at a university; the curriculum lasts five years, after the second of which the examination called the *Tentamen Physicum* must be passed; it includes anatomy, physiology, chemistry, physics, and natural history. After the end of the fifth year the student presents himself for the "State Examination," which is practical as well as theoretical, and includes medicine, surgery, obstetrics, gynæcology, pathology, materia medica, and hygiene. After passing the State examination the medical man, previously to obtaining his qualification, has to perform his practical year as clerk and dresser at a university clinic or a recognised hospital. If the medical man wishes to have the title of "doctor" he has to pass another examination, which is little more than a formality, but the degree of doctor without the State examination does not legally confer the right to practise. This title of doctor is granted by every German university to foreigners, but the conditions differ according to the university. Some universities demand a special course of study and others do not, and the intending candidate must in every case make inquiries of the authorities. The law does not allow qualified British practitioners any exceptional facilities in passing the examinations; the time of study may possibly be made a little less than five years for those who have already studied abroad, but a special order, very difficult to obtain, is always required for this purpose. A thorough knowledge of German is essential. The fees for lectures are at least £130 and the examination fees about £12. The fees for the degree of M.D. vary from £10 to £20, being highest at Berlin University, which is the degree that is most popular with alien medical men. There is sometimes no prohibition set against holders of British diplomas practising in Germany provided they do not make use of any professional titles resembling those of qualified German medical men. Medical men practising in this way must, however, understand that the law regards them as unqualified and that they have to comply with certain conditions which are rather vexing. A detailed description of these conditions may be found in THE LANCET, 1909, vol. ii., p. 183.

AUSTRIA-HUNGARY.

In order that foreigners may legally practise medicine in Austria it is necessary for them to become naturalised Austrian subjects, which necessitates five years' residence in the country. For such instances a new regulation is being drawn up, but it is not yet sanctioned. In special cases the Minister of the Interior, conjointly with the Minister of Education, may grant exemptions from that rule and may permit foreign holders of diplomas to practise in Austria if they comply with the other requirements. These are: The production of a so-called Maturitätszeugnis or certificate of having passed the final examination of the gymnasium, at which the candidate must show a satisfactory knowledge of Latin and Greek, as well as of German or one of the other languages spoken in the Austrian Empire, such as Polish, Bohemian, Italian, also of mathematics, history, natural history, chemistry, geography, and physics. If a British medical man or student has passed a similar examination in his own country he may apply for exemption, which is sometimes granted; he has to produce proof of his having passed such an examination, in the shape of a certificate, to be translated into German by a properly recognised translator. The medical curriculum lasts 11 semesters, or five and a half years. The holders of foreign diplomas may, however, obtain permission to pass their examinations at shorter intervals than are necessary for the students, so that from 18 months to two years may be reckoned as sufficient. After passing the first theoreticum, or first examination, which comprises biology, anatomy, physiology, and chemistry, and which, as a rule, is passed at the end of the fourth semester, the student is allowed to commence hospital work; at the end of the tenth semester he may present himself for the second theoreticum. This and all other examinations (altogether three in number) are both practical and theoretical and must be completed within eight days. Only one subject is taken each day. It comprises internal medicine, surgery, and pathology, whilst the third and last examination comprises gynæcology, obstetrics, hygiene, materia medica, and ophthalmology; pædiatrics, otology, dermatology, and laryngology are examined in alternately. This last examination the student is expected to pass not later than five years after the first, otherwise he has to present himself again for certain subjects of the first examination, especially anatomy. The fees for the three examinations are £15, and then comes the fee of £6 5*s*. for the degree of M.D., without which degree nobody is allowed to practise. The fees for the lectures are about £35 for the five years, and about £25 for special classes may be added, so that the entire cost of obtaining the degree of M.D. would be from £80 to £85. All the universities, of which there are seven in Austria and two in Hungary, confer the degree of M.D., and no distinction is made here as regards the place where the title has been gained, although the University of Vienna is most favoured because it offers the best opportunities for studying. In special cases the Minister of the Interior may allow a foreign qualification to be recognised as entitling its holder to practise, only a mere formal examination being required; such a special order is, however, very difficult to obtain. The examination are entirely oral and are conducted in various languages according to the locality—namely, German in Vienna, Innsbruck, Graz, and Salzburg; German and Bohemian in Prague; and Polish in Cracow and Lemberg. These seven universities are the only ones in Austria, and only they may grant degrees, as the medical schools are invariably integral parts of the universities. If a British medical man wishes to practise in one of the frontier spas or in Karlsbad he will have little difficulty in obtaining permission to do so if he applies for it, especially if he gives

an assurance that he will only attend his fellow-countrymen and only for the season. However, since last year greater obstacles have been placed in the way of foreign doctors wishing to practise in such places.

As regards Hungary, the medical curriculum is for practical purposes similar to that in Austria, and the foreigner, whether a holder of a diploma or a student who wishes to practise legally, must become a naturalised subject and must pass the three above-mentioned examinations in the Hungarian language. Applications for admission must be addressed to the Minister of Education, who decides upon the conditions of admission after consultation with the medical faculty of Budapest. Usually the applicant has to pass three medical examinations after having proved his qualification for admission by a Maturitätszeugnis, or testimonial of sufficient preliminary instruction in two classical languages, chemistry, arithmetic, geometry, and physics. The examination is allowed only in the Hungarian language. The total fees amount to 295 kronen (about £12), and the fee for "promotion"—i.e., for the M.D. degree—is similar to that in Austria. Besides the university in Budapest there is another university in Klausenburg (Hungarian "Koloszvar") for which the same rules hold good. Only these two universities may confer medical degrees in Hungary. In 1906 new regulations were drawn up which are now in the hands of the Minister, but they have not been ratified. In these rules the Professional Committee demands the passing of the second and third practical examinations from those who gained their diploma before 1901. Those who gained their diploma after that year are compelled to pass the second and third examinations, and in addition to pass one year in a hospital which is designated for that purpose. The subjects of the old second examination are as follows: clinical medicine, surgery, operative surgery, ophthalmology, obstetrics, and operative obstetrics. The old third practical examination embraces the following subjects: clinical medicine (theoretical), surgery (theoretical), forensic medicine, and public hygiene. The new third examination embraces the following subjects: clinical medicine, surgery, operative surgery, obstetrics and gynæcology, operative obstetrics, ophthalmology, operative ophthalmology, dermatology, pædiatrics, and psychology (from the latter three only one is compulsory, decided by lottery). The new second examination embraces pharmacology, general pathology, forensic medicine, public hygiene (all theoretical), and pathological anatomy (theoretical and practical). The Minister has the right to allow settling in Hungary without demand, the passing of these examinations, but it is questionable whether he will exercise this right.

Count Tános Zichy, Minister of Public Instruction, has added a new paragraph (this year) to the rules relating to practising medicine in Hungary by foreigners. According to the new paragraph the Hungarian Universities are empowered to give a licence to practise medicine with foreign qualifications if the universities themselves issue a medical diploma for the applicant. Every applicant has to prove his personal identity by the Consulate, and he has to certify that he has passed all the preliminary examinations (in the same subjects) which are required from the candidates studying in Hungarian Universities. The holder of a foreign qualification who desires to obtain permission to practise in Hungary must apply to the Professorial Board of the Budapest University, which Board instructs the applicant to pass the second and third practical examinations. After the candidate has passed these examinations the Board declares the candidate to be a suitable person for settling in the country, and this resolution is submitted to the University of Public Instruction for approval. The Ministerial approval is written on the back of the foreign diploma. The candidate must afterwards pass the ceremonies of the Hungarian University. Finally, the Board has resolved that an invitation of a foreign doctor to a Hungarian University chair is equal with the recognition of the validity of his foreign diploma. In special cases the Minister may grant a licence to foreign doctors to settle in Hungary.

DENMARK.

In Denmark only those who have passed the Danish Medical Examination are entitled to practise. In Iceland it suffices to have been examined at the Medical School in Reykjavik. The medical student before beginning his studies must present a diploma of *Examen artium*—an examination very similar to the German *Abiturienten-examen*. At the close of the first year he must pass an *Examen philosophicum*. The medical studies proper require from six to seven years. The foreign student will find one agreeable difference from what is customary in other countries—namely, that all University lectures and clinical courses are free, payment of class fees being unknown, but a few pounds are required for the examination. On passing the examination the young man becomes entitled to practise, and not a few commence at once. The majority, however, prolong their practical training by accepting an appointment as (salaried) junior house physician or house surgeon in one of the numerous hospitals of the country. The most highly valued appointments—namely, those at the Kommune hospital or at the State Hospital of Copenhagen—were, however, formerly in so great demand that not rarely four, five, or even more years elapsed before an aspirant could secure the coveted position, when he served for one or two years in the different departments of the hospital. This unreasonably long waiting time is now considerably reduced, as the Association of Junior Medical Men has arranged with the faculty and other authorities for the establishment of a larger number of appointments, which are to be officially considered as equivalent to the older appointments at the two hospitals.

The only academical degree for medical men known in Denmark is the degree of M.D. It is granted exclusively by the University of Copenhagen, and only to those who have submitted to the faculty an original investigation of undoubted scientific value, the consequence being that only a comparatively small number of Danish practitioners possess the degree in contradistinction to what is customary, for example, in Germany. In fact, the Danish degree of M.D. must be considered as equal to the German title of *Privatdocent* or the French tile of *professeur agrégé*, as it authorises its possessor to teach publicly in the university.

The only portion of Danish territory where a foreign medical man is permitted to make use of his diploma are the Danish islands in the West Indies, the Governor being empowered to grant such permissions; but he is not likely to do so except during epidemics or when other abnormal conditions obtain.

SCANDINAVIA.

As a general rule no one can legally practise medicine in Scandinavia without passing the examinations of the respective countries. Certain exceptions have, however, from time to time been made in favour of practitioners with foreign degrees who may wish to practise without passing the examinations of the country. An interesting account of the conditions of medical practice in Scandinavia and the evolution of medicine there will be found in THE LANCET for July 1st, 8th, and 22nd, pages 36, 114, and 244 respectively.

BELGIUM.

Application should first be made to M. le Ministre de l'Intérieur et de l'Agriculture in Brussels. The qualifications already possessed by a foreign practitioner are considered by a committee of the University which decides the nature and number of the examinations that must be passed by the applicant. A fee of about £4 is charged for each examination, and there is an annual fee which varies in different parts of the country.

NETHERLANDS.

A medical practitioner holding British qualifications cannot practise in the Netherlands without being also qualified in the Netherlands. For this purpose it is necessary to pass the medical examinations of one of the universities. The examinations are in the Dutch language.

SWITZERLAND.

Foreign practitioners must pass the first, third, and fourth State Examinations. These examinations are held in either French (at Lausanne and Geneva) or German (at Berne, Basle, and Zürich). In addition to the British five years' curriculum practitioners would require one or two years' additional study. The examination fees amount to about £9.

SPAIN.

To practise in Spain it is necessary for the holder of British qualifications to apply to the Royal Council of Public Instruction and Fine Arts and enclose the degees, diplomas, or similar credentials which he possesses, and request permission to appear before an examining body. The above documents must be translated by the Interpretation Bureau

of the Ministry of State and afterwards presented in the Ministry of Public Instruction, together with a petition to the Minister, clearly stating the applicant's requirements. We are informed that the examination which confers a licence to practise consists of three parts: 1. A written examination lasting two hours. 2. A *vivâ-voce* examination. 3. Clinical examination of a patient and a report upon his condition. The fee for the examination is 40 pesetas (£1 12*s.*). The fee for the diploma is 814.50 pesetas (£32). The length of time between the presentation of the documents to the Ministry of State and Public Instruction and the granting of the diploma is variable on account of the time occupied in the necessary legal formalities. The expenses of translation of the documents likewise vary with their length and the consequent work entailed to be done by the Bureau.

PORTUGAL.

Holders of foreign diplomas must apply for examination at the schools of Lisbon or Oporto or the Faculty of Coimbra. For the last examination the presentation of a *printed* dissertation is required.

GREECE.

In Greece the foreign qualification which entitles to practise legally is the possession of a degree or diploma from a recognised university or corporation of a state where practical examinations in Pharmacology, Surgery, Obstetrics, and Forensic Medicine are demanded, which means that registered British practitioners by supplying documentary proof to the medical secretary of the Ministry of the Interior in Athens can obtain the right to practise. All persons possessing no qualifications outside Greece have to submit to the practical examinations of which the doctors of medicine in the university are subject, but if ignorant of Greek examination can be taken in French, German, or Italian. There is no entrance fee, but there is an annual fee or tax dependent upon the amount of practice.

TURKEY.

Every foreign medical practitioner desirous of settling in Turkey for the purpose of practising his profession must undergo the ordeal of the so-called "colloquium." This is a sort of professional examination very easy in itself but a source of annoyance and vexation to Europeans by the dilatory propensities of Orientals and their habit of conducting business in an indolent and easy-going way. The "colloquium" itself takes about half a hour's time, whereas the preliminary steps and arrangements and the subsequent formalities necessary for the final obtainment of the medical permit lasts for weeks and even months. The "colloquium" must at the present time be passed either in French or Turkish without any interpreter, the choice of the language being left to the examinee. The possessor of a foreign diploma is tested, as a rule, in four subjects, and the testing consists in three or four questions in each subject, which the candidate has to answer orally. It has not yet happened that a European physician failed to pass the "colloquium." The fee for it used to be about £8. Two or three years ago it was raised to about £20. We are informed that this was done in order to increase the revenue of the rather inefficiently equipped Medical School at Haidar Pasha and to diminish the influx of the numerous medical men flocking to the Turkish metropolis from almost every country adjoining the Ottoman Empire. A far better means of effectively doing the latter would be to raise the rather low standard of the "colloquium." There are numbers of medical men in Constantinople and in other parts of Turkey whose qualification is doubtful. This is especially the case with regard to the so-called "surgical dentists." With the new *régime* of the free constitutional government new alterations and improvements will undoubtedly be introduced into the rules regulating the practice of foreign medical men. The Young Turkish Parliament has lately already touched upon some important medical questions, such as the service of non-Mussulman practitioners in the Ottoman army. We learn that strict measures will be taken against all those who do not possess necessary qualifications, that the standard of the medical curriculum will be raised, and that the manner of conducting the "colloquium," as well as its character, will be completely changed. Regenerated Turkey intends to organise everything in accordance with modern lines of European efficiency.

It was hoped that with the advent of the constitutional *régime* lady doctors, so very much needed in the Ottoman Empire, would also be admitted to the "colloquium" and have the right to practise. This hope has not been realised. A number of female practitioners, who went there especially from Russia, had to leave soon. They were told that no foreign lady would be admitted to any examination and that the right of practising in Turkey is strictly reserved to native women, who must be Ottoman subjects. They were also informed that the medical profession in the metropolis is overcrowded and that it would not be fair to increase foreign elements at the expense of the natives. A well-known lady doctor, Marie Siebold, who had lived in Constantinople during the old *régime* for about 20 years and who did excellent work very much appreciated by a large number of Turkish ladies in high circles of society, returned to the capital soon after the proclamation of the Constitution. She was well received by the harem ladies of the present Sultan and expected that she would be allowed to settle definitely in Constantinople this time. She was mistaken. The Sultan, with all his good intentions, is a mere figure-head, and although he was fond of Dr. Siebold he could do nothing for her. The medical authorities refused to acknowledge her and put in her way every possible difficulty. She left disgusted and is now doing excellent work in Cairo, where lady doctors seem to encounter no restrictions.

RUSSIA.

The law relating to foreign medical practitioners desirous of practising in Russia is contained in the two following paragraphs of the *Vratohebny Ustav* or medical statute:—Section 93 (*a*): No one, whether a Russian subject or a foreigner, who has not a diploma or certificate from a university or from an Army Medical Academy, has the right to follow any branch of medical or veterinary practice in Russia; (*b*) foreign medical practitioners who wish to practise medicine in Russia must, without exception, know the Russian language. Section 94: Of foreign practitioners who shall be invited or who may come to Russia the right to decide which of them shall be permitted to free practice here and under what conditions is in the hands of the Medical Council of the Ministry of the Interior: some shall be permitted only after the usual examinations and consequent granting to them of a learned degree; others more distinguished after an oral examination in the Medical Council; lastly, others who have made a name in the scientific world by their writings or unusually successful practice, or who have occupied professorial chairs or other important medical appointments in other countries, may be permitted to practise without any examination, solely on the decision of the Medical Council, confirmed by the Minister of the Interior, as to the worthiness of such practitioners.[1] Previous residence in the country before practice would not be necessary except in the case of the first group mentioned, who would have to pass through the usual five years' course of a Russian medical curriculum. As to the prospects of a British practitioner in Russia, the country and the smaller towns can present no attraction to an English medical man, even if the fees obtainable would support him, which they would not. In the two capitals, Moscow and St. Petersburg, the field is wider. Competition is, however, great, fees are as a rule small, and bad debts many. The frequency of bad debts results from the unwritten law by which medical men do not send in accounts, but leave the patient to pay what he considers a suitable amount.

EGYPT.

Any person in possession of a diploma from a recognised school of medicine is allowed to practise his profession in Egypt after having presented his diploma to the Director-General of the Sanitary Department at Cairo for verification and paid a small fee of 6 piastres. From a recent report of the department it appears that the influx of medical men into Egypt of late years has been very great, so that it is difficult to understand how some are able to gain a livelihood from their profession. The effective control of diplomas which emanate from so many different foreign schools must be at times somewhat difficult, as the Public Health Department has no means of identifying the person who presents the diploma as the person who underwent the examinations which entitled him to it—e.g., there is nothing to prevent a person who has come into possession of a diploma by fraudulent means personifying the legitimate owner of the diploma and obtaining a licence to practise.

[1] This Section dates from 1836; it was amended in 1842, 1845, and 1867.

It is true that in addition to the diploma a certificate of good conduct is necessary from the applicant's Consul before a licence to practise is granted, but in many cases the Consul finds himself in the same difficulty as the department with regard to ascertaining if the person in possession of the diploma is the rightful owner or not. We recommend any one of our readers who is attracted by the idea of medical practice in Egypt to obtain introductions to a resident in Egypt so that he may ascertain the chances of finding a remunerative opening and be provided with a witness to his identity. A knowledge of French or Italian and Arabic would be essential to any new-comer desirous of practising all the year round, for the tourist season only lasts from November to April.

JAPAN.

According to the regulations for medical licence, "persons holding either diplomas of foreign universities, or medical schools, or foreign licences for practising medicine may be granted licences for practising medicine in Japan, without being subject to the usual medical examination, upon producing such diplomas or licences obtained in foreign countries to the satisfaction of the home authorities." English medical practitioners will therefore have no difficulty in obtaining a licence in Japan. A local rate, which would be a small fee only, may have to be paid on opening a practice, but no charge is made for the right to practise. We have been informed that English practitioners in the foreign quarters of Japan are at some disadvantage for the reasons that the druggists, who are now nearly all Japanese, sell their drugs at a cheaper rate to native practitioners; and, moreover, living is cheaper for the native than for the foreigner. Foreign practitioners depend largely upon shipping and contract business work.

SOUTH AMERICA.

Argentine.—An examination which is held in the Spanish language must be passed. The fee for the examination is about £79, and there is an annual fee of about £8 15*s.*

Brazil.—Legally the consent of the Faculty of Medicine and Pharmacy must be obtained, but the law is somewhat lax. Certain small fees are demanded.

UNITED STATES OF AMERICA.

The laws regulating the practice of medicine in the various States and territories of the United States of America differ to a considerable extent in detail. In spirit, however, they are beginning to assume that uniformity which all medical reformers must desire for them. It has long been pointed out that one of the most open doors to abuse of medical practice in the United States was the fact that while in some States an excellent medical curriculum was required before admission to legal practice, in other States but little scientific training was exacted and freedom to practise was extended to dangerous forms of quackery. This position of affairs had its origin, of course, in the evolution of the United States, certain divisions of the country being in the forefront of civilisation, while others were, to say the least, in a rudimentary plight; but of late a great process of levelling-up has been witnessed. The progress of the United States is in no way better shown than in the fact that throughout its vast length and breadth there is now an attempt to secure for the people of the country adequate medical treatment based on scientific grounds. A *résumé* of the legal regulations for medical practice in the States and territories of the United States of America can be secured by sending 30 cents to the American Medical Association, 535, Dearborn-avenue, Chicago, Illinois. In this digest of the medical laws of the various States, which has been brought quite recently up to date, existing legislation is explained on broad grounds so far as it pertains to medical practice. If the information with regard to some particular State is anywhere scanty in detail it is always possible for the intending practitioner to communicate with the secretary or executive officer of the medical board at the capital of the State.

We must continue to warn the British medical man desiring to practise his profession in the United States of America that in all the more enviable centres he will find a vast number, almost a plethora, of medical men, the great proportion of whom have been thoroughly well educated and trained. He must remember also that in the more important States, generally speaking, although the remuneration may rule high, the expense of living is proportionate. He will understand that the less highly the State is developed the more easy will it be for him to obtain a footing, but the less pleasant in all probability will be his professional career. Examinations are now required of all applicants in all States.

(To be continued.)

POST-GRADUATE STUDY.

POST-GRADUATE study is divided into three main divisions —the general study of professional subjects (including the special study of some branch), the study of State medicine, and the study of tropical medicine. We have already described the provision made for instructing graduates in the last two divisions, mentioning the procedure necessary to obtain diplomas or certificates for proficiency in them. The following article shows the principal arrangements existing for general post-graduate instruction, and some little repetition has been necessary:—

LONDON.

The London Post-Graduate Association.—The London Post-Graduate Association is now so well known that it is hardly necessary to remind our readers that it is composed of the following hospitals and medical schools (general and special)—viz.: *General Hospitals:* Charing Cross, Guy's, King's College, St. George's, St. Mary's, St. Thomas's, University College, and Westminster. *Special Hospitals:* The Brompton Hospital for Consumption and Diseases of the Chest, the Hospital for Sick Children (Great Ormond-street), the London School of Tropical Medicine, the National Hospital for the Paralysed and Epileptic (Queen-square), the Royal London Ophthalmic Hospital, late Moorfields (City-road), St. Mark's Hospital for Diseases of the Rectum, and the Medical Graduates' College and Polyclinic. One ticket (the charge for which is 10 guineas for a three months' course, or 15 guineas for six months) admits the holder to the clinical instruction in the wards and out-patients' departments, the operations, necropsies, and other hospital practice of all the institutions mentioned above. For the purpose of enabling qualified medical men to keep up to date in their work we can heartily recommend the scheme offered by the London Post-Graduate Association, which thus places the best of all the hospital work in London at the disposal of its ticket-holders. The office of the association is now at 20, Hanover-square. Further particulars may be obtained by writing to the Secretary, the London Post-Graduate Association, 20, Hanover-square, London, W., or by personal application between the hours of 10.30 A.M. and 1 P.M. any week-day except Saturday.

Medical Graduates' College and Polyclinic.—This institution affords to medical practitioners special facilities for acquiring technical skill and for advancing their clinical and scientific knowledge. The building contains lecture- and consulting-rooms, a pathological and clinical laboratory, a Roentgen-ray room, an ophthalmoscope-room, a museum, a library, and reading- and waiting-rooms, &c. Cliniques are given on each working day of the week except Saturday at 4 P.M., and a lecture on medicine, surgery, or their special branches, is delivered daily except on Fridays and Saturdays, at 5.15 P.M. Practical laboratory instruction in the various branches of Clinical Pathology is also provided. Classes are also held in Otology, Laryngology, Rhinology, Ophthalmology, Radiography, Anatomy, Nervous Diseases, Microscopy, Urinary Analysis, Gynæcology, Practical Bacteriology, Sigmoidoscopy, Cystoscopy, Mental Diseases, Hygiene and Public Health, and Operative Surgery. Extra classes in any subject are formed to suit the convenience of practitioners unable to attend those already provided. Special tutorial classes are held for practitioners reading for the higher examinations. A monthly journal, the *Polyclinic*, recording the work done in the college, is issued free to subscribers and members. The annual subscription for medical practitioners of either sex is 1 guinea. Full information can be obtained from the Medical Superintendent at the College, 22, Chenies-street, Gower-street, W.C. The autumn session will commence on Monday, Sept. 11th.

The Hospitals of the Seamen's Society.—In connexion with these hospitals there are two post-graduate schools—viz.,

(*a*) the London School of Tropical Medicine; and (*b*) the London School of Clinical Medicine.

(*a*) *The London School of Tropical Medicine.*—The school buildings, laboratories, museum, library, &c., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock (Station, Connaught-road, Great Eastern Railway). Opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the service or going abroad. In the hospitals of the society are to be found cases of tropical diseases such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning on Oct. 1st, Jan. 15th, and May 1st respectively. The laboratory, museum, library, &c., are open daily, and clinical instruction is given daily in the wards of the hospitals. The School Course is recognised by the University of Cambridge for its Diploma of Tropical Medicine and Hygiene. Classes are arranged for advanced Helminthology, Protozoology, and Entomology. The lecturers in the School are: Sir P. Manson, F.R.S., Dr. Andrew Duncan, Dr. C. W. Daniels, Dr. L. Westenra Sambon, Dr. J. M. H. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, Dr. F. M. Sandwith, Mr. K. W. Goadby, and Professor W. J. R. Simpson. The Director is Mr. H. B. G. Newham. Certificates are granted after examination to those who complete a full course. Resident chambers are available for students who must be qualified or in the fifth year of their medical studies. Prizes: the Craggs prize of £50 and the Hon. Edward John Stanley Memorial Fund, £60, are awarded yearly.

(*b*) *The London School of Clinical Medicine* (for qualified practitioners only).—The lecture rooms, pathological laboratories (two), museum, and operative surgery class-rooms are in the *Dreadnought* Hospital at Greenwich, and the whole hospital of 250 beds with its out-patient departments is open to students from 10 A.M. till 5 P.M. Medical, Surgical, and Special Department In-patient Clinics are held upon every afternoon except Saturday by the senior members of the staff, and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the assistant physicians and assistant surgeons daily in the forenoon. Practical classes are arranged each session in the following subjects: The Practice of Medicine, the Practice of Surgery, Diseases of the Eye, Diseases of the Throat, Nose, and Ear, Diseases of the Skin, Diseases of the Nervous System, Operative Surgery, Clinical Pathology, Microscopy and Bacteriology, Mental Diseases, Radiography, Dental Surgery, the Administration of Anæsthetics, Hygiene and Public Health, Gynæcology, Surgical Diseases of Women, Surgical Diseases of Children, Medical Diseases of Women, Medical Diseases of Children, Applied Anatomy, and Midwifery. Three sessions of three months' duration are held in each year, beginning on Jan. 5th, April 15th, and Oct. 1st. Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals. Male patients chiefly are received as in-patients by the Seamen's Hospital Society, but arrangements have been entered into with the Royal Waterloo Hospital for the reception of graduates who desire instruction in Diseases of Women and Children; with the Bethlem Royal Hospital for those who require tuition in Mental Diseases; and with the General Lying-in Hospital, York-road, for the prosecution of study in Midwifery. These hospitals are situated on the south side of the river, are directly linked to the *Dreadnought* by both railway and tramway, and are affiliated to the London School of Clinical Medicine. The certificates of the School are recognised by the Admiralty, the War Office, the India Office, the Conjoint Examining Board of the Colleges of Physicians and Surgeons, the Colonial Service, and the University of London (for the higher degrees). The supply of material affords exceptional facilities for practical instruction in Operative Surgery and in Pathology on the cadaver. The hospital also offers a wide field for the study of Venereal Diseases, and there is a special department with open-air wards for the treatment of Tuberculosis.

The teaching staff consists of: Sir Dyce Duckworth, Dr. Frederick Taylor, Sir John Rose Bradford, F.R.S., Professor R. Tanner Hewlett, Dr. Guthrie Rankin, Dr. S. Russell Wells, Sir William H. Bennett, Mr. William Turner, Mr. Lawrie H. McGavin, Mr. E. Rock Carling, Mr. L. Vernon Cargill, Sir Malcolm Morris, Mr. Richard Lake, Dr. Howard Pirie, Dr. Frederick Langmead, Dr. Gordon Holmes, Dr. Charles Singer, Mr. C. C. Choyce, Mr. H. Curtis, Mr. A. J. Walton, Mr. R. Bickerton, Dr. Wilfrid Fox, Mr. G. N. Biggs, Dr. Maynard Horne, Dr. Cecil Hughes, and Dr. R. E. Delbruck.

The extra-mural lecturers are: Dr. James Taylor, Dr. W. H. B. Stoddart, Professor W. J. R. Simpson, Mr. James Cantlie, Dr. William J. Gow, Dr. Herbert Williamson, Mr. Herbert S. Pendlebury, Mr. Ivor Back, Dr. Alexander Haig, Dr. R. O. Moon, Dr. Charles O. Hawthorne, Dr. Thomas D. Lister, and Dr. William R. Dakin.

The Syllabus and other particulars of the School can be obtained on application to Mr. C. C. Choyce, the Dean, Seamen's Hospital, Greenwich, S.E.

West London Post-Graduate College, West London Hospital.—The West London Post-Graduate College was started in 1895 and three years later its basis was enlarged by the provision for the post-graduates of lecture-, reading-, writing-, and class-rooms, &c., while owing to the continued growth of the college these were transferred in 1901 to a building especially constructed for the purpose. Over 2000 post-graduates have been enrolled since its establishment, the yearly entry being now about 220. The hospital, which contains 160 beds, is in the main Hammersmith-road, about three miles from Hyde Park Corner, and very accessible by omnibus, tram, or train. The physicians and surgeons (see p. 597) attend daily at 2.30 P.M. Post-graduates accompany the staff and the junior staff on their visits to the wards. Instruction is given in the out-patient department daily at 2.15 P.M. by the assistant physicians and assistant surgeons. The out-patient department has recently been enlarged, and there is ample accommodation for post-graduates to see and to examine the patients in all the special departments of the hospital. Clinical assistants are appointed from among the post-graduates to the Medical and Surgical out-patients and to the Special Departments. The fee for a clinical assistantship to non-members is £3 3*s.* for three months, which includes membership of the college on the days on which the clinical assistant attends. Practical classes, limited in number, for instruction in special subjects, as well as in medicine and surgery generally, are held as required. Operations are performed daily at 2 P.M. Post-graduates are allowed to stand close to the table and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations. Instruction is given in the administration of anæsthetics by the anæsthetists on the operating days and post-graduates are allowed to administer anæsthetics under their superintendence. Post-mortem examinations are performed at 2 P.M., and demonstrations on recent pathological specimens are given on Mondays at 12 noon during each session in the pathological laboratory. Demonstrations are given each week on Practical Medicine on Thursdays at 12.15 P.M. Practical lectures and demonstrations are given each afternoon (except Saturdays), at 5 P.M., during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums. The college is licensed for the teaching of operative surgery. The fee is £4 4*s.* each member in a class of four. The practice of the hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal Army Medical Corps, Indian Medical Service, and Colonial Service who have obtained leave for further professional study, and the certificate of attendance at the college during such leave is recognised by the Admiralty and other authorities. The college is recognised by the University of London for hospital practice before the M.D. degree and by the Royal College of Surgeons for the necessary work before the Fellowship examination. The pathological laboratory has recently been completely reorganised and placed in the hands of the pathologist, Dr. Bernstein, who attends there during the whole day and gives instruction in Bacteriology and Microscopy. A special class meets on three mornings a week from 10 to 1, and post-graduates joining the class can work in the laboratory at other times under the guidance of the pathologist. A class meets 12 times and commences at the beginning of each month. The fee for this class in bacteriology and microscopy is £5 5*s.* The fee for the hospital practice, including all ordinary demonstrations and lectures, is £1 1*s.* for one week, £3 3*s.* for one month, £6 6*s.* for three months,

£10 10s. for six months, £15 15s. for one year, and £30 for a life ticket; all fees to be paid in advance. A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1s. A vacation class is held each year in August, the fee being £3 3s. for the course of one month, including hospital practice. The fee for a three months' course of instruction in the administration of anæsthetics, including a special class, is £3 3s., or without the class, £2 2s. A ticket for any of the above courses will be issued at any date. Arrangements can be made for gentlemen working for higher university examinations to be coached. The Winter Session will commence on Monday, Oct. 9th. All communications should be addressed to the Dean, Mr. L. A. Bidwell, Post-Graduate College, or to Mr. Donald Armour, Vice-Dean, West London Hospital, Hammersmith-road, W.

North-East London Post-Graduate College.—This post-graduate school is established in connexion with the Prince of Wales's General Hospital, Tottenham, N., which is recognised by the University of London as a place of post-graduate study for the M.D. and M.S. degrees and by the Admiralty and the India Office for purposes of study leave. Facilities are there afforded to qualified medical practitioners for taking part in the work of an active general hospital of 125 beds and for attending demonstrations in various branches of medicine, surgery, and gynæcology, with opportunities for clinical instruction in Diseases of the Eye, Ear, Throat, Nose, Skin, in Fevers, Psychological Medicine, the Administration of Anæsthetics, Radiography, and Dentistry. Cliniques, lectures, and demonstrations are given by members of the teaching staff in the lecture-room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed on every afternoon of the week except Saturday. Special limited classes are arranged in Modern Methods of the Study and Treatment of Diseases of the Lungs and Heart, Gynæcology, Diseases of the Throat, Nose, and Ear, Diagnosis of Diseases of the Nervous System, Ophthalmoscopy and Refraction, Diseases of the Skin, Abdominal Surgery, Radiography, Bacteriology (which is accepted by the University of Cambridge for its D.P.H. diploma), Clinical Pathology, Vaccine Therapy, and Medical Electricity. A Vacation Course will be held between Sept. 11th and 22nd. The fee for a three months' course of study, which may be begun at any time, in any single department, is 1 guinea. A fee of 3 guineas admits to the whole practice of the hospital for a similar term (one month 1 guinea), and a perpetual ticket for the practice of the hospital may be obtained on payment of a fee of 10 guineas. The fee for the Vacation Course is 2 guineas. Clinical assistants are appointed in the various departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A pathological museum and a pathological laboratory for original research are available. A reading- and a writing-room, containing a reference and lending library, is provided, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham).

The lecturers are as follows:—In General Medicine: Dr. Percy Kidd, Dr. R. Murray Leslie, Dr. G. P. Chappel, Dr. A. J. Whiting, Dr. A. G. Auld, and Dr. T. R. Whipham. In General Surgery: Mr. Walter Edmunds, Mr. H. W. Carson, Mr. J. Howell Evans, and Mr. E. Gillespie. In Gynæcology: Dr. Arthur Giles. In Diseases of the Eye: Mr. R. Philip Brooks. In Diseases of the Ear, Throat, and Nose: Mr. H. D. Gillies. In Diseases of the Skin: Dr. G. Norman Meachen. In Fevers (at the North-Eastern Fever Hospital, St. Anne's-road): Dr. Frederic Thomson. In Psychological Medicine (at the Colney Hatch Asylum): Dr. S. J. Gilfillan. In Tropical Medicine: Mr. James Cantlie. In Radiography and Medical Electricity: Dr. A. Howard Pirie. In the Administration of Anæsthetics: Dr. Hadfield, Mr. Trewby, and Dr. Dunkley. In Vaccine Therapy and Bacteriology: Dr. G. G. Macdonald. In Clinical Pathology and Pathological Chemistry: Dr. Hunter Duncan.

The opening lecture of the Winter Session will be given at the hospital at 4.30 P.M. in the third week in October by Sir J. Crichton-Browne, Bart. Further information, with prospectus and syllabus of lectures and demonstrations, may be obtained from the Dean of the school, Dr. A. J. Whiting, at the Hospital, or at 142, Harley-street, London, W

PROVINCIAL.

Birmingham.—At the University of Birmingham special courses for post-graduates have not yet been instituted, except in the subject of Advanced Bacteriology (January to March) and Clinical Pathology and Bacteriology (April to June) and a course of Veterinary Pathology and Bacteriology for Veterinary Practitioners (October to December), but the various departments of the University are open to graduates who can attend any of the systematic courses on payment of a fee. Graduates may also work in the laboratories under the supervision of the professors for a small fee to cover the incidental expenses. Applications for information should be made to the Dean. At the General and Queen's Hospitals Clinical Demonstrations for practitioners are given by members of the staff twice a week during the autumn term. All classes at the University and hospitals are open to men and women.

Bristol.—Courses of post-graduate instruction adapted to the requirements of those proceeding to the M.D. degree of the Universities, each lasting about 12 weeks, will be held at the Bristol Royal Infirmary and General Hospital. The course will consist of: (*a*) clinical demonstrations on cases selected from the wards and from out-patients in medicine, obstetrics, dermatology, and laryngology; and (*b*) tutorial classes in medicine, obstetrics, pathology, laryngology, bacteriology, and dermatology. Classes in clinical medicine will be held twice a week—once at the Infirmary and once at the Hospital—by Dr. F. H. Edgeworth at the Infirmary and by Dr. J. Michell Clarke and Dr. J. O. Symes at the Hospital. Classes in obstetrics will be held once a week on alternate weeks at the Infirmary and Hospital by Dr. Walter C. Swayne and Mr. D. C. Rayner respectively. A class in pathology will be taken once a week by Professor Walker Hall. Six demonstrations on dermatology will be given by Dr. J. A. Nixon and Dr. W. K. Wills at the Infirmary and Hospital. Six demonstrations on laryngology will be given by Dr Watson-Williams at the Infirmary. A tutorial class in medicine will be held on one evening a week by Dr. G. Parker, Dr. Newman Neild, and Dr. J. R. Charles in rotation, and a similar class in obstetrics will be taken once a week by Dr. Walter Swayne and Mr. Rayner alternately. The fees are as follows:—For the whole course, £7 7s.; for classes in clinical medicine, pathology, laryngology, and bacteriology and tutorial class in medicine, £5 5s.; for classes in obstetrics, pathology, and bacteriology, £3 3s.; and for clinical medicine and obstetrics only, £3 3s. Applications to attend the classes should be made to the Dean of Medicine, University of Bristol.

Cambridge.—Long vacation courses are held at Cambridge during the month of July and the first three weeks in August. This year the course included lectures and demonstrations on general and special pathology by Professor G. Sims Woodhead and Mr. T. S. P. Strangeways, on bacteriology for medical students by Dr. Louis Cobbett, an advanced course on bacteriology for students of sanitary science by Dr. G. S. Graham Smith, a course in pharmacology by Professor J. B. Bradbury and Dr. W. E. Dixon. The pathological and pharmacological laboratories are open to advanced students and graduates. Applications for information should be made early in the year to Mr. E. E. Stubbing, Pathological Laboratory Museum, Downing-street, Cambridge.

Leeds.—The Anatomical, Physiological, and Pathological Laboratories at the University of Leeds are at the disposal of qualified medical men for research or for routine work at specially arranged fees, and though there is no definite post-graduate course at the General Infirmary the work of this large teaching institution is very freely accessible to qualified medical men at reduced fees.

Liverpool.—At the University of Liverpool the department of Bio-chemistry, under the superintendence of Professor Benjamin Moore, is devoted chiefly to post-graduate teaching and research work upon chemistry in relationship to biology and medicine. The laboratory possesses a main room designed specially for research students in bio-chemistry. In this room there is ample accommodation for ten workers, each with independent working space. Competent students desirous of undertaking research in problems of either physiological or pathological chemistry can be supplied with accommodation in the Johnston Laboratory. Every assistance is given to such students, either in working out suitable problems of their own choosing, or the professor is prepared to suggest problems to persons having a knowledge of

bio-chemistry and desirous of carrying on work in that subject. Applications should be addressed to the Johnston Professor of Bio-chemistry at the laboratory. A course of lectures and practical work in the laboratory is given each term in comparative bacteriology and parasitology for army and colonial veterinary surgeons and others. Instruction may be obtained at the Johnston Laboratory and also at the farm station of the Incorporated Institute of Comparative Pathology on the methods of manufacture and testing of the various curative and preventive vaccines and sera used in medical and veterinary practice. Seven of the rooms on the first floor of the Johnston Laboratories are utilised for the purpose of the Liverpool Cancer Research carried on by the aid of the Sutton Timmis Fund. In the department of tropical pathology, under the guidance of Sir Ronald Ross and Professor R. Newstead special courses of laboratory instruction in bacteriology, parasitology, morbid histology, pathology, and medical entomology are given in each term in the Johnston tropical Laboratory at the University, or at the associated laboratory at Runcorn. On Mondays, Wednesdays, and Fridays, at 4 P.M., during the summer, autumn, and Lent terms, Mr. D. Douglas Crawford delivers a course of lectures and demonstrations in surgical and applied anatomy which is intended to meet the requirements of students preparing for their final professional examinations. A practical course on the clinical examination of the blood, the staining and identification of pathogenic bacteria, and on the bacteriological diagnosis of certain diseases will be given on Tuesdays and Thursdays, at 4 P.M., during the summer term, by Associate Professor Ernest E. Glynn, provided a sufficient number signify their intention of attending. Post-graduate courses are also given in operative surgery, ophthalmology, surgical diseases of children, skin and throat diseases, by the several lecturers appointed for those special courses of instruction. All post-graduate classes at the University are open to persons of either sex.

Manchester.—The plan adopted a few years ago at the University of Manchester of having special courses of lectures on medicine and surgery for qualified medical men has since that time been considerably modified. Classes are now held and lectures given on various special subjects, as, e.g., diseases of the heart, diseases of the respiratory organs, of the kidney, and so on, and the same obtains as to surgical matters. These lectures are designed to meet the wants of senior students and practitioners. During the past summer post-graduate clinical demonstrations have been given twice a week at the infirmary by members of the staff, and it is expected that a series of demonstrations, will be arranged for next summer. Classes for senior students and post-graduates are also held at the Ancoats Hospital. There are good opportunities also for post-graduate study at the special hospitals for diseases of the eye, throat, ear, and skin, &c., but no special demonstrations are given. The Public Health Department, under the direction of Professor S. Delépine, is largely attended by medical men, as are also the lectures given in the University on Sanitary Chemistry by Dr. Gilbert J. Fowler and the Hygiene course by Dr. E. J. Sidebotham. Facilities are also given for the pursuit of research work in the public health laboratories, and in this department the dates of post-graduate courses in pathology and bacteriology are announced in the laboratory and in the medical journals. There is no difficulty in Manchester in the way of any practitioner who wants to have his recollections revived or his knowledge enlarged and brought up to the present standard in accomplishing his wish. Facilities for research and post-graduate work are offered to women on the same terms as men.

Newcastle-upon-Tyne.—At the University of Durham courses of instruction are given in chemical and physical laboratory work and lectures are delivered on comparative pathology and practical bacteriology for the Diploma in Public Health and the Degree of Bachelor in Hygiene. All courses are open to women students and graduates.

Sheffield.—At the University of Sheffield post-graduate courses are held annually. The subjects vary from time to time and include medical and surgical anatomy, physiology of digestion and nutrition, pathology of the blood, clinical bacteriology, surgery, ophthalmic surgery, operative surgery, diseases of the nose, and diseases of the ear.

SCOTLAND.

Aberdeen.—Although there is no special provision at Aberdeen for post-graduate study such as exists in London, still there are some facilities for doing work of this nature at the University. There are fully equipped laboratories in anatomy, anthropometry, bacteriology, botany, chemistry, pharmacology, physics, physiology, public health, and zoology. Graduates or others desiring to engage in special study or research may be admitted by the Senatus to prosecute such study or research in any of the laboratories in accordance with certain provisions. Research students are exempted from payment of laboratory fees, but are required to matriculate each year, paying the ordinary matriculation fee (£1 1*s.* for winter and summer; 10*s.* 6*d.* for summer). Forms of application for admission as research students may be had from the Secretary of the Senatus. The fees are £3 3*s.* for six hours per week in winter or nine hours per week in summer, 10*s.* 6*d.* and 7*s.* being charged for every extra hour per week in winter and summer respectively. The fee for the Public Health Laboratory for six months is £6 6*s.*, and for the Bacteriological Laboratory for three months is £4 4*s.*, £3 3*s.* and £1 11*s.* 6*d.* being respectively charged for a half course or any less time. At the Royal Lunatic Asylum, accommodating above 700 patients (fees, £2 2*s.* for three months), arrangements are made for extra teaching in the higher departments of medical psychology and cerebral pathology for graduates who desire it or wish to obtain the certificate of the Medico-Psychological Association of Great Britain and Ireland. Clinical work may be done at the following places:—(General Hospital): Aberdeen Royal Infirmary (accommodating 200 patients; perpetual ticket £6, or first year £3 10*s.* and second year £3, thereafter free); Sick Children's Hospital (75 patients; first year £2 2*s.*, then £1 1*s.*); City (Fever) Hospital (100 beds; £1 1*s.* for three months); General Dispensary and Lying-in and Vaccine Institution (10,000 out-patients per annum; a fee of £3 3*s.* for the general practice of the Institution, a fee of £1 1*s.* for the certificate of Vaccination, and a fee of £3 3*s.* for the Maternity Practice); and Ophthalmic Institution (16,000 patients per annum, fee £1 1*s.*). During the summer session (April to June) special classes, each costing £2 2*s.*, are held at the Royal Infirmary, the subjects being Diseases of the Skin, Medical Electricity, Dental Surgery, Anæsthetics, Ophthalmology, and Gynæcology. Lectures on Diseases of the Ear and Throat are given at the Dispensary. All these facilities for post-graduate study are open to medical practitioners generally.

Edinburgh.—Post-graduate teaching now occupies a recognised place in the Edinburgh School, the arrangements connected therewith being entrusted to a committee consisting of representatives appointed by the Faculty of Medicine of the University and the Royal Colleges. Exceptional facilities for post-graduate instruction are afforded during the summer vacation. Three courses are held at this time—viz., a course on Internal Medicine during August and both a Surgical and General Course during September. (*a*) The course on Internal Medicine, which will extend for four weeks, will comprise classes upon medical anatomy (10 hours), the clinical examination of the blood (15 hours), clinical bacteriology (15 hours), the examination of the heart (29 hours), the examination of the nervous system (20 hours), the examination of urine and digestive products (20 hours), and the examination of sick children (10 hours), in addition to a series of 40 specially arranged clinics dealing with diseases of the heart, lungs, blood and ductless glands, nervous system, stomach and kidneys, abdomen, and general diseases. The entries for this course will be limited to 25, and the fee will be 10 guineas. (*b*) The Surgical Course will include classes upon surgical anatomy (20 hours), surgical pathology (20 hours), and operative surgery upon the cadaver (30 hours), in addition to specially arranged daily clinics. The entries for the Surgical Course will be limited to 25, and the fee will be 10 guineas. (*c*) The General Course, subdivided into two independent fortnights, will also continue for four weeks. Among the subjects included in this course are medical anatomy, the medical and surgical affections of children, the medical inspection of school children, lectures upon infant feeding, demonstrations upon the pathology of the eye, clinics on medicine, surgery, infectious diseases, neurology, venereal diseases, diseases of the eye, demonstrations on morbid anatomy, &c. The fee for the course will be 5 guineas, or 3 guineas for either fortnight. In addition to the subjects above mentioned the following classes, the attendance upon which is necessarily limited, are open to graduates who have

entered for the General and Surgical Course upon payment of an additional fee of 1 guinea in each instance: bacteriology, diseases of the blood, diseases of the ear, nose, and throat, ophthalmoscopy, errors of refraction, gynæcology, histological methods employed in medical diagnosis, and X ray and electrical work. Further special lectures have been arranged for dealing with the progress of medicine in its various departments during the past ten years. These lectures are open to local practitioners as well as to graduates attending the September courses. Accommodation may be obtained during September at one of the residences of the University Hall. Information regarding other accommodation may be obtained from the Secretary. The committee of the University Union has decided to open the building during September, and gentlemen attending the course are eligible for temporary membership for one month on payment of a fee of 10*s*. The Union, which adjoins the University buildings, contains a good medical library, reading-rooms, dining hall, smoking-room, billiard-room, &c. Copies of the syllabus of both the August and September courses may be obtained from the Secretary, Faculty Office, University New Buildings, Edinburgh. The course of instruction is open to graduates of either sex.

Glasgow.—At Glasgow the possibilities for post-graduate work are considerable, and in almost every department graduates, both male and female, have opportunities for acquiring more special knowledge or carrying on original work. In pathology, courses in Practical Bacteriology and Pathological Histology for graduates will be commenced in the pathological department of the Western Infirmary about the middle of October. The courses will extend over eight weeks, each class meeting thrice weekly. The fee for either course is £3 3*s*., and for both courses £5 5*s*. In the Pathological Institute there is a limited number of rooms specially fitted up for research work, and arrangements can be made for graduates who are desirous of engaging in work of this nature. Those interested in embryology may take out the practical course, or if they desire to do special work may obtain the use of a table in the embryology laboratory with such guidance and help as the lecturer can give. The University also has the right of nomination to a table in the laboratory of the Marine Biological Station at Millport. This station is happily circumstanced as regards the richness and variety of the fauna, which can readily be obtained and kept alive in the tank rooms under approximately natural conditions. It thus offers facilities for various kinds of biological study and particularly for physiological and pharmacological work on the marine invertebrates. Further information regarding the station can be got from the honorary secretary, Mr. Geo. Middleton, 83, Bath-street, Glasgow. Post-graduate instruction in public health laboratory work is given in the University laboratory during both winter and summer sessions, and opportunities are offered under prescribed conditions for original research work. As regards physiology and materia medica, every facility is afforded to those wishing to engage in original research work. During the winter months classes in physiological chemistry and physiological psychology will be conducted by the University lecturers in these subjects. At Anderson's College Medical School the Public Health Laboratory course, conducted by Dr. Carstairs Douglas, is open to all qualified medical practitioners (including women), and is recognised for the Diploma in Public Health by the University of Cambridge, the Scottish Conjoint Board, and the Irish Colleges. The laboratory is fully equipped and the complete course in Chemistry, Bacteriology, and Microscopy is carried out. It is supplemented when desired by a three months' course of lectures on Sanitation, Vital Statistics, and Sanitary Law, attendance on which enables candidates to dispense with three months of the outdoor Public Health work. The course will commence about the middle of October. As regards Operative Surgery, graduates desirous of taking out a course in this subject can obtain the necessary facilities by arrangement with the Dean of Anderson's College. The new Maternity Hospital gives exceptional scope for post-graduate work. There are 110 beds and a large outdoor department. Gynæcological wards were opened last winter and are now available for teaching purposes. The fees for post-graduate work are £3 3*s*. for a month, £6 6*s*. for three months, and £10 10*s*. for six months. There is also a residence in the hospital grounds for 15 men, and available both for graduates and students, board and lodging being charged at £1 7*s*. 6*d*. per week. Post-graduate classes are conducted at the Royal Infirmary during the autumn months. The different courses are as follows:—1. Clinical Medicine: Dr. T. K. Monro, at 4.30 P.M. on Thursdays, Sept. 7th, 14th, 21st, and 28th; Dr. J. M. Cowan, at 4 P.M. on Tuesdays, Sept. 12th, 19th, and 26th; and Dr. J. B. Mackenzie Anderson, at 4 P.M. on Mondays, Sept. 4th, 11th, 18th, and 25th. 2. Clinical Surgery: Dr. J. H. Pringle, at 11 A.M. on Monday, Wednesday, and Friday, Sept. 6th, 8th, and 11th; and Dr. John Patrick, at 9.15 A.M. daily during September. 3. Hæmatology: Dr. Walter K. Hunter, at 4 P.M. on Wednesdays, Sept. 6th, 13th, 20th, 27th, and Oct. 4th. 4. Surgical Diseases of the Urinary Organs: Dr. David Newman, at 3 P.M. on Wednesdays, Sept. 6th, 13th, 20th, and 27th. 5. Clinical Examination of the Urine: Dr. John Henderson, at 10 A.M. on Mondays and Thursdays, Sept. 4th, 7th, 11th, 14th, 18th, and 21st. 6. Clinical Gynæcology: Dr. G. Balfour Marshall, at 9 A.M. on Thursdays, Sept. 7th, 14th, 21st, and 28th. 7. Diseases of Throat, Nose, and Œsophagus (A): Dr. John Macintyre, at 4 P.M. on Tuesdays and Fridays, Sept. 5th, 8th, 12th, 15th, 19th, and 22nd. 8. Diseases of the Ear: Dr. J. Kerr Love, at 4 P.M. on Wednesdays, Sept. 6th, 13th, 20th, and 27th. 9. Diseases of the Eye: Dr. A. Maitland Ramsay, at 2 P.M. on Mondays, Wednesdays, and Thursdays, and at 8 P.M. on Tuesdays and Fridays during September. 10. Diseases of the Skin: Dr. Alex. Morton, at 11 A.M. on Mondays and Wednesdays, Sept. 6th, 11th, 13th, 18th, and 20th. 11. Diseases of the Throat and Nose (B): Dr. Robert Fullerton, at 10 A.M. on Tuesdays and Fridays, during September. 12. Asthma and Related Nasal and Pulmonary Conditions: Dr. James Adam, at 4 P.M. on Thursdays, Sept. 7th, 14th, 21st, and 28th. 13. Venereal Diseases: Dr. A. N. Macgregor, at 3 P.M. on Mondays, Sept. 4th, 11th, 18th, and 25th. 14. Surgical Diagnosis: Mr. Donald Duff, at 4 P.M. on Fridays, Sept. 1st, 8th, 15th, 22nd, and 29th. 15. Electro-therapeutics: Mr. James R. Riddell, at 9.30 A.M. on Tuesdays and Fridays, Sept. 5th, 8th, 12th, 15th, 19th, 22nd, 26th, and 29th. 16. Vaccine Therapy and Opsonic Technique: Mr. J. A. Campbell, at 2 P.M. daily, from Sept. 18th to 22nd. 17. Immunity: Dr. E. T. Fraser, at 2 P.M. daily from Sept. 11th to 15th. 18. Anæsthetics: Dr. John Donald, at 3 P.M. on Fridays, Sept. 8th, 15th, 22nd, and 29th. The fee for attendance at each of the above classes is £1 1*s*.; for any three of them, £2 2*s*. 19. Gynæcology: Dr. A. G. Banks, at 10 A.M. on Tuesdays, Thursdays, and Saturdays during September. Fee for course, £2 2*s*. 20. Operative Surgery: Mr. Henry Rutherfurd and Mr. James Battersby, at 12 noon daily, beginning Sept. 4th; fee, £3 3*s*. 21. Bacteriology: Mr. David M'Crorie, five days a week for three months, beginning Oct. 10th; fee, £3 3*s*.

IRELAND.

Belfast.—At the Queen's University of Belfast a course in Clinical Pathology, consisting chiefly in practical instruction, has been given hitherto during the summer session, and, should a sufficient number desire to attend, a post-graduate course of practical work in the application of methods of chemical physiology to clinical investigation is also held open to practitioners. A course in Clinical Pathology or Bacteriology is given to medical practitioners, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in this department for the public health committee of the Belfast corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, and the diagnosis of cases of infectious diseases. Subject to the number of students presenting themselves, arrangements are made for the necessary practical instruction (1) in the chemical laboratories; (2) in the pathological and bacteriological laboratories; and (3) for outdoor sanitary work under the medical officer of health of Belfast. These courses have been approved by the Privy Council in connexion with the degree of M.D. in State Medicine in the University of London. The certificates of these courses are also accepted for the Diploma in Public Health granted by the Queen's University of Belfast, the University of Cambridge, and the various licensing bodies. Post-graduate courses are open to practitioners of both sexes.

Post-Graduate Research Fund.—Grants from this fund may be obtained by graduates in medicine of the University of Belfast of not more than three years' standing. Such research grants are available for graduates who desire to

prosecute original research or clinical study in some department of medicine. Applicants must give such evidence of capacity for the work which they desire to prosecute as shall appear satisfactory to the Faculty of Medicine. The holders of such grants must furnish reports of their work either during the prosecution of, or at the close of, their studies. Further information regarding these research grants may be obtained from the Secretary of the University, to whom all applications must be forwarded.

It is proposed to give opportunities for advanced clinical work to graduates at the Royal Victoria Hospital, Belfast. The clinical rooms will afford excellent facilities for carrying on such work. For further information and particulars application should be made to Dr. R. J. Johnstone, honorary secretary, medical staff, 17, University-square, Belfast, or at the hospital.

Cork.—At University College a post-graduate course has been held hitherto for the Diploma in Public Health, including Chemistry, by Professor A. E. Dixon; Public Health, by Mr. D. Donovan, public health officer of the city of Cork; and Bacteriology, by Professor A. E. Moore. Other professors and lecturers would also give post-graduate courses if requested to do so. No post-graduate courses have up to the present been held at the hospitals. All the College and hospital courses are open to men and women students.

Dublin.—Trinity College and the Royal College of Surgeons each make arrangements for a course of post-graduate instruction in the year. The course arranged by Trinity College is held in September–October and occupies three weeks. Instruction is usually given in the following 11 subjects: Medicine, Surgery, Gynæcology, Diseases of Eye, Diseases of Throat, Nose, and Ear, Diseases of Skin, Pathology, Anatomy, Physiology, X Ray Work, and Cystoscopy. One or two teachers deal with each subject, and a detailed syllabus is published beforehand, care being taken to choose matters of particular interest at the time. The courses in pathology, anatomy, and physiology are designed with special bearings on clinical problems. The classes are held in the School of Physic, Trinity College, and in Sir Patrick Dun's, the Adelaide, the Royal City of Dublin, the Rotunda, and the Royal Victoria Eye and Ear Hospitals. Arrangements are made by which a limited number of members of the class can reside in College rooms and dine on commons, at an inclusive cost of £1 1*s.* per week. The composite fee for the entire course is £5 5*s.* The autumn course for 1911 will begin on Sept. 25th and end on Oct. 14th. Full particulars can be obtained from the honorary secretary, 27, Lower Fitzwilliam-street, Dublin.

The post-graduate courses arranged under the auspices of the President and Council of the Royal College of Surgeons in Ireland have hitherto proved a most gratifying success. The object of these courses is to render available the whole of the clinical material in the city for the post-graduate student, so that he may see as much as possible during the brief time at his disposal. With this object in view the ten general hospitals of the city are included (Richmond, Jervis-street, Adelaide, St. Vincent's, Dr. Steevens', Mater Misericordiæ, Meath, Mercer's, Royal City of Dublin, and Sir Patrick Dun's), and also the various hospitals which are devoted to "specialties." The opportunities afforded are shown by a glance at the list of special subjects and the institutions where they are respectively cultivated: Skin, Adelaide Hospital; Eye and Ear, Royal Victoria Eye and Ear Hospital; Throat and Nose, Mater Misericordiæ Hospital and Sir Patrick Dun's Hospital; Gynæcology, Rotunda Hospital, Coombe Hospital, and National Maternity Hospital; X Ray and Light Therapeutics, Meath Hospital and Sir Patrick Dun's Hospital; Pathology and Bacteriology, Richmond, Whitworth, and Hardwicke Hospitals, Mater Misericordiæ Hospital, Meath Hospital, and School of Surgery, Royal College of Surgeons; Diseases of Children, Orthopædic Hospital, Temple-street Hospital, and Harcourt-street Hospital; Lunacy, Richmond District Lunatic Asylum; Anæsthetics, Dental Hospital; Cadaver Operations, Professors at Schools of Surgery, R.C.S.I.; Anatomy, Professor of Anatomy, R.C.S.I.; Sanitary Science, Professor of Hygiene, R.C.S.I. The course for 1911 will begin on Monday, Sept. 18th, and will terminate on Oct. 10th following. Fee for course, inclusive of all, £5 5*s.* Full details regarding the course can be obtained from, and all applications are to be addressed to, the Professor of Anatomy, Royal College of Surgeons in Ireland. A list of addresses of apartments and hotels, which have agreed to modified rates for pupils while passing through the course, can be obtained by application at the Royal College of Surgeons.

In addition to the special courses detailed above, arrangements can be made at the various laboratories and hospitals for individual post-graduate work. In particular the practice of the maternity hospitals, the Rotunda, the Coombe, and the National Lying-in, is made much use of by graduates from all parts of the world.

All courses are open to women practitioners on the same terms as to men.

THE TRAINING OF CADETS IN THE MEDICAL UNIT OF THE CAMBRIDGE UNIVERSITY OFFICERS' TRAINING CORPS.

BY H. BUCKLEY RODERICK, M.A., M.D. CANTAB.,
UNIVERSITY DEMONSTRATOR OF SURGERY; OFFICER COMMANDING MEDICAL UNIT, C.U.O.T.C.

THE medical unit of the Cambridge University Officers' Training Corps has been established three years, and the scheme of training of the cadets, which at first, of necessity, was of an experimental nature, has now taken definite shape and resolved itself into:—(A) Individual instruction, consisting (1) of lectures and demonstrations, and (2) of drills; and (B) the exercising of the medical unit as a whole in the field.

A. *Individual Instruction.*

1. *Lectures and demonstrations.*—Owing to the multifarious lectures and demonstrations which the medical student is compelled to attend in the course of his ordinary studies there is little time or inclination left for much instruction of this nature. It has, therefore, been found sufficient to confine this branch of the training to one lecture a week. During the Michaelmas term a course of lectures and demonstrations is given in first aid, dressing and healing of wounds, antiseptic principles, preparation of a patient, instruments, &c., for operation, and the application of triangular and roller bandages. The Lent term is devoted to lectures on military hygiene and sanitation and the general organisation of the Army and of Field Medical Units and the work of Field Medical Units in the field. Owing to the nearness of the triposes and M.B. Examinations no lectures are given during the Easter term.

2. *Drills.*—During the Michaelmas and Lent terms squad, company, and stretcher drills are held every week at times to suit the convenience of cadets. During the Easter term the work is confined to early morning (7 A.M.) parades twice a week. The annual inspection of the corps takes place in the Easter term and necessitates some practice in ceremonial drill. Otherwise nothing more is attempted during the Easter term.

B. *The Exercising of the Medical Unit as a Whole in the Field.*

This has resolved itself into the holding of two field days a term—i.e., Michaelmas and Lent. In one a small scheme is worked out in detail, whilst in the other an extensive scheme is worked out in skeleton. In the former the unit takes the field as a section of a field ambulance and falling in with the general scheme of the corps the tent division establishes a dressing station on a suitable site near the scene of operations, subsequently converting it into a tent division company, pitching the operating tent, bell tents, and bivouacs, and constructing trench kitchens, latrines, incinerators, and slop sinks. The bearer division search for, and attend to, the "wounded," on whom "tallies" are fixed stating the nature of the wound, and convey them on stretchers to the ambulance wagons at the wagon rendezvous and thence back to the dressing station. The cadets are thus made acquainted with the detailed work of a section of a field ambulance, which they, in fact, represent.

On the second field day in each term a more extensive scheme is attempted, and the unit is made to represent in skeleton perhaps three field ambulances (i.e., the medical establishment of a division) depending on the nature of the scheme. On these occasions the cadets parade with bicycles at the medical schools which represents the headquarters of the "administrative medical officer." Here they are informed of the "general idea" of the day's battle and receive their special orders and instructions before proceeding to their respective localities. On these days

Colonel James, C.B., R A.M.C., of the War Office staff, and one or more other officers of experience act as umpires, and every member of the unit represents an officer with responsible duties to perform. On the completion of the operations the members of the unit reassemble at the medical schools, where each cadet makes his report, which is criticised by the umpires.

To illustrate the work done on these occasions a cadet is commanded to proceed to the scene of action and choose a site for a dressing station; he is instructed to take advantage of existing buildings for the harbouring of the wounded, to calculate the number of patients each building would hold, and to report as to the suitability of such buildings for the purpose. The accessibility to main roads and railway lines, and in the case of the latter the existence or not, and the capacity, of sidings for the loading of ambulance trains, are to be reported upon, and the cadet is to estimate the quantity and ascertain the quality of the water-supplies and the available food-supply in the district in the shape of cattle and sheep, fowls, milk, eggs, corn, &c. He is also instructed to note the number of sacks and hurdles, and to estimate the quantity of straw available for the extemporising of stretchers and bedding, and the number of farm wagons, carts, and horses obtainable to supplement or relieve the ambulances for the conveyance of the wounded to the clearing hospital. He has also to calculate the number of wagons required to convey the estimated wounded under his charge and the probable time that would be taken in evacuating all his wounded.

From the experience gained in two such field days the cadet should be able to grasp both the detailed work of a section of a field ambulance and also the means employed in collecting, providing for, and evacuating a large number of casualties from an extensive field of battle to the clearing hospital.

The time at the disposal of the medical undergraduate to give to "soldiering" is very little after he has satisfied the requirements of his college tutor and college clubs, so that unless the work of the unit can be made interesting enough to form one of his recreations it is difficult to persuade him, on purely patriotic motives, that it is one of his duties to join the corps. It is therefore very satisfactory to be able to state that the medical unit is rapidly gaining in popularity, and that its members are drawn from the best all-round men in the colleges.

Thus the cadet, during the first years of his medical education, has the opportunity, by way of a recreation one may say, of gaining a practical insight into the detail of first aid in all its branches, into the technique of minor surgery, into the hygienic problems that arise in ordinary simple life, and into many other subjects not included in the medical curriculum. He is not likely to have such opportunities later in his career, as his time is indeed more than fully occupied.

It would seem that this simple training not only teaches the student how an organised body of men is managed and cared for, but it instils into him the rudiments of a business training and business methods, together with an orderly and methodical way of dealing with problems of organisation which is invaluable to, but only too rarely found in, the average medical man. It also materially helps him to obtain a wider outlook of his own future and a broader view of the objects of his studies in the earlier period of his career.

INSTRUCTION IN HOSPITAL ADMINISTRATION.—The Metropolitan Asylums Board has instituted a three months' course of lectures and demonstrations in hospital administration at the North-Western Hospital and at the Grove Hospital, Tooting. At the North-Western Hospital the lectures will commence on Monday, Oct. 9th, and will be continued on successive Mondays (3 P.M.) and Thursdays (11 A.M.). At the Grove Hospital the lectures will commence on Wednesday, Oct. 4th, and will be continued on successive Saturdays (11 A M.) and Wednesdays (3 P.M.). The fee for the course is £3 3*s*. In the case of each hospital the lectures and demonstrations on the two days in any one week will be identical. Students can attend on the day that best suits them, and they can join the class at any time provided they complete their attendance during the term beginning in January, 1912. The fee must be paid in advance to the clerk of the Metropolitan Asylums Board, Embankment, London, E.C.

Annotations.

"Ne quid nimis."

THE POSTPONEMENT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

THE Organising Committee of the Seventh International Congress on Tuberculosis has issued a circular stating that the postponement of this Congress from September, 1911, to April, 1912, was desired by many foreign committees, and is generally approved. The circular goes on to say that, according to the last number of *La Tubercolosi*, the official organ of the Congress, it appears that from June last the scientific and general organisation or preparation for the Congress was "in the best conditions." Nearly all the reports had arrived and many papers had been received and announced, says the circular, adding, "the postponement, however, will help to definitively coördinate the contributions from all nations, and ensure the most widespread coöperation of all the civilised world in the great scientific and humanitarian meeting to be held in Rome in April, 1912." It must be confessed that this is an unsatisfactory document. Had the committee plainly stated that the danger of cholera was such that it was thought on all accounts, and notwithstanding the great inconvenience that must ensue, more prudent to postpone the Congress, it is doubtful if a murmur would have arisen, and certainly on all sides the sincerest sympathy would have been expressed. As for reports and papers, a large number are always sent too late; and this does not in the least matter, for they are generally far too numerous to be read or discussed. Postponing the Congress, with all the counter orders this entails, has gravely complicated matters, and such an act seems justifiable only in the face of so grave an affair as the probable spread to Rome of the actual cholera epidemic. But little thought seems to have been given to those coming from far distant regions—Australasia, for instance—who, in order to arrive in time, must actually have started before the postponement was announced. But over and above this individual hardship the committee must have known that in September, 1912, the Fifteenth International Congress of Hygiene and Demography meets at Washington. There are no two congresses more closely allied. Those who attend the parent Congress of Hygiene also endeavour to assist at the Congress on Tuberculosis. The same sanitary reformers meet at these two congresses and their intercourse becomes more intimate and more useful. But how many will be able to afford the money and the time to go to Italy next spring and to the United States in the autumn of next year? Instead of being 12 months apart the congresses will be only six months apart, and this must be mutually injurious. If there is real danger of cholera of course these grave inconveniences cannot be helped; but if, as is suggested in the circular, it is merely to allow a committee more time to sort a few papers, then the postponement has been, we think, injudicious. This occurrence is a good illustration of the necessity for a permanent international committee in respect of all these congresses. At the meeting of the International Association of the Medical Press in Budapest two years ago it was maintained that such a committee should take in hand the organisation, not merely of medical congresses, but of congresses of the allied sciences. The object was to unify where possible and to prevent overlapping or clashing. Such a committee would have kept well before the organisers of the congress at Rome the fact that the congress at Washington was to follow shortly afterwards. If an international committee, having in view the interests of all the other congresses, had given its

consent to the postponement of the congress of Rome, then, however regrettable such a course might be, it would have been felt that what was done was done for the best. As it is, great hardship has already been inflicted on individuals, and the interests of two congresses have been endangered by being brought into opposition.

THE VALUE OF SKIAGRAMS IN FRACTURES AND DISLOCATIONS.

FROM time to time cases occur in which disputes arise as to whether a fracture had resulted from an injury, and not seldom these cases come before courts of law in suits for compensation for injury or for malpraxis. In cases such as these the value of a skiagram taken soon after the receipt of the injury will go far to settle the question as to what lesion was present. The skiagram must be carefully taken and must be correctly interpreted. An important case was decided at the Nottingham county court recently, when an unsuccessful action for compensation was brought against Dr. A. Campbell of Radcliffe. Nearly a year ago a boy fell and hurt his right arm, and it was found that a dislocation of the ulna had occurred, and that it recurred after being replaced. There was some conflict of testimony as to the diagnosis first made, but there was no difference of opinion as to the fact that Dr. Campbell mentioned a dislocation on the third day. The parents appeared to doubt the need for the arm being moved during the making of a diagnosis, not seeing the impossibility of making a clinical diagnosis without movement. It is not improbable, if the information supplied in the report of the case in the *Nottingham Daily Express* is exact, that the coronoid process of the ulna was broken, so allowing recurrence of the dislocation. In a case such as this much of the misunderstanding would have been avoided had a skiagram been taken when the patient was first seen or soon afterwards, so that the diagnosis could have been confirmed. Dislocations and fractures in the neighbourhood of the elbow are often exceedingly puzzling to the most experienced surgeons, and the importance of the evidence afforded by a skiagram both for diagnosis and as a permanent record of the condition at the time should not be overlooked. There are fractures which yield no signs to ordinary clinical methods of diagnosis, and only the introduction of the X rays has enabled us to determine their presence. Therefore on all accounts surgeons should become more ready to take advantage of the information supplied by X rays. It is not sufficient to use a screen, for this, as a rule, affords less assistance in diagnosis and constitutes no record.

PARLIAMENT adjourned on Tuesday, August 22nd, until the end of October. It will then take up the further consideration of the National Insurance Bill among other measures which it has been found impossible to pass within the limits of an ordinary session.

WE understand that the committee for the removal of King's College Hospital to South London has received a cheque for £10,000 from an anonymous donor in aid of the fund.

WE regret to announce the death of Dr. George Fielding Blandford, the well-known alienist, which occurred on Friday last at his residence, "Woodlands," Camden Park, Tunbridge Wells.

BY an obvious error in our obituary notice of Dr. Gee last week Dr. Charles Hilton Fagge was described as an obstetrician. The allusion was, of course, to Dr. Gee's contemporary, the famous physician.

Correspondence.

"Audi alteram partem."

THE BACTERIOLOGY OF THE TOOTH-BRUSH.

To the Editor of THE LANCET.

SIR,—My attention has been drawn to the paper by Mr. Herbert Smale and Dr. D. W. Carmalt Jones read in the Section of Odontology at the recent meeting of the British Medical Association and published in THE LANCET of August 5th, p. 380, on a subject which happens recently to have been engaging my special attention—viz., the bacteriology of the tooth-brush. The conclusions at which I have arrived differ so essentially from those arrived at by the authors of the paper in question that I trust you will allow me the opportunity of making them public.

I see in the paper no reference to the condition of the mouth itself, and it may therefore be news to the authors that on waking in the morning I have found the mouth itself to contain about 3000 million bacteria capable of being removed by a fivefold rinsing with 25 c.c. of water each time. After ordinary washing of the teeth with a hard tooth-brush about one-fourth the number could still be rinsed away. After using, on another occasion of course, euthymol tooth paste, 120 millions only were left. Even the smallest of these numbers is so enormously in excess of the number which could be left on any ordinary tooth-brush, especially after becoming dry, as is usually the case, that the stress laid upon the latter as a lethal instrument is calculated rather to raise a smile than to inspire fear. If, in addition, the toothbrush has been used with a really germicidal tooth-paste or tooth-wash, containing soap as one of its ingredients, I must ask leave to doubt whether the point raised is worth considering at all.

In view of Martindale's well-known work upon the essential oils as germicides, it is not surprising to find that the paste referred to has an actual phenol coefficient of 0·3—i.e., that it is equal to 30 per cent. phenol in germicidal power—so that the authors' remark as to the inefficiency of tooth-pastes, at least, in destroying germs is by no means borne out by my experience.

Not desiring to further particularise, I refrain from enlarging on the results which I have obtained, but the tendency of the paper, as printed, is so unnecessarily pessimistic that I felt bound to give something on the experimental side to set against it.

I am, Sir, yours faithfully,

EDWARD C. BOUSFIELD, D.P.H. Camb. & Lond.,
Bacteriologist for the Metropolitan Boroughs of Camberwell and Hackney.

Denmark-hill, London, S.E., August 20th, 1911.

ENDEMIC TETANY IN THE GILGIT VALLEY.

To the Editor of THE LANCET.

SIR,—In my article on the above subject, which appeared in THE LANCET of June 10th, p. 1575, the passages, "The disease is a common one in India," and, "In India tetany is a disease of women," should read as follows: "The disease is a common one in Gilgit," and, "In Gilgit tetany is a disease of women."

I am Sir, yours faithfully,

Gilgit, Kashmir, July 24th, 1911. ROBERT MCCARRISON.

TATTOOING *v.* VACCINATION.

To the Editor of THE LANCET.

SIR,—May I inquire, as a layman interested in the public health, whether it is an accepted medical opinion that tattooing will act as a protection against small-pox, and if so what may be the scientific explanation, and upon what evidence the opinion may be founded. As personally I had never heard of such a thing until recently, I may perhaps say that I was speaking to a workman who had his sleeves

rolled up and noticed that his arms were very heavily tattooed. They were so covered with dragons and decorated patterns of an Oriental type that very little skin could be seen, and I asked him where they were done. He told me that he had been tattooed in Burma when serving in some regiment, I forget which, and in reply to questions which I omit, added that the pain and inconvenience had not been serious, or not serious enough to interfere greatly with his military duties; that the colonel of his battalion had encouraged, and almost ordered, men and officers to be done; that a man who chose to "have a pair of Burmese drawers put on him" (i.e., to be closely tattooed over those portions of the body and legs that a pair of drawers would cover) was allowed eighteen days of light duty to enable him to submit and recover. When I asked the reason of this he said that "the doctor" said that tattooing was as good as vaccination as tattooed people never took small-pox, at least when the tattooing was more or less recent.

The tattooing in his case seemed to be of the ordinary kind executed with Indian ink, and perhaps if there is anything unusual or not generally known in what I have described the surgeon in question, whom I understood to be an Irishman, may notice my letter and will be able to give the explanation. This, of course, may be that my ex-soldier friend had an inventive mind, but I think he spoke in perfect seriousness; and, again, the whole thing may be so well known as to be of no general interest. To suggest that public vaccinators should learn design at South Kensington and offer to cover the children of reluctant parents with conventional sunflowers and coats-of-arms or moral precepts according to their rank and condition as an alternative to vaccinating them seems to savour of frivolity.

I am, Sir, yours faithfully,

August 21st, 1911. E. A. A.

*** The notion that tattooing is protective against small-pox is, of course, absurd.—ED. L.

Medical News.

PHARMACEUTICAL EDUCATION AND EXAMINATION.—In order to qualify as a pharmacist in Great Britain it is necessary to be 21 years of age, to have passed an approved preliminary examination, to have been for three years practically engaged in the translation and dispensing of prescriptions, and to have passed the minor examination of the Pharmaceutical Society. The subjects which must be included in the approved preliminary examination are English, Latin, a modern foreign language, arithmetic, algebra, and Euclid. No certificate can be accepted unless it has been granted for the whole of these subjects. To become eligible to enter for the minor examination the candidate must be registered as an "apprentice or student," and such registration may be secured through the Registrar of the Pharmaceutical Society, 17, Bloomsbury-square, London, W.C., to whom a certificate of the preliminary examination must be sent. The subjects of the minor examination are botany, chemistry and physics, practical chemistry, materia medica, pharmacy, practical pharmacy and dispensing, and prescription reading. The fee for the examination is 10 guineas, but a candidate who has attended and failed to pass may re-enter for the examination on payment of a reduced fee of 3 guineas. Persons who pass this examination are registered as chemists and druggists. The advanced or major examination entitles those who pass it to registration as "pharmaceutical chemists." The subjects of the examination are botany, chemistry and physics, practical chemistry, and materia medica, and the entrance fee is 3 guineas.

UNIVERSITY OF GLASGOW AND WESTERN INFIRMARY MEDICAL HOSTELS.—The committee in charge of these hostels, consisting of Principal Sir Donald Macalister, Lady Macalister, Professor R. Muir, Dr. D. J. Mackintosh, Dr. and Mrs. Crawford Renton, and Mr. J. W. Gourlay, desire to make public acknowledgment to the donors who contributed £1000 towards defraying the expenses. Two hostels in telephonic communication with the Western Infirmary have been opened, and both have been full from the outset, as the students attending the infirmary realise the great value of the facilities for securing extra clinical instruction in urgent medical or surgical cases. These are the first hostels for medical students adjacent to, and in direct telephonic communication with, an infirmary to be opened in Scotland. The charge for board and lodging is one guinea per week, and, so far, this has sufficed to make the hostels self-supporting, which is what the committee have aimed at. As the success of the experiment is now demonstrated, the committee look forward to opening a permanent residency, capable of accommodating 25 students. For the initial expenses of adapting and furnishing a suitable house, they are inviting contributions from the public, which may be sent to Mr. John W. Gourlay, 124, St. Vincent-street, Glasgow, or to any member of the committee.

Births, Marriages, and Deaths.

BIRTHS.

TURTLE.—On August 18th, at 18, Cambridge-terrace, Hyde Park, the wife of Godfrey de Bec Turtle, M.D., M.R.C.P., of a son.

MARRIAGES.

HONEYBOURNE—SANDILAND.—On August 16th, at St. Peter's, De Beauvoir-square, by the Rev. A. J. Parsons, M.A., cousin to the bridegroom, assisted by the Rev. H. Fuller, M.A., H. Cecil Honeybourne, M.A., younger son of J. C. Honeybourne, M.A., head master of Guildford Grammar School, to Daisy, younger daughter of A. H. Sandiland, L.R.C.P.Lond., of Oakley House, Southgate-road, N.

DEATHS.

BEADLES.—On August 19th, at Dover, Arthur Beadles, M.R.C.S. Eng., L.S.A., late of Forest Hill, S.E., son of the late John Nathaniel Beadles, M.R.C.S. Eng., of Broadway, Worcestershire, aged 72.

COUTTS.—On August 21st, suddenly, at 29, Surrey-street, Norwich, D. K. Coutts, F.R.C.S.

JEAFFRESON.—On August 17th, at Framlingham, George Edwards Jeaffreson, J.P., M.R.C.S., L.S.A., aged 76, son of the late Wm. Jeaffreson, F.R.C.S., of Framlingham.

Notes, Short Comments, and Answers to Correspondents.

THE POPLAR AND STEPNEY SICK ASYLUM.

IT has been announced that "a girl who belongs to a poor family" has given the sum of £50 to the nurses of the Poplar and Stepney Sick Asylum in recognition of the attention and care bestowed by them on her brother who was an inmate of the institution. The gift would have been a generous one even from a well-to-do person; under the limitations of conditions as stated above it deserves to be classed with the munificent donations made at rare intervals by the wealthy to the public treasury of the service of the healing art in its various branches. The gift, it is understood, will be used to establish a library for the nursing staff, each volume of which will have placed in it an extract from the letter of thanks accompanying the gift. The donor in this act has honoured not only the nurses and herself, but the class to which she belongs.

H. J. T. will find no other parties to the contract upon which he desires to enter.

M.D.—The honorary secretary of the Continental Anglo-American Medical Society is Dr. Charles G. Jarvis, 81, Boulevard Malesherbes, Paris (8e).

METEOROLOGICAL READINGS.

(Taken daily at 12 noon by Steward's Instruments.)

THE LANCET Office, August 22nd, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 16	30·15	N.E.	...	118	75	57	55	60	Cloudy
,, 17	30·18	S.W.	...	119	83	60	61	64	Overcast
,, 18	30·01	S.W.	...	127	84	63	61	67	Fine
,, 19	29·90	E.	...	114	78	61	61	63	Fine
,, 20	29·80	E.	0·42	121	83	62	61	64	Fine
,, 21	29·57	S.	0·38	95	72	63	64	65	Raining
,, 22	29·67	N.E.	0·13	82	68	62	62	64	Overcast

OUR CURRENT NUMBER

Being almost exclusively devoted to information especially interesting to Students we are necessarily compelled to defer the publication of communications on other important subjects.

We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of THE LANCET ***relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies may be found.***

TO ADVERTISERS.

Owing to the pressure on our advertisement columns this week some announcements have unavoidably been held over.

Communications, Letters, &c., have been received from—

A.—Messrs. G. Allen and Co., Lond.; Annoyed; Automobile Association, Lond.; A South of England Man; Messrs. Arnold and Sons, Lond.; Messrs. J. W. Arrowsmith, Bristol.

B.—Messrs. T. B. Browne, Lond.; Bristol General Hospital, Secretary of; Mr. K. S. Basu, Pindighâll, India; Mr. W. G. Burcombe, Lincoln; Messrs. C. Barker and Sons Lond.; Birkenhead and Wirral Children's Hospital, Hon. Secretary of; Messrs. Chas. Birchall, Liverpool; Messrs. R. and J. Beck, Lond.; Mrs. Bulstrode, Lond.; Dr. W. H. Bryce, Edinburgh; Mr. W. Balgarnie, Penzance; Mr. E. C. Bousfield, Lond.; Miss Mary Brady, Rock Island, Illinois; Mr. Walter F. H. Blandford, Tunbridge Wells; Board of Trade, Lond., Secretary to; Mr. R. Stanmore Bishop, Manchester; Messrs. Baillière, Tindall, and Cox, Lond.

C.—Canterbury Borough Asylum, Clerk to the; C. R. G.; C. B. S.; Carlisle Dispensary, Hon. Secretary of; County Asylum, Prestwich, Medical Superintendent of; Messrs. J. and A. Churchill, Lond.; Mr. H. C. Collins, Lond.; Dr. I. D. Chapmell, Worthing; Mr. R. Cobb, Leytonstone; Mr. R. F. Conolly, Wimbledon; Mr. George Culver, Lond.

D.—Messrs. Dawson and Son, Lond.; Miss Dugard, Lond.; Dr. W. H. Duncan, Lond.; Mrs. W. H. Dupré, Canterbury; The Dean-Meyer Co., Berlin; Messrs. W. Dawson and Sons, Lond.; District Infirmary and Children's Hospital, Ashton-under-Lyne, Secretary-Superintendent of; Dr. Gustav Dintenfass, Vienna; Mr. L. Dossaer, Brussels.

E.—E. L. A.

F.—Flintshire County Council, Mold, Secretary of; Mr. Frank Fox, Lond.; Dr. Fabre, Paris; Factories, Chief Inspector of, Home Office, Lond.; Dr. Leonard Findley, Glasgow.

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An Address

ON

SPINAL CURVATURES AND THEIR TREATMENT BY PHYSICAL EXERCISES.

Delivered before the Windsor and District Medical Society at the Guild Hall, Windsor,

BY RICHARD TIMBERG, M.R.C.S. ENG., L.R.C.P. LOND., G.D. STOCKHOLM,

MEDICAL OFFICER IN CHARGE OF THE PHYSICAL EXERCISE AND MASSAGE DEPARTMENT AT ST. THOMAS'S HOSPITAL, LONDON.

MR. PRESIDENT AND GENTLEMEN,—When asked to read a paper before the society I acceded with great readiness and much pleasure, suggesting at once some subject in connexion with spinal curvatures. The exact title which I have now chosen indicates (as you might have expected) that I will deal with the question principally from the point of view of its treatment by exercises and allied measures.

GENERAL PATHOLOGY.

[Before entering upon the treatment of spinal curvature Mr. Timberg cleared the ground by describing its general pathology. Spinal curvatures, he said, were classified according to etiology or according to the particular direction of the curves; from the former point of view two subdivisions were given: (*a*) due to primary affection of bone; (*b*) due to some fault in the muscular and ligamentous structures. Amongst osseous affections rickets and caries were considered, other rarer causes merely referred to; spondylitis was dealt with as an affection intermediate between the osseous and ligamentous. Turning attention to the second main group of curvatures, those where the primary cause is to be found in the muscular and ligamentous structures, he recognised three different factors that influence the shape of the spine and which might tend to produce abnormal curves in it. They are, firstly, the support upon which the spinal column rests; secondly, the distribution of the weight which it has to carry; and thirdly, one-sided muscular action upon it. After a few remarks on the normal shape of the spine, on the occurrence of the four physiological curves in the antero-posterior direction—any physiological lateral curve being denied—and on the various directions and degrees of the pathological curves, the lecturer proceeded to trace the mechanism of how the various curvatures are produced by these three factors:—]

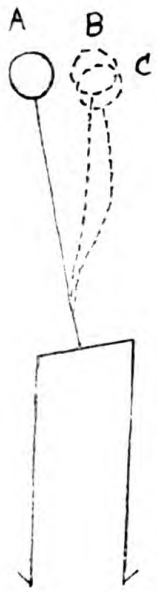
With regard to the first, the support upon which the spinal column rests, this might, in the first instance, be said to be the pelvis; and there may be simply developmental inequalities in the two sides of the pelvis which reflect upon the position and shape of the spine; but a much more usual occurrence is that the pelvis itself is tilted by an inequality in the length of the legs from whatever cause: error of development, disease, or accident.

Supposing, for instance, the left leg to be shorter and the pelvis thus tilted towards this side (Fig. 1), the spinal column, too, would naturally point towards the left side, if it maintained its normal right angle to the intertrochanteric axis. Such a position would, however, entail by far too great a muscular exertion, and therefore the body is soon brought into balance by a contraction of the muscles on the right side of the spine. A large convex lumbar curve is in this way produced; and if it stops at this well and good. It is Nature's way of making up for any accidental shortening of a leg, for instance, by a fractured femur; and a difference of up to an inch can be made up for in this way without any detrimental effects to a normally strong and muscular subject. In weak and undeveloped individuals, on the other hand, the correction is likely to be carried too far, so that the body will be brought over to the right side, and a compensatory cervico-dorsal curve with the convexity to the right will then be induced to counteract this loss of balance.

The obvious way of treating these so-called statical curvatures is gradually to raise the sole of the boot under the shorter leg or to make up for any inequality of the pelvis by a slanting seat until the tilting of the pelvis is corrected. The curves of the spine already produced can then generally be easily dealt with by special exercises, about which further later on.

Antero-posterior curves can also be caused by a similar faulty position of the pelvis. A tilting forward will, for instance, occur in a case of congenital dislocation of the hip-joints, or it may be caused merely by deficient strength of the extensors in the hip-joints, the hamstring and glutei muscles, in bringing the pelvis into balance. Any such tilting forwards of the pelvis will of necessity lead to lordosis, and a compensatory kyphosis is likely to follow. On the other hand, the physiological antero-convex curve in the lumbar region can be reduced or obliterated by a kyphosis continued down into this region if the pelvis is tilted to any degree backwards. As we know, there is in our natural upright position a constant tendency to hyper-extension in the hip-joints, which, however, is normally resisted by the Y-shaped ligament on the anterior aspect of the joint, any continuous muscular exertion thus being saved. Should

FIG. 1.



Diagrammatic representation of the occurrence of a statical curvature from shortness of left leg. A, Position of spinal column as it would appear if its relation to the intertrochanteric axis were maintained. B, Spinal column brought into balance by muscular action, with consequent left convex lumbar curve. C, This action carried too far and the balance again restored by a compensatory right convex thoracic curve.

now any yielding occur of this ligament, a tilting more or less backwards would take place and a lumbar kyphosis made possible.

The second of the mentioned causes of spinal curvature—i.e., "the unequal distribution of the weight which the spine has to carry"—is best illustrated by a case of torticollis. A long-standing condition of this kind is sure to bring about a curve of the cervical spine, and the process of secondary curves will occur here too, although in an opposite direction from above downwards. Other instances of the same nature is after amputation of one of the upper extremities, or when any external weight of any kind is habitually carried on one side.

Still, in both these instances our third factor is at work as well: "that of unilateral muscular action on the spinal column." Let us try to analyse how a preponderant use of one hand and arm will affect the spine. It is, of course, the right hand that is more often used in this way, and for its efficient working the scapula of the same side need to be fixed. This is secured by the action of the muscles connecting this bone with the trunk, the most important of them being pectoralis minor, serratus magnus, levator anguli, scapulæ, the rhomboids, and trapezius. These muscles require in their turn a firm origin from the spinal column,

which is obtained by a contraction of the spinal muscles of the opposite side; and if now at the same time the right arm is raised, which it generally would be, and perhaps supporting some weight in addition to its own, the upper part of the spine would naturally be leaning over to the left side. A frequent repetition of such a position will soon make it permanent, a primary dorsal curve, with its convexity to the right, thus being formed.

At first it is merely a lateral deviation, but an added rotation of the interested vertebræ will soon convert it to a more or less fixed scoliosis. This rotation of the spine seems to form something of a mystery to some learned men, but to my mind it is a simple and easily comprehensible result of the muscular action upon the vertebræ, although I do not know that I have ever seen any statement to this effect. The muscles passing between neighbouring vertebræ (and still more when their fibres skip two or three vertebræ before becoming attached) will naturally tend to take the shortest course between their origin and insertion, and thus, instead of following the arch of the curve, they will try to occupy the position of a string to a bow. As this tendency of the muscles obviously acts strongest on the spinous processes, these will thus come to approach the middle line, and the bodies of the vertebræ, on the other hand, be twisted towards the convexity of the curve. This applies to any part of the spinal column, but it is most noticeable in the thoracic region, as the ribs are there taking part in the deformity, becoming much more prominent on the convex side at the back and correspondingly depressed in front. A costal hump is thus formed, not to be confused with the angular hunchback after Pott's disease. In fact, the whole shape of the thorax is altered, the costal angle becoming much more acute on the convex side and obtuse on the concave. (Fig. 2.)

FIG. 2.

Diagrammatic representation of a transverse section of the thorax in a case of right convex curve. Note spinous processes of vertebræ directed towards the middle line and prominence of ribs posteriorly on the convex side, with abnormal acuteness of the costal angle.

The organs of the thoracic and upper abdominal cavity cannot fail to be influenced by such a deformity of the chest; and if we to this add that the ribs on the convex side become spread apart, whereas on the concave side they become crowded together so that intercostal pains are often produced by the pressure, and the ribs even made to atrophy, we can then, I say, realise what a serious condition a spinal curvature actually might become when affecting the thoracic region. A lumbar curve is in itself not quite so detrimental, but there is always the risk of its continuing down into the sacrum and deforming the pelvis, thus in females leading to serious consequences with regard to possible future pregnancy and parturition.

In diagnosing a case of scoliosis it is therefore not sufficient merely to take notice of the line of spinous processes. These tend, as I said, to approach the middle line, and might, therefore, often make the curvature appear less than it really is. One point of greater diagnostic importance is the shape of the space between the outline of the trunk and the arm on either side. In a right convex dorsal curve the right arm would thus hang close to the body in the upper part and away from it lower down. (Fig. 3.) If the same single C-shaped curve were continuous through the whole of the back this effect would be still more marked, as the hip of the left side would then be rendered prominent. (Fig. 4.) The left scapula would in either of these two cases be lowered.

The relative level of the scapulæ and hips respectively thus form another point of great diagnostic significance. In cases where a secondary curve has occurred in the lumbar region, making the other hip (the right side) prominent, the appearance of the arm spaces is again altered. (Fig. 5.) In our present example it becomes triangular on the right side and crescentic on the left. I speak advisedly of prominence of the hip and not of a raised hip, as the one *may* occur without the other. In most cases it is, however, raised as well, and this point is best settled by noticing the level of the two anterior superior spines.

To ascertain whether any rotation of the spinal column is present, the best way is to let the patient bend forward and

FIG. 3.

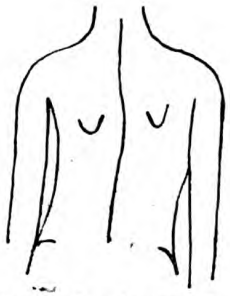


Diagram of a right convex thoracic curve. Note the different shape of the space between the arm and the outline of the body in either side, also the lowering of the left scapula.

then to notice against a dark background the outline of his back at different levels. Any prominence in either side of the middle line will then easily be detected. In our last instance such prominences would naturally be likely to be found on the right side in the thoracic region, and on the

FIG. 4.

A right convex curve continuous throughout the spine. Note arm spaces, lowering of left scapula, and raising of left hip.

left side in the lumbar, and it is quite conceivable that a third compensatory curve might have occurred in the cervico-dorsal region, also accompanied by a rotation. (Fig. 5.)

FIG. 5.

Right convex thoracic and left convex lumbar curve. Note arm spaces, lowering of the left scapula and prominence of the right hip, also the backward protrusion at each convexity due to the rotation of the spinal column.

Turning now our attention to the question of treatment of spinal curvatures, there are, of course, admittedly many useful agencies in addition to physical exercises, such as

general constitutional treatment with good food, fresh air, and other tonics, rest, change of occupation, artificial supports, baths, electricity, massage, &c. Still, for the great majority of cases exercises are indicated often in combination with one or more of the above-mentioned other methods of treatment. The ideal aim is obviously to correct the curve so as to restore the spine to its normal shape; and this is very often possible by means of suitable exercises. These should be directed towards increasing the power of those muscles, or rather groups of muscles, that are weakened—i.e., on the convex side of any curve—and towards again stretching and restoring to normal length the muscles on the concave side, which are over-active and contracted. At the same time endeavours should be made to correct or over-correct the existing curves by applying pressure upon their highest convexities, and by choosing such positions as will enable the law of gravity to aid the muscular action in this direction. Any constant or frequently repeated position or movement that can be discovered causing the curvature should naturally be avoided.

With regard to the prognosis, this is obviously better the earlier a curvature is discovered and can come under treatment. The simple lateral deviation is generally easily amenable to treatment; and a curve in the second degree of severity—i.e., a true scoliosis, but not yet fixed—is, in favourable circumstances, capable of perfect recovery. Still, even in the numerous cases where the ideal of a cure cannot be reached by any known means, judicious exercises can do much good in effecting more or less improvement, or, at least, preventing the deformity from getting worse, increasing the patient's strength and power of carrying what is left of his deformity, relieving pain (as well as muscular aching and feeling of fatigue, as the pain caused by pressure), rendering the spine more moveable and at the same time the chest, thus lessening the detrimental consequences to the patient's general health. These benefits are very considerable, and one has to be content if these can be attained. In unfavourable cases it is often necessary to adopt some form of spinal jacket in addition to exercises.

A forcible correction, under anæsthetic, of any fixed curvature is, on the other hand, strongly to be condemned. You remember perhaps that such a course was advocated a few years ago by the French surgeon Calot. He used excessive pressure on the curve, while four assistants held the patient by one arm and leg each. Without counting the immediate danger of such a proceeding, the possible advantages to the patient were very doubtful, for a weak and wobbly spine is but a poor substitute for a strong and firm back, even if possessing an angular curve.

TREATMENT BY EXERCISES.

In giving examples of the actual exercises employed I will classify them according to the particular form of curvature for which they are suitable, and within each such group I will place first those exercises that are simple enough to be done, after some tuition, by the patients themselves without any expert aid. In order to avoid too much repetition it will be best to start with a list of exercises that lend themselves for any form of curvature.

One object to be kept in view in the treatment of all kinds of spinal curvatures is the improvement of the shape and mobility of the chest, and for this purpose breathing exercises should always be introduced. In order to make them at the same time corrective of the existing curves, or at least to avoid any risk of the curves being accentuated by the movements, it is a wise precaution to let the patient perform them while lying flat on the back or standing with the whole of his back supported against the door-post.

Exercise No. 1.[1]

(*a*) *Lying* (flat on the back with the arms and the palms of the hands pressed to the sides). *Lifting both arms* forwards and upwards, while breathing in, and bringing them back again outwards and downwards to the sides while breathing out (six to eight times, slowly, in time with deep breathing).

(*b*) *Standing* (with the back from head to heels against some support, such as the door-post; the arms pressed to the sides). *Lifting both arms* outwards and upwards while breathing in, and lowering them outwards and downwards while breathing out (six to eight times, slowly, in time with deep breathing).

Another simple form of exercise that opens up the chest, strengthens the inspiratory muscles, and tends to straighten the spine by active muscular effort is arm bendings and stretchings, and the way in which these movements can most safely be done is the following:—

Exercise No. 2.

Standing (with the arms by the sides). (*a*) *Bending both forearms* up, so that the fingers slightly bent touch the outer part of the shoulders, and from that position *extending both arms outwards* (the palms turned down), then bringing them into the bent position, and from there down to the sides again (two to six times; each movement quickly, but stopping in the different positions). (*b*) *Same exercise*, but extending the arms *upwards*.

Hanging exercises have a still more marked effect on the inspiratory muscles and on the chest, and the mere weight of the body will here help to straighten the spine. These positions can be made more strongly corrective of any special curve by applying manual pressure to the height of its convexity; but it has then to be remembered (with regard to the lateral curvatures) that the pressure should be applied in the right direction, from behind forwards, as well as from the side, so as to meet the rotation of the spine as well as the lateral deviation. There is otherwise a great risk of increasing the already abnormally acute angle of the ribs on the convex side. (Compare Fig. 2.)

For our present purpose the most suitable hanging exercise is—

Exercise No. 3.

Hanging (from a bar, trapeze, or similar support, with the hands kept as far apart as the width between the shoulders). *Parting and closing the legs* with the knees kept straight (two to six times; repeat the whole exercise two or three times).

The leg parting and closing is added not only to serve as a measure of time for the hanging but also in order to make the patient relax his over-acting spinal muscles, so as to let the weight of the lower part of the body more fully extend the spine.

FIG. 6.

"Suspension." (For this and the other photographs illustrating this paper I beg to acknowledge my indebtedness to Mr. W. M. Lupton of St. Thomas's Hospital.)

Exercise No. 4.

Standing (with the back resting against a door-post, the arms hanging perfectly loose by the sides, the feet parted and placed some few inches forward from the post). *Bending the body* forwards and downwards with the head and arms drooping down; then *raising it up* gradually, so that each vertebra of the spine in turn from below upwards may, if possible, touch the door-post (two to four times; repeat twice).

[1] This and several other of the exercises described below will also be found in the author's book on "Home Exercises for Spinal Curvatures."

This exercise will bring the spinal muscles into more active use, and will increase the mobility between the various vertebræ. It will thus tend to straighten slighter degrees of lateral curvatures. When properly performed its principal effect is, however, to correct antero-posterior curves; lordosis is corrected by the hamstring and glutei muscles being made to tilt the pelvis backwards, the lumbar spinous

FIG. 7.

Self correction with belt.

processes thus being brought to touch the support; and kyphosis is corrected by the straightening of the upper part of the spine. In this latter part of the movement care has, however, to be taken that the lordosis is not allowed to recur.

Exercise No. 5.

Lying (flat on the face with the arms and the palms pressed to the sides). *Raising the upper part of the body* a short distance only, but with the shoulders well drawn back (two to four times).

A stronger muscular exertion than in the previous exercise is here obtained, acting in the same manner, corrective of slighter degrees of lateral curves. This requires careful watching in cases of antero-posterior curves in order that the effort may be localised in the proper part of the back—i.e., the scapular region. There is otherwise a great risk of a lordosis being increased or produced instead of a kyphosis being corrected.

Exercise No. 6.

Sitting (astride a chair with the hands bent up to the shoulders, the elbows kept close to the sides and the forearms brought well outwards). *Twisting of the body* from side to side (two to six times each side).

Twisting of the body executed in the position just described or (to get a stronger effect, although less easy of control) in the standing position with feet parted and arms extended outwards, is of value in order to increase the mobility of the spinal column, and at the same time of the chest, thus facilitating free respiration.

Exercise No. 7.

"*Suspension*" by means of a halter supporting the patient's chin and neck. (Fig. 6.)

This is a sort of glorified hanging exercise (compare Exercise No. 3). The method is to attach the halter, by means of a rope and pulleys, to a fixed point above the patient, and then to let him take hold of the running end of the rope above his head, and by means of this hoist himself up as high as he can when standing on tiptoe. If there is a marked difference in the level of the scapulæ the hand of the side where the scapula is lower must always be made to grip higher up on the rope. The patient should now try, without paying out the rope, to lower his heels again towards the ground as far as possible. A marked straightening of the spine will then generally be noticed. It is an important point to let the patient pull the rope himself, not only because of the correction thus obtained in the shoulder level, but also because there is in this way no fear of accidental hanging or anything approaching to it. For he must obviously either bear his weight on his toes or support it on his arms, and any undue strain on the neck is thus effectually prevented.

Exercise No. 8.

The specially devised belt depicted in Fig. 7 affords one useful way of helping a patient to correct his curvatures by his own muscular efforts with the aid of his arms. The belt is fastened round the patient's body between the iliac crests and the trochanters, with straps passing diagonally across from back to front above the iliac crests, and from this belt two handles are suspended, one on each side, which the patient is made to grasp. He is then directed to walk forwards and backwards on tiptoe, holding himself as erect as possible. Frequent supervision is, however, necessary to prevent faulty positions such as undue raising of the shoulders.

In dealing with individual curvatures we will first consider those in the antero-posterior direction.

Exercise No. 9.

The most important movement for a faulty carriage of the head (stooping or poking the chin) is *bending the head* slowly backwards and raising it up again by drawing in the chin (four to eight times). The

FIG. 8.

Postural correction of lordosis and active muscular correction of kyphosis.

effect might be increased by someone offering resistance to the movement by a hand placed behind the neck. In either case it is essential that the movement takes place not merely between the atlas and occiput but throughout the whole of the cervical spine.

In a case of kyphosis continuous throughout the whole of the back, Exercise No. 5 might with advantage be modified by raising the body as far as the individual is able. When kyphosis coexists with a lordosis such positions and movements must be chosen as do not increase one curve while

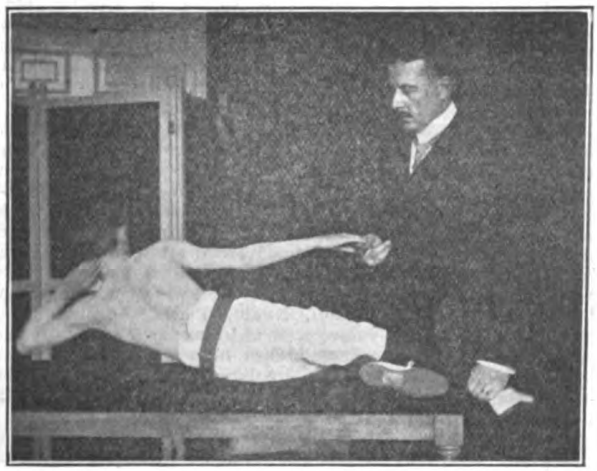
correcting the other. One exercise that meets these requirements is—

Exercise No. 10.

Sitting (facing a wall, some 2 to 3 feet distant from it, with the arms extended upwards). *Leaning the body* forwards from the hip-joints, with the spine kept straight, until the hands touch the wall at the highest possible point (four to eight times).

The principal exertion is here localised to the scapular muscles, and the exercise is thus corrective of kyphosis,

FIG. 9.



Active correction of right convex curve.

while the leaning forward on a low seat prevents lordosis from occurring. (Fig. 8.)

Exercise No. 11.

Lying (flat on the back, with the arms extended upwards and the hands grasping some support). *Drawing up both knees* and then bringing the legs down to the original position again (four to eight times). To increase the effort the same movement might be arranged in a hanging position.

Here, on the other hand, the kyphosis might be said to be mechanically prevented by the position, while the lordosis is more actively corrected.

With regard to lateral curvatures more difficulties present themselves, and it is here that expert help becomes a necessity in all but the very slightest cases. (In describing the exercises for lateral curvatures we will consistently suppose the thoracic curve to be right convex and the lumbar curve to be left convex. For the opposite condition right and left should naturally be reversed.) A unilateral C-shaped curve can be met by the following two exercises:—

Exercise No. 12.

Sitting (astride a chair with the left hand behind the neck and the right arm hanging down by the side). *Bending the body* to the right side and raising it to the upright position again (six to ten times).

Exercise No. 13.

Lying (on the left side with the left hand behind the neck and the right arm extended along its own side of the body). *Raising the upper part* of the body straight towards the right side (three to six times).

The action of Exercise No. 13 will be easily understood from Fig. 9. The different position of the two arms helps to counteract the inequality in the level of the shoulders, and the position of the body entails a powerful contraction of the muscles of the convex side.

Exercise No. 14.

Sitting (with the feet parted and firmly resting on the floor, the body leaning forwards from the hip-joint). *Extending the left arm* upwards (three to six times; repeat the whole exercise three times).

The active correction of the inequality between the scapulæ is still more marked in this movement, and it is best done with the help of someone who, standing in front of the patient, can steady his body by placing one hand on the convexity of his curve, and at the same time with the other hand offer some resistance to the extension upwards of the left arm.

A lumbar curve (with the convexity to the left) is efficiently treated by one of the two following exercises:

Exercise No. 15.

Hanging (from a bar), *bringing both legs* over to the left side, and keeping them there for a few seconds (three to six times; repeat twice).

Exercise No. 16.

Standing (with the left foot two foot-lengths in front of the other; the left side resting against the edge of a table or similar support, placed at the level between the iliac crest and the trochanter). *Bending the body* over to the left side (six to twelve times).

The next exercise provides one very effective way of passively correcting a lumbar curve.

Exercise No. 17.

Lying (flat on his face), while his legs are grasped and brought over to the left side by the operator, who at the same time by his other (left) hand placed on the height of the convexity steadies the patient's body and localises the movement to the desired part of the spine (Fig. 10).

This performance enables the operator at the same time to give any desired amount of torsion to the pelvis, thus, so to say, "untwisting" the rotation of the spine which may accompany the lumbar curve. In cases of double S-shaped curvature this exercise can be used for the lower curve, if precaution is taken that the bending over to the side is actually produced at the right situation; and for the thoracic curve a corresponding reduction can be obtained by securing the lower part of the body and passively bringing the upper part over to the right side.

Exercise No. 18.

Sitting on the buttock and thigh of the side where the hip is *lowered* (the left). *Extending the other* (right leg) backwards as far as possible. *Leaning the body forwards* in line with the hind leg. *Extending the arm* of the side where the scapula is lowered (left) upwards in line with the body, and the *other arm* (right) downwards and backwards. (Maintain this position 15–50 seconds; repeat three or four times.)

Careful instruction is needed for the patient to occupy this position properly (Fig. 11), but it is then admirably adapted to counteract all the various malpositions of a double curve. By the position of the legs the relative level of the two hip crests is reversed, and a lumbar curve temporarily over-corrected; by leaning the body forward all the spinal muscles are called

FIG. 10.

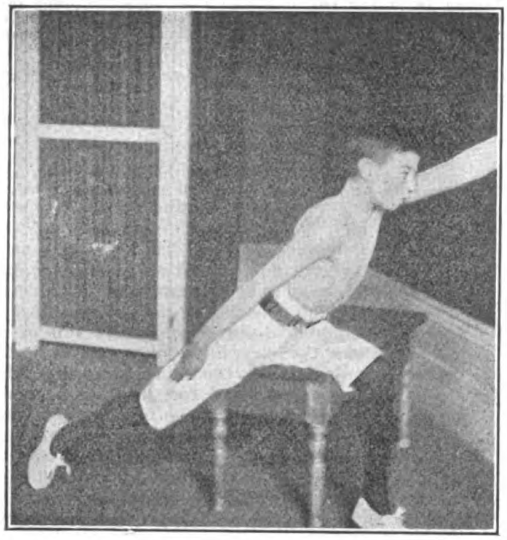
Passive reduction of a lumbar curve.

into activity to maintain the position; and by the position of the two arms the difference in the level of the scapulæ tends to be counteracted and the thoracic curve to be corrected. Positions of this kind form the essential feature in Professor Klapp's so-called *crawling method* of treating spinal curvatures.

In conclusion, I will describe one method of dealing more directly with the rotations of the spinal column, which are

always the most difficult part of a curvature to influence. For this purpose I employ an indiarubber band (3 ft. 6 in. long

FIG. 11.

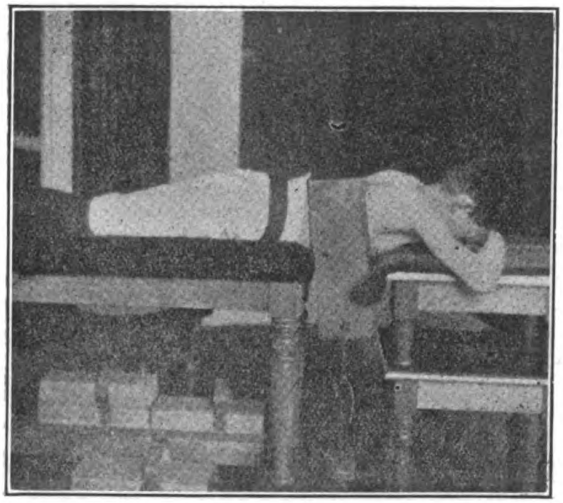


Corrective position for double lateral curvature (right convex thoracic and left convex lumbar).

by 5 in. broad and ¼ in. thick), which is used in the following manner (Fig. 12).

Two tables are placed 8 to 10 inches apart, and the patient is made to lie prone across them, so that the part of the back to be dealt with is spanning the gap between the two tables. The indiarubber band is now applied to the bare skin in this section of the back over the convexity of the curve with its end close to the spinous processes. It is then wrapped round the body, its free end hanging down on the convex side, thus overlapping and retaining in position the first part of the

FIG. 12.



Application of indiarubber band to correct rotation of the spine.

band. A suitable weight (3 to 12 lb.) is now suspended from this free end, and a powerful torsion of the required part of the body is thus obtained. The position should be kept up for some 5 to 15 minutes.

The above does not, of course, claim to be a complete list of the exercises and positions used in the treatment of spinal curvatures. Only a few typical examples have been given.

OMNOPON: A POTENT ADJUVANT TO LOCAL ANÆSTHESIA.

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OMNOPON (as it is called in this country) or pantopon (the name used on the continent of Europe) was introduced by Professor Sahli[1] of Berne, in conjunction with the late Dr. Schärges, as a medical sedative. It is sold in liquid, powder, or tabloid form, but is almost universally used in the liquid condition. It is made up in various strengths and combinations by the Hoffmann-La Roche Chemical Company, and sent out in sterile ampoules of usually 1 c.c. capacity. It is a watery solution containing nearly 90 per cent. of the soluble alkaloids of opium in chloride form. It is faintly acid in reaction, but not sufficiently so to be irritating when injected into the tissues. Opium itself contains 14 to 15 per cent. of its total alkaloids, so that 1 gramme of omnopon is equal to 5 or 6 grammes of opium. Sahli gave the name pantopon from the Greek $\pi\alpha\nu$ = all, and $\acute{o}\pi\acute{o}\varsigma$ = juice. There are about 20 alkaloids in the preparation, and they are present in the same relative proportion as in opium. It has been widely used in medical practice, e.g., by Sahli, Ewald,[2] Pertik,[3] Innsbruch,[4] and Haymann.[5] They have used it in cardio-vascular disorders as a sedative because it has been found to have no depressing effect on the circulation; in diabetes insipidus, in which it produced improvement in the general condition with marked reduction of the quantity of urine excreted; in laryngeal and pulmonary tuberculosis, and in tumour of the lung, where it gave much better and more lasting results than morphia as a sedative, hypnotic and antidiarrhœic. In mental cases it was found to be a good sedative, and in fact it is used in many clinics instead of and in preference to morphia. In gynæcological and obstetrical practice it has been used with gratifying results by Gräfenberg,[6] Johannsen,[7] and Heimann.[8] It has been found that there was no lengthening of the labour on account of weakening of the pains and all the children were born alive. (Gräfenberg,[6] number of cases not given.)

A great deal of experimental work has been done with the drug in practically all continental countries. The most important deductions from such experiments (Bergien,[9] Rodari,[10] Loewy,[11] Wertheimer-Raffalovich,[12] Rodolico,[13] and others) show that the circulation of the blood is absolutely unaltered by therapeutic doses; in fact, Rodolico found that the heart acted more strongly, while the pulse became slower and fuller. The respiratory centre is less influenced by omnopon than by morphia, as regards volume and rate of respiration, and also that the effect passes off more quickly than that of morphia. The narcotic, sleep-producing effect is very marked, and usually appears without any previous stage of excitement. It has been found further that the gastric secretions are increased, but later the motility of the stomach and intestines is reduced (Rodari), this being accompanied by ischæmia of these parts.

The good qualities of the drug were soon appreciated by surgeons in Berne and elsewhere (Brustlein[14] and von Brunn[15]) on the continent, who began and have continued its use, coupled with scopolamine, as an aid in the administration of inhalation anæsthetics, in the same way as the

[1] Sahli: Therapeutische Monatshefte, January, 1909; Münchener Medizinsche Wochenscrift, 1910, No. 25, p. 1326.
[2] Ewald: Berliner Klinische Wochenschrift, 1910, No. 35, p. 1609.
[3] Pertik: Deutsche Medizinische Wochenschrift, 1910, No. 36, p. 1661.
[4] Innsbruch: Deutsche Medizinische Wochenschrift, 1910, No. 20.
[5] Haymann: Münchener Medizinische Wochenschrift, 1910, No. 43, p. 2238.
[6] Gräfenberg: Deutsche Medizinische Wochenscrift, 1910, No. 34, p. 1569.
[7] Johannsen: Zentralblatt für Gynäkologie, 1911, No. 19, p. 702.
[8] Heimann: Münchener Medizinische Wochenschrift, 1910, No. 7, p. 357.
[9] Bergien: Münchener Medizinische Wochenschrift, 1910, No. 46, p. 2409.
[10] Rodari: Therapeutische Monatshefte, 1910, No. 10, p. 540.
[11] Loewy: Münchener Medizinische Wochenschrift, 1910, No. 46, p. 2408.
[12] Wertheimer-Raffalovich: Deutsche Medizinische Wochenschrift, 1910, No. 37, p. 1710.
[13] Rodolico: Giornale Internazionale delle Scienze Mediche, 1910, Ann. xxxii.
[14] Brustlein: Zentralblatt für Chirurgie, 1911, No. 10.
[15] Von Brunn: Ibid., No. 3.

morphine-scopolamine combination is used. The drugs are used also by some as a post-operative sedative. In the hands of these men omnopon-scopolamine has supplanted morphine-scopolamine, with admittedly definite advantage to both surgeon and patient. Mr. C. L. Leipoldt, of the German Hospital at Dalston, has drawn attention to its use in this manner in an article published in THE LANCET.[16] His article is, I think, the first on the subject in the English language.

With increase of experience in its use, one is led to speak of it more and more enthusiastically. I do not intend to say much of it with regard to its use along with ether, but rather to give my experiences and opinion of it when used in combination with the injection of the field of operation with a local anæsthetic. I may say, however, that the amount of inhalation anæsthetic necessary is usually only one-sixth or one-fourth of what is necessary in ordinary circumstances. Strangely enough, in two of my cases, for no apparent reason, the amount of ether used to produce and maintain complete narcosis was considerably in excess of that ordinarily required. In both these cases omnopon alone was used. The sedative effects of the drug are apparent usually for hours after the operation is over and bad after-effects are negligible.

I have to thank Dr. William Anderson, my private assistant, for bringing omnopon under my notice, when he returned from Germany in the beginning of this year. He had seen it used in the clinic of Professor Perthes, in Tübingen, where it is administered along with injection of a local anæsthetic (novocaine). I procured samples of the drug at once in order to test it and took an early opportunity of visiting my friend Perthes in Tübingen, in order to see his work. Professor von Brunn, first assistant in the surgical clinic there, gave me many particulars as to their experience with it. My own experience extends now to its use in over 300 cases since March, and I feel that I can therefore speak with a good deal of knowledge of its effects. In order to have as accurate data as possible Dr. Anderson and I compiled a table of observations which were carefully kept in 70 cases. I thank many of our local medical men, especially Dr. J. Robertson (assistant anæsthetist at the Aberdeen Royal Infirmary), Dr. W. G. Thomson (my house surgeon), and Dr. Anderson for supervising these observations. I shall give details of my methods of procedure and the deductions made from the observations referred to above.

Dose.—I have used almost invariably, for adult males and females alike, intramuscular injections of solution containing 2/3 grain (0·04 grm.) of omnopon with 1/150 grain (0·0004 grm.) of scopolamine. The use of the scopolamine with either morphia or pantopon is justified by Bürgi's[17] observation that when two narcotics are injected simultaneously, or one shortly after the other, the effect is more potent than when a quantity of one, equal in strength to the combination, is injected alone. This holds good apparently only when the narcotics used are chemically related to different substances in the organism, or, in other words, when they have different cell receptors. In this way, simultaneously, different reactions are obtained. I used at first omnopon (0·04 grm.) alone in my hospital cases, while in my private cases I used scopolamine also. The private cases were uniformly more strikingly successful than the hospital ones, so that now all of them receive the mixture. Sickness was much more frequent when omnopon alone was given and in some cases it was particularly distressing. It was rarely observed when the mixture was used—so that I feel fairly certain that the scopolamine with omnopon acts as a preventive of sickness, more certainly than it does when used along with morphine. There is, in my opinion, no safety in attempting to regulate the dose in adults in proportion to the body-weight, age, or development of the patient. The dose used by me acted lightly in one patient, whereas in another of approximately the same weight and apparently in the same state of health and mental condition it acted most satisfactorily. The dose mentioned appears to me to be a safe one for any adult case. I do not think it is safe to give a larger one right off because of possible idiosyncrasy. Far rather have resort to a small quantity of inhalation anæsthetic if necessary, to produce surgical anæsthesia, or give a repeat dose of, say, half or quarter of the original dose 15 to 30 minutes before the beginning of the operation if the patient is not satisfactorily narcotised. The latter procedure has been resorted to in many cases with excellent result. One must remember another of Bürgi's observations in this connexion: that the same amount of such medicament given in two or more doses, one shortly after the other, acts more strongly than when the whole is given in one dose. In weakly or toxæmic individuals it may be well to give a rather smaller dose.

I have not used the combination in children below the age of 13, but with juveniles just above this age the effect has been quite satisfactory. A small amount of ether has usually been given in order to ensure quietness because such young patients are apt to show less control if they *should* be aroused by painful sensations. For such cases usually half the adult dose has been given. From my observations in such young patients I am inclined to agree with Leipoldt that it will have a very beneficial effect "in mitigating the effects of a prolonged operation in a child, as regards shock—and these advantages outweigh the possible, but more or less theoretical, dangers. Wiki[18] has recently shown that children bear morphia injections remarkably well, especially in cases of profound collapse from pain, and it is just in this class of case that it seems advisable to use omnopon on account of its sedative effect." It seems more advisable to make the injections into the muscles than "hypodermically," both on account of greater rapidity of absorption and less likelihood of local irritation. Von Brunn recommends limiting the circulation by applying tourniquets to two or more limbs near the trunk. He claims to produce "sleep" more quickly and to get more certain effects and at the same time to have, in case of too severe effects, a supply of "unpoisoned" blood which, when the tourniquets are removed, will nullify the excessive dose. He warns against the use of chloroform. Brustlein does not approve of this method. He has had three rather alarming experiences during its use. I have not used von Brunn's method.

Local anæsthetic used.—The patient's skin is prepared in the usual way before the injection of omnopon-scopolamine is made. While being brought to the operating table the face is covered with a towel. In order to prevent the patient seeing what is being done either a towel is kept on the face or a screen is fixed on the table to hide the field of operation. The skin is then finally wiped, first with mercuric biniodide in spirit (1–500), and then with Harrington's solution. I infiltrate the skin where the incision is to be made and the deeper parts of its neighbourhood, and, at the same time, in certain cases try to "block" the sensory nerves supplying the area of operation with solution of novocain and adrenalin. The adrenalin is used because the omnopon seems to cause increased vascularity in the superficial tissues. The adrenalin may, of course, help the omnopon in its effect on the cardio-vascular system. The strength of the novocain is ¼–½ per cent. in saline solution. According to the vascularity of the part concerned, ½–1 drachm of adrenalin chloride (1–1000) solution is added to each 100 c.c.

Messrs. Down Bros., Limited, have made for me an all-metal syringe, fitted for any size of Schimmel's needles and with special detachable points (which facilitates filling), and capable of holding 40 c.c. I use No. 15 (small) and No. 0 (large) Schimmel's needles. The ordinary syringes are too small for handy use when large areas have to be anæsthetised. It is, of course, perfectly easy to anæsthetise the immediate area of incision or dissection, but when intra-abdominal manipulations have to be carried out the anæsthetising of the parietal peritoneal tissue is a matter of considerable difficulty if the omnopon has not taken good effect. In several such cases I have, by using gauze-packs wrung out of novocain solution, been able to finish operations satisfactorily with but little complaint from the patient. As one gets more practice in the injection of the local anæsthetic, the results with regard to the anæsthetising of the parietal tissues are increasingly satisfactory.

In operations on the perineum or lower extremities, and in intravesical operations, such as enucleation of the prostate, I find much help in many cases from the injection, extradural, into the sacral canal of ¼ per cent. novocain solution, 20–40 c.c., according to the size of the patient. (Stoeckel's method.[19, 20]) This "blocks" the sacral nerves

[16] THE LANCET, Feb. 11th, 1911.
[17] Bürgi: Deutsche Medizinische Wochenschrift, 1910, No. 2, p. 62.
[18] L'Opium chez les Enfants. Revue Medicale de la Suisse Romande, vol. xxx., 1910.
[19] Stoeckel: Zentralblatt für Gynäkologie, 1910, vol. xxxiii., pp. 1-15.
[20] Mayer: Epitome, Brit. Med. Jour., August 13th, 1910.

before they emerge from the sacral canal. I had previous to my using omnopon-scopolamine a large experience in the use of local anæsthetics, and I feel that the simultaneous use of omnopon-scopolamine enhances the success of such anæsthetics by nearly 50 per cent.

In the operations in my wards of the Aberdeen Royal Infirmary during the past few weeks an inhalation anæsthetic is used in but 20 per cent. of cases. Emergency cases are excluded from the calculation because they are operated on usually immediately after admission to hospital.

Effects before operation.—Patients are prepared as for inhalation anæsthesia. The injection of omnopon-scopolamine is made deeply into the muscles (usually of the buttock) and patients very seldom make any complaint of local irritation. In my cases I have found it best to have the injection made 1¼–1½ hours before operation. The patients begin to get drowsy usually in a very few minutes and should be encouraged to go to sleep by being left alone in a darkened room free from noise or disturbance of any sort. Certain patients should not be told beforehand that possibly they will not get any inhalation anæsthetic; there should be no special fuss made about the method, otherwise they are apt to become excited, apprehensive, and resistant to the action of the drugs, and are almost certain to require some inhalation anæsthetic in order to quieten them during the actual operation. Such patients allow usually the injection of the local anæsthetic to be made, but when they appreciate that the operation is in progress they begin to complain. That such complaints are merely "mental" is fairly well shown by such facts, for example, as that only three drachms of ether (open method) were necessary to keep an excitable girl quiet during the operation for bilateral inguinal herniæ, or that in a complete operation for cancer of the breast, lasting one and a half hours, only 1½ oz. of ether were used.

In people over 50 the drugs act especially well. The older the patient the better the effect. This fact, in my opinion, makes this method of anæsthesia so valuable. It acts best in just that class of case in which one is anxious about the effects of an inhalation anæsthetic. Such patients usually go to sleep during the hour before the operation, or at any rate rest quietly, and are quite free from that apprehension which in some cases is so distressing. This advantage is, of course, evident when other narcotics are used, but with these there is sometimes considerable excitement during the early stages. Only in cases where omnopon was used alone has there been any sickness during this preliminary period. The pulse and respiration, which may previously have been raised in rate owing to excitement, become slower and of quite natural volume or depth. In only one case (gastrectomy in a woman of 56), where a double dose had been given by mistake, was there any anxiety caused by interference with respiration. The pulse kept good (about 90) all the time, but at the beginning of the operation the respirations were only 3 per minute, although they were quite deep when they occurred. The patient could not be roused to speak. The colour kept perfectly natural all the time. No novocaine was used in this case. The respirations were practically normal at the end of the operation, although they became slower again (8–10 per minute) for an hour after the operation. I may say here that clinically I have verified the experimental findings on the respiration and circulation previously referred to. It has always impressed me that a deep narcosis from omnopon gives rise to infinitely less anxiety than a similar narcosis from morphia. While in several cases the breathing has become slowed to 8 or 10 per minute, yet the general condition, colour, and pulse kept so good that one felt quite easy in mind. In no case has cyanosis been noted.

Some patients remark when roused on a feeling of thirst, even at this stage. Even in a perfectly satisfactory case the patient can practically always be roused to speak, to raise their limbs, pelvis, or abdomen, to take deep breaths, and so on, when they are placed on the operating table. They frequently take notice of the process of disinfection of the skin and more frequently of the early stages of anæsthetising the wound area, but have usually settled down again by the time that operation sheets, towels, &c., are fixed in position.

Effects during operation.—For obvious reasons the patient's arms, unless to be operated on, are fixed alongside the trunk by wrist-straps attached to a belt which runs round the table. Another belt, round the table and lower thighs, prevents the patient from flexing the knees. Usually no objection is made to being fixed up in this way. During a severe operation in a satisfactory case the general condition of the patient leaves little to be desired. This is especially remarkable in old patients in such serious operation as gastrectomy, colectomy, or gall-stone cases, where the operator and anæsthetist have frequently, under ordinary conditions, so much anxiety. This is just the sort of case in which one wishes to avoid inhalation anæsthetic. There is no necessity for haste on account of the effects of the anæsthetic. There is practically never any shock. (I have seen shock in only one case, a very difficult abdomino-perineal excision of the rectum, in which ether had to be given freely—10 ounces.) Respiration remains unaffected unless when organs are pulled upon vigorously or when exploration of the abdominal cavity is made, when the extreme sensitiveness of the parietal subperitoneal tissue appears. The pulse is unaffected unless under similar circumstances, when merely occasional increased frequency is the only result. In some cases the blood pressure has fallen to the extent of 10–15 mm. Hg, estimated by Martin's modification of the Riva Rocci manometer. In one case of subtotal gastrectomy, entailing removal as well of 15 inches of the transverse colon, part of the mesocolon, and stripping of the parietal peritoneal tissues off the pancreas, &c., separation of numerous old inflammatory adhesions, and so on, which occupied about three and a half hours, there was no evidence of shock, the pulse at the end of the operation being 90, regular, and of good volume.

The patients are usually able to assist the operator in more ways than one. For example, as already indicated, the taking of deep breaths may help the delivery of stomach, gall-bladder, or pelvic tumour from the wound. In some cases, during the performance of a laparotomy for other conditions, the patient has acquiesced in the decision with regard to the removal of the appendix, and so on. The fact that they can hear what is going on is urged at the time by some patients very persistently as a reason why they should get ether or chloroform. Such patients are usually easily quietened by receiving a few drachms of ether, and they then frequently remain quiet till the end of even a long operation, although they may become conscious again and even talk. In two cases intermittent complaints of a feeling of intense restlessness were made, which were overcome only after much encouragement by conversation. The loosening and holding of a hand by an attendant also seemed to relieve these attacks. One case was that of the combined gastrectomy, colectomy, &c., above referred to, in which the restlessness occurred during the last half-hour of the operation, and the other was a case of difficult thyroidectomy lasting 45 minutes. On both occasions the day was extremely warm and close, and the atmosphere in the theatre was irksome to all in it. Neither of the patients remember about the restlessness, and it is a curious fact that although a patient may talk perfectly rationally about many subjects, they frequently have no recollection of doing so, or, indeed, of the operation. This want of memory might create difficulties legally in a possible claim for damages on account of the permitted removal of a diseased organ not previously diagnosed. Sweating has been noted only occasionally. Thirst has been frequent and I have never hesitated to give a small quantity of water to drink, or, in gastric cases, merely to wash out the mouth. In patients who afterwards have no recollection of pain, or, indeed, of the operation, there has sometimes been a good deal of moaning or muttering during traction of organs or section of nerves—e.g., in breast operations—but there has rarely been noticed any deterioration of the pulse as in inhalation anæsthesia when such moaning is provoked. The pupils are generally slightly contracted, but in practically all cases have reacted, usually sluggishly, to light. The conjunctival and corneal reflexes have never been found to be abolished. In fully narcotised patients muscular relaxation has been more satisfactory than when ether is used alone. In only one case where ether was not used have I had any difficulty in replacing bowel in the abdomen. I think that this was due chiefly to inefficient preparation, among other things in the matter of diet, of the patient previous to operation.

I have been disappointed in two cases with the inefficient

action of the omnopon-scopolamine. In both of these cases the patients were strongly-built healthy men, but in spite of that, from my experience, I expected that the narcotic would have a good effect. The local anæsthetic had also very little effect. They were both "tipplers." The occurrence of failure is perhaps fortunate in that if the method were successful in every case critics might well say that the effect was too perfect, that the writer's enthusiasm for a new procedure had carried him too far.

Effects after operation.—The patients seem occasionally to feel the application of a firm binder or bandage as much as any part of the operation. This has the effect of reassuring onlookers who may be timid concerning the method of anæsthesia. The average case is conscious enough to appreciate that the operation is finished, and in many cases to express thanks, which sentiment, in these Socialistic days, is increasingly rarely given voice to by hospital patients when they are in full possession of their faculties! Only on very few occasions have patients been in a condition to be allowed to walk back to bed. They stagger and feel giddy as if intoxicated by alcohol.

Practically all cases, except those of moveable kidney, loin abscess, spinal or thigh lesions, are placed at once in the reclining position. The patients usually go to sleep at once, after being settled in bed, and sleep for a considerable period, even so long as six hours. In those who do not sleep, pain is not complained of for several hours. This is of considerable advantage in cases of operation on the upper abdomen, in which, when inhalation anæsthetics alone have been used, the pain of the wound, after consciousness has been regained, prevents the patients properly inflating the lungs. In cases with heart or lungs below par this early respiratory difficulty may lay the foundation of more serious trouble which becomes pronounced in the course of a day or two, such as hypostatic congestion, pneumonia, or massive lobar collapse. The fact that occasionally respiration is slowed during the first hour or two after omnopon-scopolamine anæsthesia is possibly a drawback in this connexion, and for this reason such patients as require it are roused up every half-hour or so and made to take a few deep breaths so as to fill out the lungs thoroughly. There have been strikingly fewer cases of chest trouble in the omnopon series than in a similar number of cases in which inhalation anæsthesia was used alone.

There is apparently no reason why a second dose of omnopon-scopolamine should not be given, if necessary, to subdue post-operative pain. By giving half the original dose —i.e., 1/3 grain (0·02 grm.) omnopon and 1/300 grain (0·0002 grm.) scopolamine—we can secure for the patient a restful, painless night, and the impression is given that the immediate and after effects are preferable to those of morphia, in that the rest is more natural and the heavy nauseated feeling which morphia often gives next morning is absent. In some cases in which morphia has had but little effect, omnopon has acted promptly and efficiently.

Gastro-intestinal system.—I have already referred to the occasional presence of distressing sickness and vomiting after omnopon has been used alone. It has never persisted more than from 24 to 36 hours. When scopolamine was given along with the omnopon, sickness has been present either before, during, or after the operation in only four cases, less than 2 per cent. In three of these cases it was found that morphia produced the same result, in probably worse degree. In one case relief was procured after 2 drachms of a solution (1–100) of potassium permanganate had been given by the mouth. The patient vomited at least part of this about 15 minutes later, but was not again sick.

Thirst is the most distressing post-operative symptom and is most marked in patients who have been well under the influence of the omnopon-scopolamine, owing probably to their having slept with the mouth open. It is doubtful if this thirst is any greater than what occurs after inhalation anæsthesia. Plain water is given in small quantities to relieve thirst, except in gastric cases. In no case has thirst been complained of after 24 hours. The giving or withholding of scopolamine did not seem to have any effect on this symptom.

The appetite remains unimpared in most cases which are not complicated with sickness. Several patients have asked for and received solid food immediately after operation, while, on the other hand, in a very few cases the appetite has been rather poor for the first day.

There has been no evidence of unfavourable action of the drug upon intestinal peristalsis. Flatus has been passed within 24 hours even in cases of operation upon the colon, such as ileocolostomy or colectomy. This fact is of great benefit to patients, as except on very rare occasions there is no tympanites with its accompanying colicky pains. Movement of the bowels has been secured on the second or third day with the usual aperients more easily than in cases where ether alone was used. In this respect, also, omnopon compares very favourably with morphia, as when the latter is used, either before or after operation, a subsequent paralytic condition of the bowel is a frequent, persistent, and distressing result.

Circulatory system.—Pulse. At the end of operation the pulse is usually slightly accelerated, but as soon as the patient is settled in bed the rate and rhythm return to the normal. After six to eight hours there is usually a rise of from 10 to 20 beats per minute, but gradually a return to normal rate occurs within 24–36 hours. This temporary rise is most marked in nervous patients or in those who have been subjected to severe operations. As has been stated, the blood pressure shows during or at the end of operation a fall of from 5 to 15 mm. Hg, but by the end of the first day it has risen again to normal. In no case has any dilatation of the heart been observed, and as far as can be made out by the usual methods of percussion and auscultation the cardiac muscle remains uninjured by the drugs even in cases with evidence of old endocarditis. In one such case operation (gastro-enterostomy) had been decided against by two different surgeons in different parts of the country.

Respiratory system.—In well-narcotised patients the respiration is slow but regular and deep during the first few hours. No stertor has been observed. As soon as the patient is fully awake, however, there is a rapid rise in rate to the normal, which is maintained although the patient may again fall asleep. The colour of the face remains good. As the effect of the omnopon passes off the face becomes paler. Chest complications have been exceptionally few in number. Acute lobar pneumonia occurred in one patient, aged 65, who was suffering from well-marked secondary anæmia due to hæmorrhage from duodenal ulcer. (Hæmoglobin before operation was 52 per cent., red blood corpuscles 2,300,000.) The patient became rapidly very ill and died on the fourth day after operation, and although massive collapse of the lung was suggested the consultant physician was of opinion that such did not exist. Post-mortem examination was not performed.

Omnopon-scopolamine is especially valuable in phthisical cases, as it obviously does away with the disadvantages of inhalation anæsthesia.

Urinary system.—In severe abdominal operations the quantity of urine during the first 24 hours shows a marked reduction, while in other cases the reduction is less. In many practically no reduction in amount is noticed. In one case of subtotal gastrectomy with colectomy only 10 oz. of urine were passed during the first day, a reduction of 25 oz., but in cases where the operation *per se* does not interfere with metabolism the reduction amounts to from 10 to 15 oz., so that again there is little difference from inhalation anæsthesia. During the second day there is an increased excretion in most cases, and the amount passed before operation is equalled during the third day. In no instance has albuminuria or glycosuria appeared during convalescence. The specific gravity is usually raised on an average from about 1020 before to about 1028 after operation, the rise being usually in inverse proportion to the quantity passed. The quantity of urea passed daily has been estimated in a few cases before operation and during the first three days thereafter. The number of cases estimated, however, has been too small to draw definite conclusions, but aided by the rough method of estimation of the urea from the specific gravity, we may infer that the effect of omnopon-scopolamine on healthy kidneys is of little importance from a practical point of view. The effect of this narcotic on the function of the kidney seems to compare favourably with that of an inhalation anæsthetic. In old people, especially where the quantity on the day following operation has been much decreased, a few doses of such a simple diuretic as spirit of nitrous ether have speedily had a beneficent effect.

Nervous system.—The mental acumen of the patient

remains dulled in some cases for a short time (8–10 hours) after operation, but thereafter this condition rapidly passes completely away. There has been no headache, restlessness, or giddiness complained of even by nervous patients during convalescence. All superficial reflexes are sluggish but normal again by the day after operation. Muscular paralysis, hyperæsthesia, or anæsthesia of any description has never been noted. Two cases have been transferred to the lunatic asylum, but as there had been mental derangement in both cases some time previous to operation it is unfair to ascribe any causative influence to the omnopon, especially as it is found to be of such value in psychiatric cases (Haymann). One case, gastro-enterostomy for pyloric stenosis, had twice previously been in the asylum, and had two brothers who had also been confined there. The other case was one of trephining for depressed fracture which had been caused eight years before operation. The continuous headache and worry were so annoying to the patient that he had stated before operation several times that "he did not feel quite sure of himself in that he might do himself harm." He improved vastly, was much brighter in every way, had no headaches, and was dismissed three weeks after operation. On the day after dismissal from hospital he was found wandering in the street, had apparently "suicidal mania," and was taken to the asylum.

The healing of the operation wounds is not delayed in the slightest degree by the use of the local anæsthetic.

There has been one case of shock—an abdomino-perineal excision of the rectum above referred to. There has been one post-operative collapse from internal hæmorrhage due to slipping of a ligature on the ovarian vessels. It has been suggested that the omnopon might obscure symptoms of internal hæmorrhage, but as a good colour and pulse are characteristic of omnopon-scopolamine narcotisation it is unlikely that any real difficulty will ever occur. The restlessness of severe hæmorrhage is, however, likely to be absent.

Deaths Occurring after Operation in which Omnopon or Omnopon-scopolamine has been Used Alone or in Conjunction with Other Anæsthetics.

There were but seven deaths in the series of 300 cases.

1. Male, aged 65. Duodenal ulcer, with secondary anæmia (Hb. 52 per cent., R.B.C. 2,300,000). Death on fourth day from acute lobar pneumonia of 18 hours' duration.
2. Female, aged 54. Extensive carcinoma of stomach. Gastrectomy. Death on fifth day from pulmonary embolism.
3. Male, aged 67. Comminuted fracture of upper end of femur. Plated. Death 17 hours later from fat embolism. Ether used.
4. Male, aged 65. Hypertrophy of prostate with septic urine. Prostatectomy in two stages. Death on eighth day after second operation from double suppurative pyelonephritis.
5. Male, aged 62. Acute intestinal obstruction from band, three days' duration. Death four hours later (½ dose omnopon only, plus ether).
6. Female, aged 59. Carcinoma recti. Abdomino-perineal excision. Death from shock six hours after operation. Ether used.
7. Negro male, aged 40. Double renal and perirenal abscesses. Death three weeks after operation from marasmus. (The patient refused food, having, as he said, made up his mind to die.)

It will thus be seen that in no case could the cause of death be ascribed justifiably to the effects of the omnopon-scopolamine.

Treatment of Cases in which Excessive Action of the Drug Occurs.

The usual stimulating remedies may be used, but probably most good will be got from the intravenous infusion of saline solution in which one or two grains of potassium or sodium permanganate are dissolved. Atropine has apparently little effect. The possible benefit obtained in cases of persistent sickness from the administration of potassium permanganate by the mouth has already been referred to.

It will be noted that none of the cases in the following table are trivial ones, which would ordinarily require such a small amount of ether, especially when given on a mask by the open method. Many of the remaining cases, not included in the foregoing lists, were difficult pelvic cases, operations on joints or bones, &c., or occurred at the beginning of the series when the administration of the omnopon-scopolamine or local anæsthetic was not so efficient. It is readily appreciated that this method of narcotisation alleviates, in a very great measure, the anxieties of anæsthetists.

Synopsis of Cases requiring no Ether.

Appendicectomy (both acute and interval cases)	22
Appendicostomy	1
Cartilage (excision of semilunar of knee)	2
Cholecystectomy or cholecystostomy (2 with choledochotomy)	5
Colectomy	3
Cystotomy (suprapubic)	7
Exploratory laparotomy (inoperable cancer)	3
Fractures (plating and nailing)	8
Gastrectomy (subtotal, 2 with colectomy)	6
Gastro-enterostomy (1 with gastroplasty for hour-glass stomach)	14
Hæmorrhoids (Whitehead's operation)	6
Hallux valgus	1
Hernia	12
Hysterectomy (supravaginal for large myoma)	2
Hysteropexy	3
Ileosigmoidostomy	4
Intestinal obstruction (one with resection of bowel)	2
Ligamentum patellæ, suture of	1
Mammary tumours (four complete operations for cancer)	8
Nephropexy (one double)	5
Nephrotomy (double)	1
Ovarian tumours	3
Penis, complete removal of	1
Perineal operations	8
Prostatectomy	4
Recurrent growth (carc. mammæ) in axilla	1
Sarcoma of leg (extensive removal)	1
Skin-grafting (extensive)	6
Thyroidectomy	2
Trephining	1
Varicose veins (four double)	6
Total	149

Cases requiring under 3 Fluid Ounces of Ether (Open Method).

Appendicectomy (acute and chronic)	13
Cartilage (excision of internal semilunar of knee)	1
Cholecystectomy or cholecystostomy	3
Excision of joints (knee-tarsus)	2
Fracture (plating)	2
Gastro-enterostomy	2
Hernia (double)	1
Hysteropexy	3
Intestinal obstruction (one with resection of bowel)	3
Mammary tumour	1
Nephropexy	1
Ovarian tumours	4
Perineorrhaphy	1
Sarcoma of neck (excision)	2
Varicose veins	3
Total	42

Conclusions.

1. That omnopon-scopolamine used in the dose and manner recommended is apparently a perfectly safe narcotic.
2. That it increases enormously the field of application of local anæsthetics,
3. That it is especially advantageous when used in conjunction with local anæsthetics in extensive operations in old patients.
4. That the innate objection of many patients to being conscious during the performance of extensive operations does not constitute, according to experience, a justifiable contra-indication to the method.
5. That there are no bad sequelæ which can be reasonably ascribed to the use of the drugs in the method described, even in cases where lesions of heart or lungs have been a serious objection to the use of an inhalation anæsthetic. The writer has not had sufficient experience of operations in renal lesions to enable him to draw satisfactory conclusions.
6. That with increasing experience in the dosage of the omnopon-scopolamine combination, the results, especially in younger adults, are increasingly satisfactory.

Since writing the above I have had increasingly satisfactory experience with over 150 more cases. The improved results have been due mainly to improvement in dosage for middle-aged patients. A repeat half dose has frequently been necessary, and some have got even a further quarter or half dose at the commencement of the operation. In some old patients half or three-quarters of the ordinary dose has

been ample—in fact, in one or two the effect has lasted for 12 to 16 hours. This is apt to happen apparently in enfeebled, wasted, "wizened" patients, especially if they give a previous history of "knuckling under" to minor maladies. I should, therefore, like to give a note of warning that the narcotisation is not in all cases the extraordinarily simple matter which onlookers are apt to suppose. Experience only will enable us to estimate when such doses are really required, and therefore in beginning the use of the drug we should far rather incur imperfect results and have resort to ether than run unnecessary risk with omnopon alone. We must constantly keep in mind that the full effect of the drug is produced slowly and that repeat doses within a short period have a more potent effect than might be supposed. It is almost impossible to convey on paper the indications for repeat doses, or rather for the withholding of repeat doses. Some patients look drowsy or may be sound asleep when this judgment has to be given, yet wake up directly the operation is begun. The rate of respiration, the general condition and the temperament of the patients, the apparent lethargy produced, and other minor conditions have all to be taken into consideration. It is well, therefore, in order to have good results, for the operator to decide previously what the initial dose is to be and to have some reliable person on the spot to decide half an hour before operation whether a second dose is necessary.

In satisfactory cases, the condition of the patient before, during, and after operation is so ideal that I think it well worth while to take trouble to master the details which will procure equal results in all cases.

Aberdeen.

BREAST-FEEDING: THE VALUE OF THE TEST-FEED.[1]

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BY a "test-feed" we mean an estimation of the amount of breast-milk obtained by the nursling at a single feeding. The estimation is made by weighing the infant before and after feeding on scales sufficiently accurate to record differences of one drachm avoirdupois. This test has been applied to most of the breast-fed babies who have attended the infant consultations at the St. Marylebone General Dispensary during a period of 6½ years, to infants who have attended the Kensington Infant Consultations during a period of 4½ years, to a certain number of sick infants who have attended at the Queen's Hospital for Children during the last 2½ years, and to a considerable number of infants born in the lying-in wards of the Marylebone Workhouse during the last 2 years. We have thus, in the aggregate, a large number of estimations of the amount of breast-milk obtained by nurslings during the whole of the first year. These estimations, in the cases of the Marylebone General Dispensary and the Kensington Infant Consultations have been taken under our personal supervision, while the Marylebone Workhouse and Queen's Hospital cases were weighed by trained and experienced nurses.

It is unfortunate that we have been unable to find analogous observations made in this country with which to compare our figures. To prove how little the method is understood in this country we may mention that when we embarked on these researches, in spite of the most careful inquiry, we could find no scales which could be used for this purpose, and we were compelled to order special weighing machines to carry out the work. It is needless to say that spring-scales, or ordinary baby scales, are quite useless for the purpose of accurate weighings. Heretofore, all our knowledge with respect to the amount of breast-milk consumed by the nursling has been derived from observations made in France, Germany, and Austria, where racial and social conditions are somewhat different from our own.

Our results are so widely different from those obtained by Heubner, Feer,[2] Camerer,[3] Peter,[4] Beuthner,[5] Hachner,[6] and others on the Continent that we might have hesitated to publish our several results had they not shown such singular agreement in the more important details. Comparing these foreign results with ours, it would appear that nursing mothers who live under good hygienic conditions in maternity institutions such as those in which these continental observations were made, supply much larger amounts of milk than do the class of women in this country who live at home and attend our out-patient clinics.

Our observations, which for the most part have been made at varying times of the day at our respective clinics, possibly are not so accurate as many of those made abroad in which the amount of every feed was definitely measured. In our investigations we have, in each case, ensured the lapse of an interval of from two and a half to three hours between the time the infant was last put to the breast and the time of the "test-feed." We have estimated the total supply in the 24 hours by multiplying the amount of milk obtained at one "test-feed" by the total number of feeds taken in the 24 hours. Thiemich[7] asserts that this does not give an accurate estimation of the amount in the 24 hours. It is somewhat difficult to prove or disprove the truth of this statement in the case of out-patients, for it is practically impossible to estimate all the domiciliary feedings Although the test feeds were made in Marylebone sometimes at 10.30 A.M. and sometimes at 3 P.M., in Kensington at 3 P.M., and at the Queen's Hospital at 9 30 A.M., our several estimates for the total amount for the 24 hours agree so closely that it is difficult to believe there is any substantial inaccuracy in our method. In private cases we have noted one feed differs but little from another when the feedings are by the clock, and not at irregular intervals. We here append the results of a few private cases in which every feeding was carefully estimated.

TABLE I.—*Cases in Private Practice. Test Feeds Conducted for each Meal during 24 Hours for Three Days in 5 Cases. Average for Three Days in Each Case.*

Age and weight of infant.	Time of feeding.								
	5 A.M.	7 A.M.	9 A.M.	11 A.M.	1 P.M.	3 P.M.	6.45 P.M.	8.45 P.M.	10.45 P.M.
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
Case 1.—17 days, 9 lb. 7 oz. ...	5	3	3¼	3¼	3	3¼	3¼	3	3
,, 2.—1 month, 9 lb.	4	2	2½	2	2	2	2½	3	2
,, 3.—2 months, 10 lb. ...	3½	2	2½	2	2½	2	2¼	2½	2
,, 4.—4 months, 10 lb. 6 oz.	5	—	3	—	2½	—	3½	—	3
,, 5.—2 months, 11 lb. ...	5	3	3¼	2	2½	3	3½	2½	3

It will be noted that the variations in the amount of milk consumed are comparatively slight, except in the case of the early morning feed; this feeding, owing to the prolonged rest over-night, is invariably the largest in the 24 hours. On the other hand, some of the figures which we have collected from the literature appear to bear out Thiemich's statement. For instance, certain of Feer's cases show considerable variations, and, again, variations to a lesser degree are to be noted in Peter's cases. We do not know, however, in these instances whether the intervals were strictly regulated by the clock. We ourselves have always attached the greatest importance to regularity in the times of feedings, and have spared no trouble to secure complete regularity in the meal-times of the infants who have attended our consultations.

Most of our estimations have been made between the third week and the sixth month. During the first two weeks of

[1] A paper read before the Society of Infant Consultations on July 13th, 1911.

[2] Jahrbuch für Kinderheilkunde, Band xlii., 1896.
[3] Zeitschrift für Biologie, Band xiv., 1878.
[4] Archiv für Kinderheilkunde, Band xxx., xxxiv., 1902.
[5] Ibid., Band lvi., 1902.
[6] Jahrbuch für Kinderheilkunde, 1880–1881.
[7] Lehrbuch für Kinderheilkunde, E. Feer, p. 40, 1911.

life infants are seldom brought to our consultations, and after the sixth month we frequently employ supplementary feedings, which naturally deprive the single test-feed of statistical value.

To add to the completeness of our figures the early hiatus between the first and twenty-first day of life has been filled in by a very carefully conducted series of "test-feeds" which have been carried out in the maternity wards of the Marylebone Workhouse. These figures can, in a sense, be compared to those of foreign observers, as they refer exclusively to nursing mothers who have been kept under observation in an institution where the dietetic and hygienic conditions were carefully regulated. Our figures for this group are based on 61 cases, and the total number of test-feeds taken was 9435. For the sake of comparison we inscribe in parallel columns similar averages worked out by Feer and Camerer; as their figures are based on six cases only they have not the same statistical value as our own.

TABLE II.—*Average Amount of Milk Consumed by Nurslings during the First Ten Days of Life in 24 Hours.*

Day of life.	1st.	2nd	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
Our cases (61)	½	4⅛	4⅛	6½	6	7¼	8	7	8	8½
Feer's cases (6)	0	½	5¾	11¼	15	16½	20	18½	21	20
Camerer's cases (6) ...	¾	2½	6	11½	12½	13	16	16½	16	15¾

We are unable to explain why our figures, taken as a whole, are so much lower than those given by Feer or Camerer; nor can we explain the anomaly that on the second day of life our cases obtained more milk than did those in the parallel series.

In Table III. we give more detailed figures of the amount

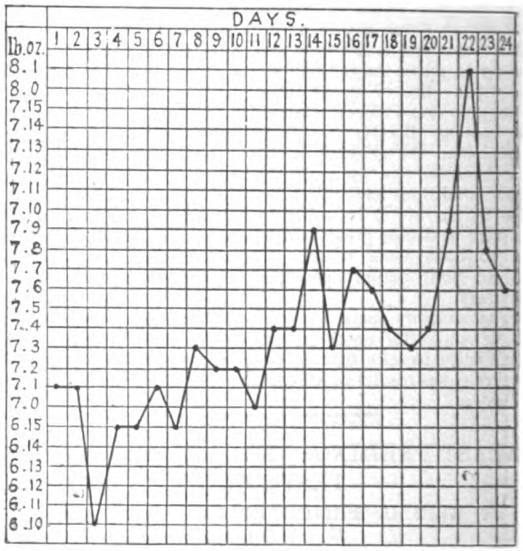
TABLE III.

Day.	Total quantity of food taken each day.	Average number of feeds each day.	Average quantity of each feed.	Daily weight.
	oz. drs.		drs.	lb. oz.
1st	0 9	3·23	2·28	7 1
2nd	4 15	5·00	5·23	7 1
3rd	4 12	8·88	8·19	6 10
4th	6 4	9·24	9·98	6 15
5th	6 11	9·33	11·70	6 15
6th	7 3	9·22	12·39	7 1
7th	7 9	9·53	12·43	6 15
8th	7 13	9·44	13·29	7 3
9th	8 1	9·43	13·80	7 2
10th	8 4	9·11	13·93	7 2
11th	7 14	9·40	13·36	7 0
12th	8 8	9·38	14·88	7 4
13th	8 13	9·23	14·69	7 4
14th	8 11	9·48	14·70	7 9
15th	9 3	9·29	15·70	7 3
16th	9 8	9·52	15·95	7 7
17th	9 4	9·54	15·94	7 6
18th	9 10	9·58	16·08	7 4
19th	9 12	9·69	16·07	7 3
20th	10 4	9·00	18·43	7 4
21st	11 5	8·00	18·10	7 9
22nd	10 6	9·28	18·4	8 1
23rd	11 7	10·00	18·3	7 8
24th	12 2	10·00	19·4	7 6

of milk obtained on successive days by the infants in our series, of the number of feeds given in the 24 hours, and of the weight of the infants from day to day, from which the average daily gain or loss can be calculated.

It will be noticed that the gains or losses registered from day to day show somewhat marked deviations from the standard which is generally regarded as normal; nevertheless, the curves, taken as a whole, conform to the usual type—that is to say, at the end of the first week the infants have regained the initial loss, and present approximately the same weight as at birth, and during each of the following weeks they show a gain of about half a pound. In other words, the infants in our series, in spite of the fact that their average intake of food is well below the accepted standards, increase in weight at about the same rate as infants who are estimated by other observers to take a very much larger quantity of milk. This is shown by the accompanying curve:—

FIG. 1.—*Curve showing Variations in Weight during First 10 Days of Life. Average Weight of 61 Breast-fed Infants.*



The average test-feed from the tenth day onwards has been estimated in the cases of a large number of infants of varying ages who have attended at our clinics in Marylebone and Kensington. The mothers of these infants lived at home without any disciplinary control. For the most part, the infants sent to the Marylebone Consultations were either ill, mismanaged, or weaklings from hereditary or congenital causes, while of those sent to the Kensington Consultations the majority were mismanaged, a few were ill, but some were fine, healthy infants.

For the sake of comparison, we give the test-feeds of a number of babies who were brought to the Queen's Hospital for Children, either because they were wasting or because they presented other symptoms of disease.

TABLE IV.—*Showing the Average Amount of Milk Consumed at a Test-feed During the Various Ages up to Nine Months According to Different Observers.*

	Weeks.			Months.							
Age	2	3	4	2	3	4	5	6	7	8	9
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
Marylebone figures	1·87	1·62	1·95	2·04	2·26	2·23	3·0	2·81	3·08	2·67	—
Kensington figures	—	1·75	1·85	1·8	2·0	2·15	2·5	2·67	2·72	2·9	3
Queen's Hospital figures	—	1·0	1·47	2·0	1·84	1·35	2·18	3·0	2·08	—	—
Peter's figures ...	2·4	2·7	2·87	5·42	—	—	—	—	—	—	—
Camerer's figures ...	2½	3½	3½	3½	4½	3½	—	—	—	—	—
Beuthner's figures	2	2¼	2⅔	3¼	4½	4½	5	—	—	—	—
Feer's figures	2·5	2·8	3·5	4·0	4·5	4·8	4·8	—	—	—	—
Hachner's figures ...	2½	2½	3	5½	5½	5½	5½	5½	7	—	—

Unfortunately, we have been able to find only a few figures by foreign observers with which to compare our results, since most of their estimates are worked out for the 24 hours and not for the individual feeds. In the following table we give in parallel columns our figures for the 24 hours and also those published by Camerer, Feer, Beuthner, Peter, and Hachner:—

TABLE V.—*Showing the Average Amount of Milk Consumed in the 24 Hours.*

	Weeks.			Months.						
Age	2	3	4	2	3	4	5	6	7	8
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
Marylebone figures...	18·8	14·77	13·46	16·38	16·02	15·85	13	18·25	20·66	12
Kensington figures	—	16·5	14·5	20	14·5	13·2	17·2	21·5	15·4	26·2
Queen's Hospital figures...	8	—	9·71	18·15	14·3	11·66	9·16	16·25	12	12
Camerer's figures...	19	20	28	28	28·25	30·5	33	33·5	—	—
Feer's figu ...	17·5	15	20	27·5	26·25	27	28	34	30·5	—
Beuthner's figures...	13	18	19·5	27	28·5	28	—	—	—	—
Peter's figures...	16	17	20	21	—	—	—	—	—	—
Hachner's figures...	15	19	19	28	28	26	30	33	44	—

The following table shows the number of infants of different ages on which our figures and those of foreign observers were based. It will be noticed that the number of cases on which the foreign observations were based were very few as compared with our own.

TABLE VI.—*Showing the Number of Infants of Different Ages on which the Figures in Table V. are Based.*

	Weeks.			Months.						
Age	2	3	4	2	3	4	5	6	7	8
Marylebone cases	5	9	26	74	39	20	8	7	3	1
Kensington cases	—	2	10	20	15	13	8	5	8	8
Queen's Hospital cases	1	—	7	30	23	6	6	4	1	1
Peter's cases	9	10	7	5	—	—	—	—	—	—
Camerer's cases*	—	—	—	—	—	—	—	—	—	—
Hachner's cases	1	1	1	1	1	1	1	1	1	—
Beuthner's cases	2	2	2	2	2	2	—	—	—	—
Feer's cases	2	2	2	2	2	2	2	2	2	—

* Camerer's figures, according to Feer, were based on 97 cases, but we have not been able to ascertain the number for the various ages.

Table VII. on the following page shows in parallel columns the average weights and the average increase in weight per week of the infants referred to in the above tables.

With respect to the figures in Table VII. there will be found a most remarkable similarity in the Marylebone and Kensington cases; the figures from the Queen's Hospital, as would naturally be expected in the case of sick infants, are altogether on a lower plane. Camerer's figures are uniformly higher—that is to say, his infants, who are well cared for in institutions, and whose mothers are regularly and judiciously fed, show a larger weekly increment in weight, which is almost, if not entirely, parallel with the larger amount of breast milk consumed.

Our experience with the test-feed in Marylebone and Kensington has proved to us that no reliance can be placed on the quantity of milk consumed as a criterion of the progress or nutrition to be expected in the infant. Many babies make the most remarkable progress on exceedingly small quantities of milk, while others, whose daily allowances appear to be ample, show various symptoms of malnutrition. Our general impression for a long time has been that, on the whole, the infants who obtain the smaller amounts give less trouble and make better progress than those obtaining the larger quantities. We, therefore, decided to arrange our cases into three groups according to the amount of milk consumed daily and ascertain whether any inferences could be drawn from the evidence thus afforded:—Group 1: Those obtaining less than 10 ounces of milk in the 24 hours; Group 2: those obtaining from 10 to 20 ounces; and Group 3: those obtaining over 20 ounces.

TABLE VIII.

1.—*Cases in which Less than 10 oz. of Milk were Consumed during the 24 hours.*

—	No. of cases.	Average age.	Average weight.	Average amount of food in 24 hours.	Average gain per week.
		Weeks.	lb. oz.	oz.	oz.
Marylebone... ...	51	9½	9 2	6·68	4·38
Kensington... ...	9	16	11 10	6·5	4·87
Queen's Hospital	17	11½	9 12	6·6	1·4

2. *Cases in which between 10 and 20 oz. of Milk were Consumed during 24 hours.*

Marylebone... ...	82	9⅝	10 6	14·0	4·66
Kensington... ...	50	13	10 5	13·0	3·74
Queen's Hospital	47	10	10 0	14·5	2·1

3.—*Cases in which more than 20 oz. were Consumed during 24 hours.*

Marylebone... ...	49	9⅞	10 9	25·5	3·17
Kensington... ...	25	16	13 1	27·0	2·81
Queen's Hospital	13	11½	12 12	23·5	1·9

The similarity between the Marylebone and Kensington cases is most striking. The Queen's Hospital figures are hardly comparable, for they represent the test feeds obtained in the case of infants all of whom were ill, but even this series of cases would not have differed so greatly from the first series had it not been that among the infants obtaining less than 10 oz. of milk in the 24 hours there were two or three very severe cases of illness presenting heavy losses in weight during the week.

In both the Marylebone and Kensington series the infants who for the time being were obtaining less than 10 oz. of milk in the 24 hours showed a larger weekly increment in weight (4·38 oz. and 4·8 oz.) respectively than those infants who were obtaining larger amounts. Those infants who were obtaining over 20 oz. per week showed in both of our series the smallest weekly gains in weight.

It would appear that those infants who are brought up in institutions and receive a larger amount of breast milk increase in weight more rapidly than those who attend our infant consultations as out-patients; on the other hand, among this latter class of infants it would appear that those who receive larger quantities of milk, instead of putting on more weight per week put on a smaller amount.

If our observations are reliable it is not easy to offer an explanation of this paradoxical evidence. It may be that on an average the milk which is secreted in large amount is inferior in quality, and in this connexion it must be remembered that chemical analysis only affords a very crude estimate of quality. Analysis may show the relative

percentage of proteids, fats, and sugars, but it cannot, as yet, afford a differential estimation of constituent proteid bodies, nor does it indicate whether or no they possess toxic properties. On the other hand, it must be remembered that institutional infants live under superior hygienic conditions than do the poor class of infants who attend our consultations; *ceteris paribus* the better the hygienic conditions and the more active the vital processes the greater is the demand for food. Want of air, sunlight, and all the natural stimuli for active metabolism reduce the vitality of our out-patient infants to such a debased level that it is conceivable that an allowance of food which would be physiologically appropriate for the institutional infants may be relatively excessive for the needs of our class of out-patient infant; and overfeeding, as is now well understood, leads sooner or later to malnutrition and loss of weight.

We do not claim that our figures can be regarded as criteria of the amounts of breast milk obtained by infants exposed to different and better conditions; indeed, we know from our experience of private cases that the amount of milk consumed by the latter is often very much larger. The largest individual test-feed recorded at the Marylebone Consultations is just over 5 oz., and at Kensington it is 6 oz., whereas in private cases 6, 7, or even 8 oz. are by no means uncommon measurements for individual test-feeds. We are, however, quite agreed that it is impossible to conduct breast-feeding on accurate or scientific lines without the control of an occasional "test-feed."

The test-feed is the most valuable aid to the diagnosis of the ailments of breast-fed infants which we possess. It is mere guesswork to attempt to treat cases of this kind unless we know how much milk the infant is receiving.

Infants are often brought to our clinics who have been treated by drugs for constipation when the sole cause of the condition is starvation. Again, infants are often given supplementary feeds of cow's milk in amounts of 4 or 5 oz. (we have known as much as 9 oz.), when the test-feed proves that the amount they obtain from the breast is about 1 oz., sometimes less; under such conditions it is hardly surprising that cow's milk is found to disagree. As an aid to diagnosis and for accurately adjusting the amount of food given in supplementary feedings, or at the time of weaning, the test-feed soon becomes absolutely indispensable to those who have had experience of its advantges.

It is hoped that the publication of these results will stimulate others to pursue similar lines of inquiry in order that our figures may be critically examined.

On the whole, breast-feeding is conducted more carelessly than artificial feeding, and our experiences of the methods pursued at many maternity institutions suggest that this statement is true in their case also. The results of breast-feeding are often so extremely bad that recourse is taken to artificial feeding, and the latter is often unjustly blamed for subsequent failures which more reasonably can be referred to initial mistakes in breast-feeding.

The best results we obtain both in Marylebone and in Kensington are undoubtedly those cases in which combined feeding is employed after the third month of life. In all these cases the amount of artificial food supplied is regulated by the evidence afforded by the "test-feed," and the subsequent physiological reactions of the infant.

TABLE VII.

Age		Weeks. 2	Weeks. 3	Weeks. 4	Months. 2	Months. 3	Months. 4	Months. 5	Months. 6	Months. 7	Months. 8
Marylebone cases	Weight	lb. oz. 7 10	lb. oz. 8 8	lb. oz. 8 11	lb. oz. 9 2	lb. oz. 10 8	lb. oz. 11 12	lb. oz. 12 1	lb. oz. 13 11	lb. oz. 15 3	lb. oz. 16 15
	Weekly increase	0 8·36	0 5·75	0 4·57	0 4·77	0 4·15	0 4·25	0 4·87	0 3·68	0 4	0 1
Kensington cases	Weight	—	8 8	10 4	9 2	10 14	12 1	13 3	13 3	14 15	19 3
	Weekly increase	—	0 5	0 4·5	0 4·5	0 4	0 4·25	0 4	0 3·4	0 3	0 3
Queen's Hospital cases	Weight	—	—	8 11	7 12	11 10	11 12	12 1	13 5	—	17 13
	Weekly increase	—	—	0 3·58	0 3·55	0 2·66	0 2·51	0 4·8	70 1	—	—
Camerer's cases	Weekly increase	0 5	0 5	0 9	0 5	0 5	0 7	0 5	0 4	—	—
Feer's cases	Weekly increase	0 4·5	0 6	0 6·5	0 7	0 4	0 4	0 4·5	0 −½	0 5	0 5
Beuthner's cases	Weekly increase	0 3	0 4·5	0 8	0 9	0 5	0 2	—	—	—	—

PACHON'S SPHYGMO-OSCILLOMETER

AND ITS USE IN THE DETERMINATION OF BLOOD PRESSURE, WITH NOTES ON THE THEORY OF OSCILLATIONS.

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FOR general purposes sphygmomanometric methods conveniently may be divided into two main groups: (1) those which are based upon estimation of the pulse wave below the level of the point of compression; and (2) those which are based upon estimation of movements or oscillations of the arterial wall at the level of compression.

Of the first group, perhaps the most widely used in this country is one of the modifications of the Riva-Rocci sphygmomanometer. In practice, however, such an instrument registers only the maximal or systolic arterial pressure, and it is only in experienced hands, and even then with considerable difficulty, that the minimal or diastolic pressure can be determined with any approach to accuracy. It is therefore impossible to obtain a complete blood pressure record.

With reference to the second group, for information other than that regarding the systolic pressure, we must turn to instruments which are based on the "method of oscillations." This method was first evolved by Marey,[1] who showed that if a vessel, instead of being compressed upon one surface only, was placed in a fluid medium to which pressure could gradually be applied, it was clear that by raising the pressure of the surrounding medium, a point was reached at which the internal pressure could be overcome with resultant collapse of the arterial wall. The closure of the vessel indicated the moment at which the surrounding pressure, as measured by the manometer, exceeded the intra-arterial pressure. If instead of an artery a segment of a limb was enclosed within an inelastic reservoir filled with fluid, the oscillations set up in the fluid were found to vary in amplitude with the pressure. Hence Marey endeavoured to find that pressure which was requisite to produce the largest oscillations, believing that at this moment the completely relaxed arterial walls floated freely, and that an effect was produced similar to that which would occur were the blood pressure applied directly to the manometer.

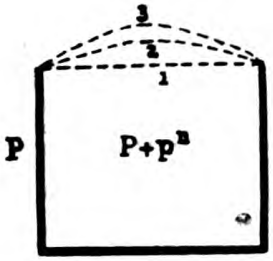
Founded on this method of oscillations many instruments

have been devised, including those of Hill and Barnard, Erlanger, von Recklinghausen, Vaquez, Pal, and Amblard, but although a great advance has been made in such instruments yet all of them have the grave disadvantage of working at inconstant pressure.

In considering instruments which register both systolic and diastolic pressures, reference must be made to the auscultatory method, which was discovered in 1905 by Korotkow,[2] and which has since been studied extensively by various workers—in particular, Krylow, Fischer, Schrumpf, Zabel, Winterhalder, and more recently in England by Oliver. But this method, although affording information as to the systolic and diastolic pressures, has the obvious disadvantages which are inseparable from any auscultatory method, and cannot be compared as a practical one with the oscillatory method as exemplified in Pachon's instrument.

Let us now consider what takes place in an ordinary aneroid apparatus, such as that of Hill and Barnard or Amblard, which may diagrammatically be represented in Fig. 1. When the instrument is at rest the pressure within

FIG. 1.



and without will be the atmospheric pressure P and the wall of the aneroid chamber will not be distended, as at (1). If now the internal pressure be raised so that the capsule assumes the position (2), the internal pressure will then be equal to the sum of the atmospheric pressure P, together with the given additional pressure p. Suppose the pressure be still further raised to p^n, the wall of the aneroid will assume the position (3), the internal pressure being $P + p^n$, whilst the external pressure remains P, the amount of distension being represented by the formula $(P + p^n) - P$.

by the invention of the sphygmo-oscillometer of Pachon,[3 4 5] which works at constant pressure throughout the whole period of investigation. I do not propose here to enter into a detailed description of the construction of this apparatus, since this has already been given.[6] Briefly, however, it may be said that Dr. Pachon has enclosed an aneroid capsule of aluminium within an air-tight and rigid metallic box. (Fig. 2.) This capsule is connected directly with an armlet, and by a three-way passage with the interior of the outer metallic box. The pressure within this system is indicated

FIG. 2.

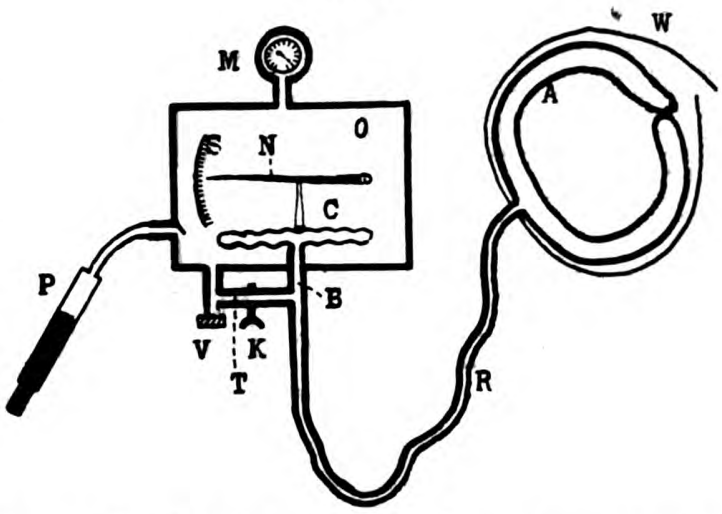


Diagram in section of the sphygmo-oscillometer of Pachon. P, pump; M, manometer; O, outer metallic box; C, capsule; N, registering needle, which is drawn too coarsely, and should taper to a fine point at the left extremity and be quite horizontal; S, oscillometer scale; V, escape valve; T, B, R, three-way channel; K, separator key; A, indiarubber armlet; W, outer inelastic webbing.

on the dial of a small manometer. The inner capsule can be cut off from communication with the external chamber by means of a separator key, and thus allows pulsations set up in the armlet to be transmitted directly to the interior of the aneroid chamber. Fig. 3 represents purely diagrammatically this instrument, (a) being the capsule and (b) being the outer box.

Just as in Fig. 1, the pressure throughout the whole apparatus at rest will be the atmospheric pressure P, but if the pressure is raised to p^n, on each side of the aneroid capsule the pressure will now be $P + p^n$, the external

FIG. 3.

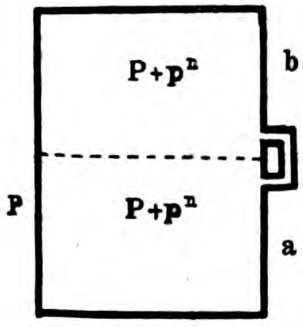
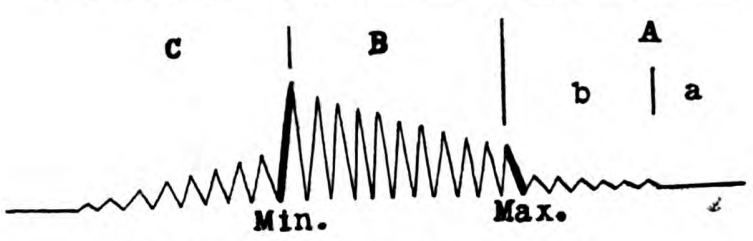


FIG. 4.



The reading in this diagram, as in Fig. 5, is from right to left.

If the capsule be in the position (2) any communicated movement due to alterations in internal pressure set up by variations in the blood pressure must of necessity be superadded, therefore the movement of the capsule will be limited and the greater p becomes the less will be the movement of the capsule. Hence it follows that an instrument of this type works at inconstant pressure, and with increasingly high grades of blood pressure its sensitiveness diminishes.

Recently, however, these difficulties have been overcome

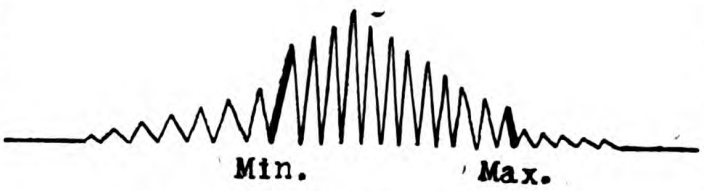
atmospheric pressure, of course, still remaining P. No displacement of the walls of the capsule therefore can take place, except that which is caused by variations in pressure transmitted to the armlet by the blood pressure. As Dr. Pachon says, the instrument is always extremely sensitive and works with constant maximal sensitiveness.

We may now consider the series of events which occurs when the method of oscillations is used. When the pressure is raised considerably above the maximal blood pressure (Fig. 4) we find a Phase A where the needle either shows:

(a) no oscillations; or (b) oscillations, equal and of small magnitude or of a negligible increase: these are perhaps better termed fibrillations. As the pressure is lowered, a point (Max., Fig. 4) is reached at which a sudden and definite increase in the size of the oscillation occurs. This point indicates the maximum or systolic blood pressure. There is then a gradual increase in the size of the oscillations (Phase B) until a point is reached at which they have attained their greatest amplitude. This point registers the minimum or diastolic pressure (Min., Fig. 4). Below this a sudden decrease takes place in the size of the oscillations which gradually disappear (Phase C).

The above represents a curve which is typical; nevertheless, variations may occur, an example of which is given in Fig. 5. Such variations are most manifest, as one would expect, when instruments working at inconstant pressure are employed, and at times there may be considerable difficulty in determining the exact point of the systolic and diastolic pressures. With Pachon's sphygmo-oscillometer, on the other hand, the greater length of oscillation due to the fact that the instrument works at constant pressure renders it extremely sensitive, and therefore enables changes in the size of the oscillations to be perceived with ease.

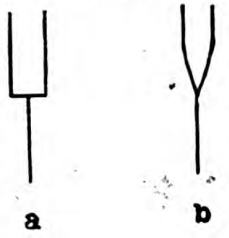
FIG. 5.



This reading, as in Fig. 4, is from right to left.

To understand the above diagram let us investigate the changes which take place in an artery under compression. The systolic pressure is that pressure which is necessary completely to close an artery and to stop all circulation below. In theory, therefore, supramaximal oscillations should not exist, and, were the lumen of the artery suddenly and cleanly obliterated, as in Fig. 6a, this indeed would be the case. In practice, however, it will be found that not infrequently a funnel-shaped depression of the artery (Fig. 6b) is produced at the upper border of the armlet. Shocks due to the blood stream acting on this funnel-shaped depression are transmitted to the registering needle, and so cause small indefinite oscillations, but no separation of the arterial wall takes place. As the pressure is decreased, at the level of the systolic blood pressure the arterial walls separate to a very slight extent and for a very short time with a resultant sudden and definite increase in the length of the oscillations. With further lowering of the pressure the arterial walls separate and remain apart for gradually increasing intervals. Hence the oscillations will become larger. At the level of the diastolic pressure—i.e., when the external pressure just equalises the internal blood pressure—the oscillations will theoretically be greatest. At this point the arterial wall supports an equal pressure alike on its inside and its outside, and, floating freely, is in a condition of equilibrium. Below this level the oscillations diminish in proportion as the external pressure progressively becomes less than the internal pressure until at length they fade away entirely.

FIG. 6.



It will now readily be understood how difficulty arises in accurately estimating such degrees of variation with an ordinary manometer working at inconstant pressure, whose capsule already is in a state of positive distension. With the sphygmo-oscillometer, on the other hand, *by reason of the constant pressure which is maintained throughout, the oscillations are reproduced in their entirety.* At times the zone of supramaximal fibrillations is well marked, but rarely is there difficulty in distinguishing the definite increase in size which denotes the systolic pressure. Further, since the oscillations are reproduced to the best mechanical advantage, not only may the various characteristics of the pulse—e.g., arrhythmia, &c.—be studied most easily, but its amplitude may be recorded in terms of divisions of the oscillometer scale.

In conclusion, I propose to give a few typical examples of the figures which may be obtained by the use of the sphygmo-oscillometer. Neither systolic nor diastolic pressure alone affords that complete blood pressure record which is given when the systolic pressure, the amplitude of the pulse, and the diastolic pressure are noted simultaneously. Take, for example, a systolic pressure of 130 mm. as estimated by Pachon's instrument. This alone might indicate that we were in the presence of a case of mitral stenosis, pulmonary tuberculosis, or various asthenic states, &c. If to this, however, we add the diastolic pressure and the pulse-amplitude and obtain a formula such as 130– 0, 5– 80, we gain information of value. Put into words, this formula means that the systolic pressure is 130 mm., the amplitude of the pulse is half a division on the oscillometer scale, and the diastolic pressure is 80 mm. Such a formula is characteristic of mitral stenosis, where we have a low systolic pressure combined with a small pulse, and a diastolic pressure which is relatively high. Let us take another example. A systolic blood pressure of 250 may indicate aortic disease, arteriosclerosis, chronic interstitial nephritis, &c., but if we obtain a formula 250–7–50, we realise at once that we are dealing with a case of aortic regurgitation. Moreover, we know that these figures are evidence of pure aortic regurgitation, since when the regurgitation is combined with stenosis the diastolic pressure will be raised to a degree varying with the amount of stenosis.

This preliminary communication is intended merely as a brief outline of the "theory of oscillations," and of the salient points of an instrument which accurately records these oscillations. In a further paper I hope to publish some of the results which I have obtained from a large number of clinical determinations of blood pressure with Pachon's sphygmo-oscillometer.

My thanks are due to Dr. Kenneth Eckenstein, assistant pathologist to the National Hospital for Diseases of the Heart, for his kind assistance in taking readings with this instrument.

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Lower Seymour-street, W.

THE SEWERAGE OF FALMOUTH.—The Local Government Board has granted permission to the Falmouth town council to borrow £3875 for a sewerage scheme and the construction of a new road.

UNIVERSITY OF LONDON.—The London Inter-Collegiate Scholarships Board announces that combined examinations in anatomy and physiology and in arts and preliminary scientific subjects will be held on Tuesday, Sept. 19th, for medical entrance scholarships and exhibitions of an aggregate total value of over £1700, and tenable at University College, King's College, and in the medical schools of Westminster Hospital, St. George's Hospital, London School of Medicine for Women, University College Hospital, and King's College Hospital. Full particulars and entry forms may be obtained from the Deans of the respective medical schools, or from the secretary of the board, Mr. Alfred E. G. Attoe, University of London, University College.

FULMINATING APPENDICITIS: PRESENCE OF LIVER DULNESS: LIGATURE-TEMPERATURE.

BY F. W. FORBES-ROSS, M.D. EDIN., F.R.C.S. ENG.,
AND
QUINTIN CHALMERS, M.D. GLASG.

THE following case of acute general peritonitis, due to the sudden onset of gangrenous appendicitis, and rescued by prompt surgical aid, is deemed worthy of record, especially because it presented a classical train of symptoms so typical of the condition, with the exception of the presence of liver dulness. We also consider that the ligatures and sutures in the wall of the bowel and on the stump of the appendix should be regarded as a cause of the post-operative febrile condition, so often seen for a limited period following the operation for removal of the appendix in septic cases.

The patient, a male aged 34 years, an American from Boston, was seen by Dr. Quintin Chalmers at 9 A.M. on Oct. 19th, 1910, when he complained of a dull aching and stabbing pain over the region of the appendix. On examination the parts were tender, and some impairment of resonance was apparent, as well as slight unilateral rigidity of the abdominal parietes. The temperature was 99·6° F., and the pulse about 100. The tongue was more or less normal and moist. Rest in bed was advised, and an expectant attitude decided upon. At or about 3 P.M. (temperature 101·4° and pulse 110) the patient complained of an increase of pain, which continued until after 6 P.M., when he described himself as suddenly becoming easier. When he was seen by Mr. Forbes-Ross in consultation at 10 o'clock the same night, the patient expressed himself as feeling much better and fairly easy, but added that the pain he went through between 4 and 6 P.M. "would serve him as a memory for a lifetime." The fact was elicited that he had had three previous attacks of mild appendicitis before at intervals of about 18 months.

The physical condition was as follows. The abdominal parietes were absolutely rigid and retracted, and absolutely immobile during respiration. There was no marked tenderness over McBurney's spot, but resonance and an ill-defined tenderness (slight) over the whole abdomen, otherwise there was a sense of stomach-ache referred to the umbilicus, but nothing to compare with the pain between 4 and 6 P.M. The temperature at 10 P.M. was 102·4°, and the pulse was 124 and apparently rising in frequency. There was no absence of liver dulness. The tongue was moist and not by any means typical of the so-called "abdominal tongue." The patient was lying on his back with his legs drawn up, but had no anxious facies or sunken countenance—in fact, quite the reverse.

The diagnosis of acute general peritonitis in its initial stage was made, and immediate operation was advised as the only hope of survival of the existing attack. Naturally the patient, who expressed himself as being fairly free from the previous pain and feeling better, was decidedly opposed to operative interference, as was also his wife, but on earnest pressure ultimately consented, and at 11.30 the same night Dr. P. H. Parsons administered an anæsthetic and Mr. Forbes-Ross, assisted by Dr. Chalmers, opened the abdomen over the appendix by skin incision and separation of the muscular fibres. The abdomen contained a large quantity of white, thin, milk-like pus, which welled up through the wound from amongst the coils of the small intestine. There was little or no attempt by nature to seal off the diseased area. The cæcum was drawn out of the abdomen and the appendix sought for, but the only evidence of its existence was a greenish-grey patch with a hole of the size of a sixpence in what was apparently the cæcal wall itself. On careful examination, however, it was found that the appendix was infolded along its entire length by the cæcal wall, so that it appeared to be absent. The appendix required to be literally dug out of the wall of the cæcum. The only guide to its existence was the apparent perforation of the bowel. We believe that this tucking-away, parallel to its long axis, of the appendix in the bowel wall by adhesions, will account for the numerous instances in which appendicular abscesses (the result of chronic appendicular trouble or previous attacks) are opened, and no appendix can be discovered. The appendix is often described as "sloughed away" when really it is infolded in the wall of the bowel on its long axis. Having been shelled out from the bowel wall the appendix was ligatured close to the cæcum and invaginated by a purse-string suture and the meso-appendix stitched over the line of union. The abdomen was very gently dried by swabs inserted into the pelvis, and as little as possible beyond the removal of the appendix was attempted purposely—certainly no attempt at irrigation whatever. A large drainage-tube containing tape-gauze was inserted through the wound down into Douglas's pouch and the abdominal wound closed round the tube. The patient was returned to bed at 12 midnight and was made to sit bolt upright in bed. The next morning the pulse was 94 and the temperature 100·2°; the patient had slept fitfully and complained of thirst, but was doing well. On the second morning after the operation the case had almost ceased to present any point of interest other than the temperature, which was fluctuating between 99° and 100·6°. It was, however, confidently anticipated that on the ninth day after the operation the temperature would begin to approximate to the normal. The prediction was fulfilled. Experience seems to show that in these cases, where an abscess exists at the time of operation, and where the appendix is removed and the stump buried in the bowel wall, it requires about nine days for the ligatures and sutures to work through into the bowel and free themselves.

The removed appendix was about 7 to 8 inches long, as thick as the forefinger, and presented a complete stricture at its proximal end; hence the presence of liver dulness. In the distal portion beyond the stricture was a perfect specimen of a Boston baked bean, with intact cortical covering and two cotyledons and plumule. It was fæcally mummified. It was, of course, the cause of the previous attacks and the present gangrenous perforation of the appendix. The patient made an uninterrupted recovery and returned to his duties exactly one month from the date of the attack. At the present time (August, 1911) the wound is firm and sound and the man in robust health.

AN UNUSUAL CASE OF INTUSSUSCEPTION.

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THE patient, a girl just 2 years of age, was admitted to the Evelina Hospital for Sick Children on July 4th, 1910, under the care of Mr. H. S. Clogg. Her illness commenced suddenly a fortnight previous to admission. The initial symptoms were vomiting and the passage of blood and mucus per anum. Pain was said not to be a marked feature at the onset. The vomiting persisted periodically for a week, and blood was passed by the bowel for four or five days. Constipation was absolute throughout the illness, so that for a whole fortnight no fæcal matter was voided. During the fortnight she apparently had frequent attacks of intestinal colic, but for the greater part of the time she lay in bed in a listless condition, until towards the end when pain became more frequent and more severe, and she then became restless. She took fluid nourishment well after the vomiting had ceased. The abdomen was noticed to swell progressively, particularly towards the end of the fortnight. Several enemata were given, and these were either retained or returned in part without force. There was never any fæcal material in the washings, but occasionally some blood and mucus.

In view of these facts the condition of the child on admission was remarkably good. She was well nourished and of a good colour. Her eyes were clear though rather sunken, and the mouth was drawn down at the corners. She kept up almost constantly a cry, which was more of a whine than a pain-cry, which one might have expected in the circumstances. She assumed the knee-chest position in bed and strongly resented being disturbed. The tongue was dry and clean; pulse 120 and fairly good, and temperature 99·6° F. The abdomen was uniformly and considerably distended. Peristalsis was not observed. Rigidity was

absent, and the abdomen was free from tenderness. There was too much distension to allow of any swelling to be palpated. The rectal examination was negative.

There could be little doubt that the child was suffering from an intussusception and an operation was straightway performed. On opening the abdomen through a right paramedian incision it was impossible to prevent the prolapse of many coils of greatly distended bowel. An intussusception was easily delivered through the wound. It had travelled to the left iliac fossa. As is usual, the larger part was easily reduced, but the force employed in attempting the reduction of the last 6 inches or so was too great and the intussuscipiens gave way, the intussusceptum escaping through the rent. It was now seen that the intussusception commenced about 18 inches above the ileo-colic valve. About 12 inches of the small gut, including the intussusception, were resected, and an end-to-end anastomosis rapidly made. The child's condition was critical, and as the suturing had to be rapidly carried out in œdematous bowel the junction was almost certainly imperfect. For this reason, and also on account of the great intestinal distension, the bowel was drained on the proximal side of the junction by a Paul's tube. The abdominal wall was closed save in the lower part where the drainage was established.

There was marked shock from the operation, but the patient responded very well to subcutaneous saline infusion and ether hypodermically. Forty-eight hours after the operation there was a free flow from the fistula, and on the third day practically all the intestinal distension had disappeared. The child was now taking food well. On the fifth day the condition permitted of the second operation. During this subcutaneous saline infusion was continuously administered. The abdominal wound was freely suppurating, and it was impossible to exclude this source of infection from the peritoneal cavity. The wound was completely opened and the bowel bearing the tube drawn to the surface. On separating the adhesions around the previously anastomosed bowel the latter almost entirely gave away, the sutures tearing out on the slightest manipulation. The gut on the proximal side was still very œdematous, and some few inches of it, together with the site of the former anastomosis, were resected almost to the ileo-colic junction. The ends of the bowel were ligatured and invaginated with a purse-string suture. The ileum was laterally anastomosed to the cæcum. The ileum used for the anastomosis proved to be œdematous, contrary to expectation. The abdominal wall was sutured in a single layer on account of the child's condition and a drain inserted into the peritoneal cavity.

The shock following the operation was very great, and vigorous measures were necessary to combat it. The following day the condition was much improved and the bowels opened naturally. This improvement was maintained for four days. and then suddenly vomiting and marked collapse set in. The abdomen became distended, and the picture was one of acute intestinal obstruction in an already exhausted child. Food by the mouth was stopped, champagne freely administered, with saline infusions and ether and strychnine hypodermically. For the following two days the condition was critical and any operative interference was impossible. Two small stools were passed and the discharge from the wound had a distinctly fæcal odour. In a day or two it was obvious that a fæcal fistula had formed, and with this the symptoms of obstruction became relieved. It would appear most likely that the fistulous opening was at the site of the anastomosis, and presumably, from the after-history of the case, the obstruction was caused by adhesions at this site.

From this time onwards to the beginning of August the child rapidly and progressively lost weight and became extremely emaciated. The dressings were always soaked with intestinal contents. The fistula, however, showed some signs of closing, and an attempt was made to seal the opening over with guttapercha tissue and strapping. This was successful, and prevented any further escape of intestinal contents. The fistula was practically closed by the end of the first week in August. Following the closure of the fistula the child rapidly improved, and now at the beginning of September is well nourished and apparently in good health. The bowels are regular in action and of normal consistency. The wound is healed, and at present there is no suspicion of any hernia, which is remarkable considering the condition of the abdominal wound at one time.

There are some features in the case worthy of comment. One was struck principally with the extraordinary vitality of the child. She seemed to have considerable resisting powers to infection of the peritoneum, as this was freely exposed to infection at the second operation when the wound in the abdominal wall was purulent. The child had suffered from complete obstruction for a fortnight before coming into the surgeon's hands, she underwent two grave operations involving resection of some length of bowel within a period of five days, she had acute intestinal obstruction a few days after the second operation, and a fæcal fistula, through which all the intestinal contents escaped, for three weeks. The case serves to show that a child of this age can *exist* with a fæcal fistula for three weeks, and that any attempt at suturing the œdematous bowel is hopeless. Bearing these two facts in mind, should a similar case present itself, to quote Mr. Clogg, the correct treatment would be to resect the bowel and tie a tube in each end, and later to restore the continuity. In dealing with children the way is surprising in which they will sometimes successfully fight conditions which seem to be hopeless, and the above case which I have ventured to record is a striking example of such.

It may be incidentally remarked that the cause of the irreducibility of the intussusception was entirely the swelling of the intussusceptum, and not due to adhesions, which are always stated to be a potent cause. Mr. Clogg tells me that in all cases of irreducible intussusceptions which he has seen this has always been the case, and that he has never seen any adhesions between the intussuscipiens and the intussusceptum which would prevent reduction.

I am indebted to Mr. Clogg for permission to publish the notes of this case.

A DERMOID CYST OF THE TESTICLE.

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THE following case occurred at the Manchester Royal Infirmary, and my thanks are due to Mr. E. D. Telford for permission to publish it.

History.—A man, aged 35 years, a clerk by occupation, married, but no children, was admitted complaining of a swelling of the right testicle. He gave a history of some injury to the right testicle in childhood, and stated that the swelling had been present as long as he could remember. It had gradually increased in size. Some eight years ago he suffered from phthisis and has a cough at the present time. There was no history of venereal disease.

Condition on admission.—The scrotum showed the presence of a swelling on the right side suggestive of a uniformly enlarged testicle. Length, 3 inches; width, 2 inches. The skin of the scrotum was normal and freely moveable over the testicle, which was heavy, somewhat elastic, surface irregular, but not distinctly nodular. The vas and cord appeared normal. There was no translucency. A diagnosis of fibro-cystic disease of the testicle was made, and orchidectomy was performed by the inguinal route, the cord being divided at the internal abdominal ring. The patient made an excellent recovery.

Macroscopical appearance.—The appearance of the parts on removal was that of a very large testicle lying wholly within the tunica vaginalis. On opening the latter, no fluid escaped and no adhesions were found. The surface of the swelling was smooth, but showed a shallow groove running obliquely round the upper pole from above downwards and backwards and mapping off a portion 1 inch long by ½ inch broad. The epididymis was of normal size and therefore out of proportion to the size of the tumour. No hydatids of Morgagni were seen, but a well-marked vas aberrans of Haller was found on dissection of the epididymis. A vertical incision was made through the tumour along its posterior margin. The cut surface showed a complete tunica albuginea somewhat thickened, enclosing two distinct portions. An upper, solid, crescentic part marked off by the shallow groove mentioned from a lower, larger portion—the dermoid cyst. At first sight the upper solid portion appeared to be normal testicle, but this was disproved at a later stage. It was somewhat yellowish in colour and on critical examination showed numerous small cysts filled with a clear, colourless, colloid or mucoid material. The dermoid cyst was more or

less loculated and was separated from the upper solid portion by a fibrous layer which formed part of the cyst wall. The contents of the cyst consisted of the usual whitish sebaceous material with long, black, curly hairs and irregular flakes of bony consistence.

Microscopical examination.—Sections were cut and examined of the following:—(1) Vas deferens; (2) epididymis; (3) solid crescentic body; (4) wall of the dermoid cyst; and (5) contents of the dermoid cyst.

1. The vas deferens appeared normal. Its lumen was patent, but the walls were perhaps rather thicker than usual.

2. The epididymis. This section was planned to go through the epididymis at its junction with the two parts of the tumour. It showed a normal appearance of the canal of the epididymis with a condition as described below of the tumour.

3. The solid crescentic body. This section at once showed the complete absence of testicular structure. There was a thick fibrous capsule—the tunica albuginea—surrounding a loose fibrous stroma in which were numerous cysts, irregular in size and shape, lined by one or more layers of cells, and filled with a substance staining feebly with hæmatoxylin. Not a trace of a seminiferous tubule was seen.

4. The wall of the dermoid cyst. This showed a laminated fibrous appearance, lined internally by true skin in places, by stratified epithelial cells in others.

5. Contents of the cyst. (*a*) A piece of the putty-like sebaceous material was examined. It showed the presence of true skin, consisting of several layers of squamous cells lying on a rete Malpighii. The papillæ were very rudimentary. Numerous large sebaceous glands and many sweat glands were seen, but no hair follicles. (*b*) An attempt was made to show the structure of the hard, bone-like content. The section showed the appearance described of the cyst wall, with, in addition, some smooth muscle fibres and a small area of dense tissue, but no bone and no cartilage.

Remarks.—Testicular teratomata are of very uncommon occurrence, and very few cases are on record. They are always unilateral.

In cases reported by Verneuil,[1] Bland-Sutton,[2] D'Arcy Power,[3] Jackson Clarke,[4] and recently by Barrington,[5] where a side on which the lesion has occurred has been mentioned, that side has always been the right. A left-sided testicular dermoid has yet to be recorded, but a case reported by Bilton Pollard[6] in which a dermoid cyst was situated outside the tunica vaginalis and adherent to the left testicle, is hardly to be reckoned as a true testicular dermoid. Another feature which appears to be commonly associated with testicular dermoids is the presence of small cysts filled with a material variously described as gelatinous, mucoid, or colloid. What the exact significance of these cysts is one can hardly say. They may represent a degenerative condition of the testicular body, partial in some cases, complete in others (as the above), where no trace of testicular substance can be found.

Manchester.

[1] Verneuil: Archives Générales de Médecine, 1855, vol. v., p. 641 vol. vi., pp. 21, 191, 299.
[2] Bland-Sutton: Tumours, fourth edition, 1907, p. 533.
[3] D'Arcy Power: Transactions of the Pathological Society, vol. xxxviii, p. 224.
[4] Jackson Clarke: Ibid., vol. xlvii., p. 148.
[5] Barrington: THE LANCET, August 13th, 1910, p. 460.
[6] Bilton Pollard: Transactions of the Pathological Society, vol. xxxvii., p. 342.

THE ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY.—A series of post-graduate lectures will be given during the months of October and November, 1911, on Tuesdays, at 6 P.M. The lectures announced are as follows:—Oct. 17th, Heredity in Teeth and Jaws (Mr. J. G. Turner); Oct. 24th, Some Hospital Cases (Mr. W. H. Dolamore); Oct. 31st, The Relative Effect of Metal and Vulcanite on the Tissues of the Mouth (Mr. G. H. Berwick); Nov. 7th, The Relationship of Periodontal Disease to General Health (Mr. J. F. Colyer); and Nov. 14th, A Review of the History of Dental Caries, and the Present Position of the Question (Mr. J. H. Mummery). Further information will be supplied by the secretary of the hospital. Past and present students of the hospital and internal students of the University of London will be admitted to the lectures free.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON TWO SOMEWHAT UNUSUAL ABDOMINAL CONDITIONS IN CHILDREN.

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THESE two cases being, I believe, somewhat uncommon I thought a short note of them might be interesting. Both cases were under the care of Mr. C. E. W. Bell, surgeon to the Royal Devon and Exeter Hospital, to whom I am indebted for permission to publish them.

CASE 1. *Acute intussusception caused by a Meckel's diverticulum.*—The patient, a girl, aged 6 years, was taken ill in the afternoon of Sept. 26th, 1910, with pain in the stomach; no particular notice was taken of it. She vomited that night and looked pale. On the 27th she was in great pain and the vomiting continued. There was also marked tenesmus but no result; on one occasion only it is said she passed blood and mucus. A glycerine injection gave no result. She was seen by a medical man in the evening, and later at night she was removed to hospital.

The child, who came from an orphan home, was not very robust in appearance. On admission the temperature was normal and pulse 120. She complained of pain to the right of the umbilicus. The abdomen was generally soft and resonant, slight rigidity could be made out over the right rectus, but no definite lump could be felt. Rectal examination showed that the rectum was empty and ballooned; at the tip of one's finger a mass could be felt on the right side like a thickened appendix. Fotus were applied. There was no vomiting during the rest of the night, but she was very restless and the tenesmus continued. Early in the morning—i.e., of the 28th—she was in much pain and the abdomen was more rigid. Also now a definite sausage-shaped tumour could be felt, extending from the right of the umbilicus to the anterior superior spine and curling upwards towards the hepatic flexure.

An operation was performed and lasted one and a half hours. The mass was soon delivered through the wound, and at first looked like a volvulus. A mass could be felt in the cæcum, but the appearance was not that of an ordinary intussusception. After careful and considerable manipulation, owing partly to the tightness of the constriction and the poor condition of the bowel in some places, the intussusception was reduced. It was then found that it had been caused by an invagination of a Meckel's diverticulum, which had carried both limbs of the bowel through the ileo-cæcal valve, thus forming a U-shaped intussusceptum. The diverticulum was situated about two feet from the ileo-cæcal valve; it was two inches long, and in its congested state as thick as a finger. No resection was performed and the wound was closed rapidly. The patient was very collapsed, and in spite of saline infusion did not really rally, dying at 9.30 the same night.

CASE 2. *Strangulated hernia in a child aged 5 months.*—The patient, a male, was admitted on August 25th, 1910, suffering from a swelling in the left inguinal region. The child was otherwise quite normal and healthy. He had been breast-fed. No rupture had been noticed at birth, but when between two and three months old the child cried a good deal, and on one occasion could not pass urine. The medical attendant found a hernia down and replaced it. It had been down for five hours. On August 24th, at about 5 P.M., the mother again noticed a swelling in the left inguinal region and the child seemed in great pain. He also had retention of urine. Taxis was tried unsuccessfully by the local medical man. Fotus were applied but did not give relief. Fæcal vomiting began at 1 P.M. on the 25th. The bowels had not been opened since the evening of the 22nd.

On admission at 2 P.M. the child's temperature was 101·4° F. and the pulse 128. A hard, tender swelling was present in the left inguinal region. An operation was performed at 2.30 P.M. A very thin sac was found, in which was a coil of small intestine in a very congested condition.

The opening at the internal ring was very small. Herniotomy was performed and the pillars were sewn up. The child had a normal action the same evening. There was no vomiting and he made a good recovery, being discharged on Sept. 9th.

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EVAGINATION OF MECKEL'S DIVERTICULUM.

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MECKEL'S diverticulum, the remains of the omphalomesenteric or vitelline duct which connects the yolk sac to the convexity of the U-shaped primitive intestine, should have disappeared by the sixth month of fœtal life. It springs from the ileum about 100 cm. in adults and 30 cm. in newborn children above the ileo-cæcal junction, but it may be found as high as the duodenum or jejunum, or even in the cæcum or colon, according to which limb of the primitive intestine undergoes development. Kelly describes four types of Meckel's diverticulum. In the first the canal is short; there is a broad fissure at the umbilicus through which fæcal matter is discharged. The distal part of the ileum is insufficiently developed and the anus is constricted or occluded. In the second type the umbilical opening is smaller, the canal is longer, and there is no constriction or occlusion of the anus, and fæces pass in the normal way. This type may be produced at birth if the diverticulum still extends into the cord and becomes tied off with it. The case described below was originally an example of this variety. In the third type the distal portion of the vitelline duct has become obliterated, forming a fibrous cord, the filum terminale or terminal ligament. The fourth type is the variety of Meckel's diverticulum usually met with.

Meckel's diverticulum is the cause of intestinal obstruction in 5 or 6 per cent. of such cases in the ileo-cæcal region, and numerous are the ways in which it may bring about this condition, varying with the stage at which the obliterative process has been arrested. The obstruction may depend on the vagaries of attachment of the terminal ligament or the formation—knot or otherwise—which it may assume when unattached. The part it plays in intussusception is well known, while as a result of inflammation of the diverticulum paralytic ileus may be caused, or stenosis of the intestine may occur from adhesions, or from the pressure of an abscess. Ileus from evagination, partial or complete, of Meckel's diverticulum must be a very rare occurrence.

The patient was a baby, 13 months old, and was admitted to hospital on Jan. 7th, 1910. After separation of the cord an opening was noticed at the umbilicus from which, if the child had diarrhœa, fæcal matter was passed, but from which there was a constant slight discharge of a sticky, watery fluid. There was always a pouting of the mucous membrane when the child cried or otherwise strained, the degree of prolapse varying with the straining effort. Some hours previous to admission the child was straining and the diverticulum was completely everted. The everted diverticulum presented rather a puzzling appearance. At first sight it looked like a knuckle of deeply congested distended intestine about two inches long lying on the abdominal wall. On closer inspection it was noted that an aperture existed at the distal end and that the outer covering was of mucous membrane. The child could retain nothing. The abdomen was large, but not much distended, and I think the possibility exists that gas might find an outlet through the diverticulum. Reduction at this stage was out of the question and operation afforded the only hope of recovery. Following therefore somewhat the umbilical method of Mayo, a circular incision through the skin round the diverticulum was made and the abdomen opened. The everted diverticulum, lined internally with serous membrane, with its contained loop of afferent and efferent intestine was lifted out, clamps were applied, the intestine was divided, and end-to-end anastomosis performed. The child's condition rapidly improved, and it was fed from the bottle from time to time and seemed to be making favourable progress, but died suddenly ten hours afterwards in a convulsion.

With regard to the treatment of this rare condition it appears to me that, if the case is seen early and the child is in poor condition, reduction might succeed with or without an anæsthetic, aided, perhaps, by incision of the umbilical opening, recurrence being prevented by an appropriate dressing supported by strapping or an umbilical truss. Operation might then be resorted to under more favourable circumstances. Failing reduction, or as an alternative method, the diverticulum might be excised and the possibility considered of suturing the aperture in the intestine. As the structure of the diverticulum is similar to that of the intestine, part of the former might be used to close the opening or to strengthen the line of suture. Another method that the surgeon might be compelled to adopt would be to remove the diverticulum and suture temporarily the aperture in the intestine to the umbilical opening. If the child were in good condition the operation performed in the above case would seem to be eminently satisfactory.

Wakefield.

Reviews and Notices of Books.

A Clinical Atlas of Sectional and Topographical Anatomy. By RICHARD J. A. BERRY, M.D. Edin., M.D. Melb., F.R.C.S. Edin., F.R.S. Edin., Professor of Anatomy in the University of Melbourne. With 60 plates in colours. London and Edinburgh: William Green and Sons. 1911. Price 42*s.* net.

BOTH author and publisher are to be congratulated on the production of this volume, for the Clinical Atlas is a very attractively got up publication upon which a great deal of care has been lavished by all concerned in its making.

It is to the wealth of material available at the University of Melbourne that Professor Berry owes his opportunities for carrying out a large number of carefully planned sections of formalin-hardened and frozen bodies. He has been fortunate in his opportunities and wise in the use he has made of them. Great efforts have been made to ensure the accuracy of the reproductions of the actual sections, and to this end photography has been employed. We may miss, perhaps, the delicate detail of the beautiful plates of Braune and of Symington, but at least we are compensated by the knowledge that no craftsman's personal factor has been introduced, and that what we study in the plates is the actual condition in the body under observation. The methods employed are thoroughly up-to-date, and a band-saw driven by electricity has replaced the more laborious contrivances used by former workers in the field of sectional anatomy. In these details of technique Professor Berry's work marks a great advance upon that of his forerunners; but the innovation which most distinguishes this atlas is the cutting of the sections in planes recognised by the clinician, rather than in some arbitrary series of lines which have no meaning in the ordinary examination of the living body. The planes advocated by Dr. Christopher Addison have been chosen by the author, in order that the clinician may study the sectional anatomy of the body along lines whose surface markings are familiar to him. Sections taken between these well-recognised planes are indicated by their distance in centimetres from the planes. To assist the student in locating in the actual body the structures which he studies in the sections, the cadaver has been photographed while still intact with the plane of each individual section marked clearly upon it. It is therefore only necessary to turn to these plates to see exactly where the slice under examination came from, and so to build up a reconstruction of the organs as they lie beneath the surface of the body. Two such reconstructions are given by the author, and others could readily be made from the plates.

For the study of cranial topography the head has been cut in the transverse plane into ten slices at measured intervals

below the vertex. The fact that the head of an Australian native was used for section adds an interest—but perhaps hardly a corresponding measure of clinical utility—to these plates. The trunk has been cut both in transverse and sagittal planes, and a series of dissections of regions of special clinical interest is also added. A very complete atlas is therefore produced, and by a uniform reduction of its plates it has been brought within the limits of a volume which is easily handled. Braune's work possessed the merit that all its plates were of life-size, and that actual measurements could be made from them, and his atlas was therefore of an uncomfortably large size. Professor Berry has sacrificed the advantages of life-sized reproduction, but he has made his book an easily manageable one. A bibliography of sectional anatomy is given, and in it we rather miss the mention of the beautiful work on the sectional anatomy of the child done by Professor Symington. Since the subjects used by Professor Berry are all adult—and, indeed, mostly rather aged—the two works may be considered as the complements of each other.

The work is certain to appeal to clinicians, and there is no doubt that the plates can be relied on as actual representations of the position of the organs in the sections of the subjects selected for examination.

Les Nouvelles Mycoses: Exascoses (ex-Blastomycoses), Oïdiomycoses, Sporotrichoses, Botrytimycose, Oosporoses, Hémisporose. Par MM. DE BEURMANN, Médecin de l'Hôpital Saint-Louis à Paris, et GOUGEROT, Professeur Agrégé à la Faculté de Médecine de Paris. Paris: Masson et Cie. Pp. 165. Price, paper, 2.50 francs; boards, 3 francs.

THIS little work is one of the volumes of the Encyclopédie Scientifique des Aide-Mémoire, and its inclusion in this series indicates that the subject is not considered to be of merely academic interest. These mycotic infections can be regarded no longer as pathological curiosities, but have assumed an important place in medicine; this point is emphasised by Professor Landouzy in the introduction. That comparatively little interest has been taken in the subject in this country is probably due to the fact that, though very widely spread, they are either rare or have escaped observation in England, and no reports of English cases of blastomycotic or sporotrichic infection are mentioned in this book. Their practical importance lies in the fact that all these fungi can produce granulomata, and the diseases caused by them are liable to be mistaken for tuberculous or syphilitic infections, with unfortunate results in treatment and prognosis. As the authors point out, the distinctions formerly drawn between bacterial and mycotic infections do not hold good. These fungi, like the bacteria, act by means of their toxins, and produce humoral reactions leading to the appearance of agglutinins, precipitins, opsonins, and bodies capable of fixing complement. Immunity has been produced and patients give skin and other reactions when inoculated with killed and disintegrated cultures.

The title shows the range of infections dealt with. As is natural, the longest and most important section of the book is occupied by a consideration of sporotrichosis. The authors have especially studied these infections, both clinically and experimentally, and to them we owe the discovery of the sporothrix Beurmanni and the most useful methods of diagnosis. These latter consist in culture in the cold on Sabouraud's medium, employing Gougerot's artifice (*coulée de pus sur le verre sec*) of inoculating the tubes by allowing the pus to flow over the dry glass instead of over the surface of the medium, and the use of sporo-agglutination according to the method of Widal and Abrami. Questions of nomenclature and classification are also considered, but not at the expense of more important practical matters. There are a few illustrations.

The book is a masterly little treatise which should prove of service to the practitioner.

Thérapeutique Usuelle du Praticien. By ALBERT ROBIN, Professor of Clinical Therapeutics at the Faculty of Medicine, Paris. Second Series. Paris: Vigot Frères. 1911. Pp. 551. Price 8 francs.

IN our review of the first volume of this series (THE LANCET, March 18th, 1911, p. 746) we explained the plan which Dr. Robin had adopted in order to render the work interesting and practical—namely, that he selects certain morbid conditions that yield more or less readily to systematic treatment, and examines at length the general considerations which should determine the therapeutic measures to be used, and then he explains in detail how these measures should be applied. In the present volume diseases of varied natures are discussed. The first five sections are devoted to a consideration of the treatment of typhoid fever, and numerous hints are given as to the regulation of the diet and the management of complications.

The therapeutics of acute articular rheumatism, of polyarthritis deformans, and of acute and subacute gout are also fully described. Throughout the book Dr. Robin adduces numerous typical cases on which to found his remarks; this lends it a practical aspect, which adds to the interest and usefulness of the manual. Amongst other diseases the treatment of which is detailed, are diabetes, pneumonia, acute œdema of the lungs, bronchitis, and paralysis agitans.

Dr. Robin writes in a pleasant manner and one easy to follow. The directions as to the use of drugs or of other therapeutic methods are given fully and plainly, so that as a work of reference this series will prove of value in actual practice. The only drawback is that the diseases are not arranged in systems, so that unless a general index be subsequently published it will be difficult to ascertain in which volume to look for the required information.

What to Eat and Why. By G. CARROLL SMITH, M.D. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 310. Price 12*s.* net.

THE author states in his preface that he has not attempted to cover the whole subject of dietetics, but has aimed to describe for the medical student, and particularly for the busy practitioner, the fundamental elements of food, and the principles underlying its use, both in health and disease; so that the country practitioner may not be under the necessity of sending his patient to be dieted by a city specialist. The chief questions propounded for settlement are: (1) How much protein should be given; and (2) what should be the proportion of fats and carbohydrates. After an introductory chapter on the uses of food, the conditions of obesity and emaciation are discussed; the chief pathological conditions are then considered in order, and appropriate dietaries recommended. Referring to Chittenden's researches, the author advises his readers to stick to the Voit standard of 100 to 120 grammes protein daily, "until stronger evidence of a better is produced"; for sufficient time has not yet elapsed for clinicians to prove or disprove Chittenden's results. Dr. Smith has not found that protein, taken in the usual moderate amounts, does any harm to the system, so long as digestion and elimination are satisfactory; but he believes that intestinal disturbances do often result from over-taxing the digestion with carbohydrates.

We are surprised to find the author referring to "the quite prevalent habit of wine-drinking among young

ladies"; he condemns the practice, which, however, is not common in this country and is growing less common, while, surely, it is very rare in the United States. Again, with regard to the active business man subject to stress and strain, which cannot always be treated by rest and sleep, Dr. Smith says (p. 35) that the stimulus of food, coffee, and tea is insufficient to meet the exhaustion that often results: "Alcohol seems to opportunely and satisfactorily afford the necessary prop," and to be less harmful than giving up the struggle, which often means great financial loss and perhaps ruin. We fear that this opinion may be taken to imply more than the author really means, and we regret that it should be so unguardedly expressed. On the following page it is stated that for persons in health under 30 alcohol is unnecessary and to be avoided; its occasional use in middle life is advisable, under medical direction. This is reasonable enough, but is hardly consistent with the advice just quoted.

There is considerable originality of thought and of expression in this work, which is obviously the outcome of large experience. Everyone may not agree with the author, but his utterances are suggestive and are attractively set forth. It is unfortunate that there are a large number of misprints. "Discrasia" may be designedly phonetic, but "kal" on p. 212, presumably an abbreviation for "calories," can hardly be accepted. On p. 26, line 8, "percentage" of protein, &c., is written where "weight in grammes" is what is intended to be stated.

Diagnostik der Nervenkrankheiten. Von Dr. L. E. BREGMAN, Oberarzt am jüdischen Krankenhaus in Warschau. With 193 illustrations. Berlin: S. Karger. 1911. Pp. 535. Price, paper, M.12; bound, M.13.60.

THE symptomatology of nervous disease has become so rich, and methods of examination so many and complex, that the general practitioner is unable to keep himself abreast of the advances in neurology in many instances. A volume such as the one under review, which has been compiled from the point of view of the practising physician, cannot fail to be of considerable utility. He comes into contact with nervous cases the diagnosis of which is often by no means easy or straightforward; but with this book to guide him he will be able to appreciate the meaning of symptoms and to reach an adequate diagnosis on which to base his treatment. Dr. Bregman has written in great detail from the standpoint of symptomatology; motor and sensory changes, paralyses and involuntary movements, disturbances of the reflexes and of the special senses, aphasia, apraxia, vaso-motor, and other systemic alterations, are all handled with conspicuous ability and lucidity. Most of the illustrations are well reproduced and there is an excellent index. The book can be cordially recommended to the student and practitioner, for it combines conciseness of description with a wide range over the vast field of neurological symptoms and signs.

Die Erkrankungen des Herzbeutels und ihre Behandlung. (*Diseases of the Pericardium and their Treatment.*) Von Dr. FRANZ SINNHUBER, Königsberg i. Pr. With 18 figures in the text. Berlin: August Hirschwald. 1911. Pp. 114. Price 3 marks.

DISEASES of the pericardium are, as a rule, dismissed with somewhat scant reference except in the larger text-books on medicine. They are of considerable importance clinically, and their successful diagnosis and treatment require careful discrimination and sound judgment.

Dr. Sinnhuber supplies in the present monograph a useful study of the various affections of the pericardium. He lays special stress upon considerations of treatment, and he gives useful and detailed directions in regard to paracentesis in large effusions. The operations of pericardiotomy and of cardiolysis are also carefully considered, and an analysis is given of the recorded instances of cardiolysis carried out in cases of pericardial adhesion. The physical signs of adhesive mediastino-pericarditis are considered in detail, and an extra-diastolic sound described by Brauer is mentioned as occurring in this condition. A useful bibliography is given at the end of the monograph.

The Modern Treatment of Alcoholism and Drug Narcotism. By C. A. MCBRIDE, M.D. Tor., L.R.C.P. & S. Edin. London: Rebman, Limited. 1910. Pp. 376. Price 6s. net.

Dr. McBride, in the first chapter of his work on "The Modern Treatment of Alcoholism," takes occasion to inform his readers that "there is still a deplorable number of physicians in this country who stoutly refuse to believe inebriety to be a disease and as firmly refuse to credit its curability." This passage sufficiently indicates the author's standpoint; he regards inebriety as a specific disease for which it is reasonable and expedient to seek out a specific remedy. The adoption of such a view is attended by a somewhat peculiar difficulty; the author has not only to justify the claims of the particular line of treatment which he advocates, but he has also to demonstrate to a more or less sceptical public the existence of the disease for which this treatment is designed. And this is by no means an easy task, nor is it probable that the advance in our scientific knowledge of the subject will diminish its difficulties; for the more we learn about the inebriety of which Dr. McBride treats, the more we are likely to recognise that we are dealing with a particular manifestation of a general instability of brain, and not with a definite morbid entity. Dr. McBride has not perhaps sufficiently recognised the need of this preliminary proof of the theory of inebriety which he holds; he has been content to affirm the theory with conviction and to point to the practical results which he has obtained as an *a posteriori* evidence of its validity.

Proceeding on the assumption that inebriety is to be cured by some drug capable of counteracting the organic craving which he postulates as the origin of the disease, Dr. McBride claims to have found this specific in a method of treatment of which the main element is the administration by hypodermic injection of gradually increasing doses of strychnine and atropine. It is claimed for this method that "it cures inebriety" within six weeks, and this without interfering with the patient's liberty; that "it absolutely destroys the craving for alcohol" so that "it never returns of its own accord"; it even produces a revulsion against alcohol in any form. It will be seen that Dr. McBride rates his method of treatment very highly, and it is therefore to be regretted that he has not given more numerous and more detailed records of his cases, which is the more imperative inasmuch as the same method has failed to give such favourable results when it has been tried by other observers. This conflict of testimony may lead to some doubt as to whether Dr. McBride's results may not have been due chiefly to the suggestive influence of the enthusiastic physician. And this doubt will certainly be strengthened when the reader learns that the virtues of the treatment operate only with patients who wish to be cured. The class of inebriates whom the author describes as "voluntary drinkers," and who, he says, "get drunk from mere vice," are not influenced by the strychnine and atropine treatment, though it is not explained why these drugs should not be capable of producing in an individual of this sort the same organic aversion to alcohol which they are alleged to produce in the victims of the specific drink

craving. On the whole, therefore, while the author's confidence in his method is very admirable in a critical and incredulous age, it is doubtful whether he is likely to communicate his enthusiasm to his readers.

LIBRARY TABLE.

A Handbook of the Tsetse Flies (Genus Glossina). By E. E. AUSTEN. With 10 coloured plates. Printed by order of the Trustees of the British Museum, London. 1911. Pp. 110. Price 5*s.* 6*d.*—This timely and useful handbook is an extension of an earlier handbook written by the same author and also published by the Trustees of the British Museum. Mr. Austen, of the department of zoology at the British Museum, is a well-known authority upon insects, and thus brings to the consideration of these flies the prestige of an expert. His main object has been to define accurately the 14 species into which the genus as at present known is divisible; but the usefulness of the manual is greatly increased by notes upon the mode of life of the biting flies and by precise records of habitat. As is well known, the pressing interest of this small genus of diptera is due to the deadly tsetse fly, deadly not because of its bite but by reason of the carriage of disease to man along with that bite. In this country we have a member of a genus allied to glossina—viz, stomoxys—whose bite is well enough known and which is often regarded as an ordinary housefly that has taken to a more predatory life. It has, of course, nothing whatever to do with the common housefly, but is a relative of the purely Arabo-African glossina, though it is not a disease-carrier. The two genera, however, though much alike, can be distinguished, as the author indicates, by a sketch showing the position of the wings during rest. It is very important to have readily accessible a trustworthy means of identifying the various species of tsetse flies, for it is by no means all of them which are concerned in the transmission of sleeping sickness and other trypanosomiases. The excellent coloured plates, combined, of course, with the written details of structure given under the heads of the various species, should render identification easy.

Maladies des Nerfs. By BERNARD CUNEO, Professor agrégé in the Faculty of Medicine; Surgeon to the Hospitals of Paris. Volume X. of the *Nouveau Traité de Chirurgie.* Published under the direction of A. LE DENTU and PIERRE DELBET. With 50 figures. Paris: Baillière et Fils. 1911. Pp. 174. Price, paper, 4 francs; bound, 5 50 francs.—This fasciculus of the "Nouveau Traité de Chirurgie" is concerned with the diseases of nerves—traumatic, inflammatory, neoplastic, and so on. The physiology of nerve degeneration and regeneration is described in detail, and the treatment of nerve wounds is well handled. This is true, not merely as regards the surgical technique of nerve anastomosis, but also for the various trophic, vaso-motor, and secretory complications of nerve lesions. Traumatic neuritis is the subject of one of the best chapters in the work. Plexiform neuroma and Recklinghausen's disease and other neoplastic conditions are discussed. Many of the illustrations have been especially drawn for the book, and have the merit, therefore, of freshness and up-to-dateness. There are useful references to the literature. The book maintains the high level of scholarship that we associate with the Parisian school of medicine.

On the Production of Pure Milk: An Account of the Methods Employed at the Infants' Hospital Farm. By RALPH VINCENT, M.D. Durh., M.R.C.P. Lond., Senior Physician and Director of the Research Laboratory, the Infants Hospital, London. London: P. S. King and Son. 1911. Pp. 22. Price 6*d.* net.—This lecture contains a description of the farm at which all the milk used at the Infants' Hospital is produced. It gives also a series of pictures of the buildings and dairy apparatus, refrigerator, power separator, and air-wall churn. The herd consists exclusively of Dairy Shorthorns, because they are said to be steady milk-yielders and their milk of the best kind for infant feeding; also they make good meat when no longer of use for milk production; and there is no difficulty in replenishing the herd, as there would be with fancy cattle. Jersey, Guernsey, and Alderney cows are excluded as unsuitable for infant feeding, their milk containing large fat globules. To the objection that such a plant sounds very like costly milk Dr. Vincent replies that the milk costs the hospital loss than 3*d.* a quart. The lecture forms interesting reading.

Camping for Boys. By J. H. WHITEHOUSE, M.P., Honorary Secretary to the National League of Workers with Boys, and Warden of the Secondary Schoolboys' Camp. London: P. S. King and Son. 1911. Pp. 72. Price 1*s.* net.—This little book tells the story of the camp founded a few years ago to organise the holidays of boys attending the grammar schools and secondary schools of the country. The camp was intended to exercise a vitalising influence on the minds and characters of the campers, to correct some of the limitations of life, to develop and draw out the best and bravest in them, and to bring a fuller spirit of chivalry to the lads within it. Chapter I. tells the story of the Secondary Schoolboys' Camp. Chapter II. describes its educational work in history and geology, architecture, collecting, kite-making, nature-study, first-aid and life-saving, literature, music, and civic teaching. Chapter III. deals with camp excursions, and Chapter IV. with camp games and sports. Chapter V. describes a typical day in camp. Chapter VI. deals with camp craft, and describes the pitching and care of camps. Alfred Noyes's "Song of England" is reprinted, and there is a good list of books bearing on the various subjects of interest in camp life. The book is freely illustrated. All concerned with camp and outdoor life for boys will find it of interest.

Low's Handbook to the Charities of London, 1911. London: Charles H. Sell. Pp. 248. Price 1*s.*—This well-known book is now in its seventy-sixth year of publication. More than 12,000 charitable institutions are arranged in alphabetical order, and brief details are given of the objects of the institutions, their date of formation, income and expenditure, the names of the treasurers and the secretaries, and so forth. There is also a classified table of contents. It is pointed out in the preface that the year 1910 was an unfortunate one for charities, the majority of which have had to record a decrease in income, while it is, of course, obvious that those conditions which restrict the incomes of charities cause an increase in the claims made upon them.

Maternity Primer. By A. H. F. BARBOUR, M.D. Edin., LL.D., Physician to the Edinburgh Royal Maternity Hospital. Edinburgh: William Green and Son. 1911. Pp. 165. Price 1*s.* net.—This little book consists of notes that were originally printed for the use of nurses commencing their maternity training, on which account the language used is, as far as possible, familiar rather than technical, and the information intended to be conveyed, instead of being baldly stated, is developed by a process of constructive reasoning or explanation. The book can be commended to the novitiate nurse, and even to the medical student beginning his midwifery; for to him it will serve, if properly used, as the bird's eye view presented by a low power, so to speak, before he begins to examine the intimate detail through the higher power of scientific text-books. It does not stop short with

the confinement, but has some useful remarks on the hygiene of the baby.

Ueber abnorme Lage der Männlichen Keimdrüsen mit besonderer Berücksichtigung des Kryptorchismus. (On Abnormal Positions of the Testis, with Especial Reference to Cryptorchism) Von Dr. med. H. VON FOTH. Leipzig: Otto Wigand. 1910. Pp. 89. Price M.2 40.—In this work we find a general account of the misplacements of the testis and a classification of its abnormal sites. The treatment to be employed is discussed, and the author gives the details of five cases in which he had operated for misplaced testes, in several of which a hernia was also present. A bibliography with 252 references is a valuable addition.

Cat's Cradles from Many Lands. By KATHLEEN HADDON. London: Longmans, Green, and Co. 1911. Pp. 95. Price 2*s.* 6*d.* net.—Until comparatively recent years very little was known about the pastime which, in this country, has received the name of cat's cradles, although the amusement to be derived from making patterns and shapes in string is well known to people in almost all parts of the globe. There now exists a very good bibliography of the subject, but there is still much to learn about these string figures of interest to anthropologists and ethnologists. In "Cat's Cradles from Many Lands" Miss Haddon describes some 50 figures, and has adopted the system of nomenclature invented by Dr. W. H. R. Rivers and her father, Dr. A. C. Haddon. By the aid of this system and the clear illustrations there should be little if any difficulty in reproducing the figures shown, though it sometimes requires a considerable stretch of the imagination to see in them the forms indicated by the names. It has been suggested that the making of these figures might form a useful pastime for invalids, while it is possible that the amusement might prove of service in breaking the tedium of a long railway journey. In the education of the memory and of the tactile sense cat's cradles might also find a place in the kindergarten, and the clever teacher could improve the occasion by giving useful knowledge to the pupils concerning the peoples of other lands.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLV. Third series, Vol. VI., Part. IV. July, 1911. London: Charles Griffin and Co. Annual subscription 21*s.* post free.—The present number is mostly devoted to subjects of embryological interest, for no less than eight of the 12 papers comprised in the issue are concerned with developmental problems. For the most part the papers deal with reconstruction models of embryos, human and otherwise, and five of them are concerned with the study of the head region. Dr. J. W. Jenkinson contributes a paper on the Development of the Ear-bones in the Mouse, and briefly his findings are that the stapes is derived from the dorsal median portion of the hyoid arch, while the incus and malleus are formed in the upper part of the blastema of the mandibular arch. Dr Jenkinson has used very early stages to determine the precise development of the ossicles, and in this way it is possible he has succeeded in setting at rest this most debated point of vertebrate morphology. His paper possesses the advantage that, in addition to being illustrated by excellent figures of the wax model as a whole, it contains clear diagrammatic drawings of the more important members of the series of sections from which it was reconstructed. Again, after a clear statement of the detailed investigation of the sections and the models, the author provides a summary of his conclusions and a comparison of them with those of other workers. It might seem almost unnecessary to allude to these as special virtues, but a perusal of this present number of the *Journal of Anatomy and Physiology* reveals the fact that these very essential details of a paper are in common—and growing—danger of complete neglect. Two papers, contributed by members of Birmingham University, represent contributions towards the developmental history of the ferret. The Birmingham school has devoted a great deal of research towards reconstructing the early stages of the ferret embryo, and as the papers published here are preliminary to further investigations, we may reasonably hope to have the whole of the developmental history of one animal thoroughly worked out. Dr. Thomas Yeates contributes a paper entitled "Studies in the Embryology of the Ferret." The paper, which is an excellently illustrated one, describes the details of a reconstruction of an early embryo cut *in utero*, and many important points concerning the early connexion of the embryo to the uterus are discussed. The mass of detail does not admit of easy summary—indeed, the author himself has not attempted it. Miss Marion Radford contributes the second paper, and she deals with the cranial region of a somewhat older embryo. The features of the brain and pharynx as they are displayed in two models are detailed and discussed. Many points of interest arise in the description, but again they are not summarised. Mr. J. E. S. Frazer deals with the human embryo, and describes the development of the septum of the nose and the maxillary structures in a paper entitled "A Preliminary Communication on the Formation of the Nasal Cavities." Mr. Frazer claims a larger share for the maxillary processes in the formation of the early mouth cavity than is generally admitted, for he has determined that they form the side walls and roof of the cavity as far forward as the olfactory pit, a finding well in accord with the nerve distribution. Many other revisions of the present teaching are introduced into this preliminary contribution. Professor Alexander Meek contributes an important paper on the Morphogenesis of the Head of the Crocodile. From the reconstruction of the heads of crocodile embryos Professor Meek has made a very complete study of the development of the cranial region. The paper is a long one, but is ably summarised, and many of the conclusions arrived at point more clearly to the origin of certain mammalian structures, such as the maxillary and sphenoidal sinuses and the ethmoturbinal region. The results are of obvious importance, and would appear to furnish a new link in the chain of evidence available in the study of mammalian descent. Professor Edward Fawcett continues his studies of the ossification of the human cranium by contributing a paper on the Development of the Human Maxilla, Vomer, and Paraseptal Cartilages. On the whole, the work of Professor Fawcett goes to simplify the teaching of the development of these complicated bones. In pronouncing the maxilla as a membrane bone derived from a single centre, the author confirms the statement made over 50 years ago by Professor Humphry, and thus gives fresh evidence of the remarkably accurate insight of this painstaking anatomist. Concerning the premaxilla but little information is given, the subject being reserved for fuller treatment in a future paper. For the vomer Professor Fawcett finds two centres uniformly present in man—a condition which, though contrary to the assertions of many anatomists, is in harmony with the phylogeny of the bone. A lengthy account of the paraseptal cartilages concludes this exhaustive contribution to the development of the cranium. Mr. Douglas G. Reid continues his Studies of the Intestine and Peritoneum in the Human Fœtus, and Dr. J. Cameron contributes a note on a Venous Anomaly. A paper of a more unusual nature is that of Mr. E. S. Mawe

upon Types of Nuchal Hair and a Possible Theory of the Prediction of Sex. The foundation of this paper is the ancient Japanese belief—and indeed the belief is spread far wider than Japan—that the sex of the next child may be predicted from a study of the arrangement of the hair on the back of the neck of the last child. Mr. Mawe has made some 300 observations, and as a result has determined ten types of nuchal hair patterns, and argued the expectation of sex to be drawn from them. Criticism is easy; but better than criticism will be an extension of the series of observations and the adoption of a strict scientific basis for all the data accumulated. One of those unnoticed points in osteology, of which so many have been discovered recently and so many more remain, has provided the subject of Dr. S. E. Whitnall's paper on a Tubercle on the Malar Bone, and on the Lateral Attachments of the Tarsal Plates. The tubercle, which is on the outer side of the orbital margin, was found to be present in 95 per cent. of 2000 skulls examined, and its importance as a point of attachment for various structures connected with the globe of the eye is amply demonstrated by the author. Another such point, but one previously noted by Dr. W. L. H. Duckworth, is dwelt on by Professor Thomas Dwight in his paper on Irregular Ossifications in the Space between the Transverse Process and the Rib at the Junction of the Neck and Thorax. Professor Robert Thomson describes two brains showing complete unilateral interruption of the fissure of Rolando. Some notes on various anatomical subjects complete the number.

Edinburgh Medical Journal.—Dr. George Williamson contributes to the August number of this magazine some notes on the Workmen's Compensation Act, illustrative of medico-legal points which may arise under this statute. Mr. William Guy, Dr. Alexander Goodall, and Dr. H. S. Reid publish a second instalment of their observations on blood pressure during the administration of anæsthetics, this part dealing with pulse frequency, and also setting forth the conclusions which the authors have reached. They are inclined to attribute such pressor effect as is observed to partial asphyxia, while they note that ethyl chloride causes a disturbance of circulation which may be dangerous. Dr. D. Fraser Harris points out that in the recently published textbook of physiology by Professor Luciani the credit for the discovery of the circulation of the blood is given to Cæsalpinus instead of to Harvey; and a clinical note by Mr. David Wallace calls attention to the possible coexistence of vesical tumour with enlargement of the prostate, and to the necessity for careful examination in cases of the latter affection.

The Medical Chronicle.—In the August number Mr. J. Howson Ray writes on the Surgical Affections of the Hip-joint in Infancy and Childhood, dealing chiefly with tuberculous disease, congenital dislocation (so-called), and conditions of coxa vara and valga. He speaks favourably of the results of Lorenz's method and gives details of his own operative procedure. Dr. R. T. Williamson records a case of Cerebral Tumour affecting the basal ganglia on the left side and both temporo-sphenoidal lobes, and accompanied by flaccid paralysis and changes in the posterior nerve-root fibres.

Dublin Journal of Medical Science.—In the August issue of this journal is published a thesis by Dr. William H. L. MacCarthy on the Early Diagnosis of General Paralysis. The author shows the close simulation of this disease by some forms of alcoholism and enumerates the various laboratory methods available for aid in diagnosis. The use of atropine as a preventive of pulmonary complications following the administration of ether is recommended by Dr. Ernest A. W. Henley, this drug apparently checking the secretion of mucus from the trachea and bronchi. The Clinical Report of the Rotunda Hospital, by Dr. E. Hastings Tweedy and Dr. R. J. Rowlette, is concluded in this issue.

Reports and Analytical Records FROM THE LANCET LABORATORY.

HALAKONES.

(FRANK A. ROGERS, 327, OXFORD-STREET, LONDON, W.)

HALAKONES seem to us to be very useful for bringing a medicament into contact with the nasal, laryngeal, or bronchial passages; they consist of small conical plugs composed of stiffened gauze. They are easily introduced and retained in the nostril. Amongst the medicaments with which the halakone is charged are menthol, guaiacol, eucalyptus, terebene, and sal alembroth, but perhaps one of the most useful, on account of the good results which it gives in nasal catarrh, is coryfin, which is menthol ethyl glycolate. Its action is more lasting than menthol. The halakone also is calculated to remove organisms from the air intake when inspiration is confined to the nasal passage. Another application of moment is the halakone as a filter of the dust from the air of the dusty road for motorists and cyclists.

CEREGEN FOOD.

(JOHN BELL, HILLS, AND LUCAS, LIMITED, OXFORD WORKS, TOWER BRIDGE-ROAD, LONDON, S.E.)

A decided dietetic advantage of ceregen food is that it contains, according to our analysis, a requisite amount of assimilable protein. There are present also ferments which, when the instructions for preparing the food are carefully followed, serve to help the work of digestion. In our experiments we found that if the food be mixed into a paste with water, and then diluted and kept at body heat for an hour or so, the filtered liquid shows a considerable proportion of soluble protein according to the bromine test. Fat is also present in suitable quantity. In short, the food contains all the elements necessary for complete nutrition. Our analysis gave the following results: moisture, 8·10 per cent.; mineral matter, 5·70 per cent.; protein, 23·81 per cent.; fat, 3·44 per cent.; carbohydrates by difference, 58·95 per cent.; phosphates were present in abundance. The food is pleasant besides nutritious, while its cost is moderate.

MALT EXTRACT WITH IRON IODIDE.

(A. WANDER, LIMITED, 1 AND 3, LEONARD-STREET, CITY-ROAD, LONDON, E.C.)

Malt extract appears to be a good vehicle for administering the useful, but unstable, salt iodide of iron. The malt tends to keep the iron definitely in the ferrous state, while the iodine does not set up iodism when so administered. We had no difficulty in detecting both iron and iodine, and the former was present, as stated, in the ferrous condition unoxidised. Clinical evidence shows some good results of the use of the mixture in tuberculosis and it has also been used in anæmia and rheumatic affections.

JAMESON'S IRISH WHISKY.

(JOHN JAMESON AND SON, LIMITED, BOW-STREET DISTILLERY, DUBLIN.)

It is rarely that we find Irish whisky anything else but an all malt pot-still spirit, and the brand under examination is typical of a thoroughly matured soft-flavoured Irish whisky. We have evidence also of its being a standard product

inasmuch as the analysis of a sample obtained independently on the market gave results which accorded exactly with those given by samples submitted to us direct from the distillery. This is a matter of some importance when the medical practitioner considers it advisable to recommend this kind of stimulant to the patient. The peculiar flavour of Irish whisky is well known, and it is due to the method of manufacture. It is prepared from a mixture of malted barley with unmalted grain, and the malt is not dried over peat. The flavour in the young spirit is unpleasant, and therefore when an Irish whisky is palatable it is a guarantee that it has been matured. Below we give the analyses of two samples of whisky from the above distillery, one obtained upon the market and the other direct from the distillers: 1. Distiller's sample—alcohol by volume, 48·21 per cent.; extractives, 0·07 per cent.; acidity reckoned as acetic acid, 0·012 per cent. The secondary products were as follows, given in parts per 100,000 parts of alcohol present: aldehydes, 20·00; furfural, 8·30 per cent.; and higher alcohols, 208·00. Market sample—alcohol by volume, 47·67 per cent.; extractives, 0 07 per cent.; acidity reckoned as acetic acid, 0·018 per cent. The secondary products in parts per 100,000 parts of alcohol present were as follows: aldehydes, 20·00; furfural, 8·30; and higher alcohols, 208·00. There will thus be seen a very close agreement between the figures of analysis of the samples. The whisky has all the physical signs of maturity; it is peculiarly soft and smooth to the palate, free from acidity and from harsh flavours.

FIREPROOF CLOTH.

(E. H. SELLERS AND SONS, SCARR MILLS, LOCKWOOD, HUDDERSFIELD.)

We have been asked to submit a sample of this cloth to the same fire tests as those described in our report on flannelettes which appeared in THE LANCET, July 15th, 1911. The material came through the ordeal quite satisfactorily and behaved much like ordinary flannel when ignited. The well-known disagreeable smell evolved when animal matters are burned was given off—the smell of burnt feathers. The material is safe, and when it does burn it burns quietly, and the flame is easily extinguished. There is none of the nap or fluff upon it which causes the flame to spread with disastrous rapidity over flannelette. The material gave no ash on ignition, so that it is not fireproofed with fixed mineral salts. The cloth looks like canvas, but is cool, smooth, and silky to the touch. We understand that it has not been used for clothing so far, but there is a suggestion that it might be so used with certain advantages.

HOME-MADE MARMALADE.

(CHARLES SIBLEY, HIGH STREET, REDBOURN, HERTS.)

There is very little calling for remark in regard to this preserve except that it is evidently made with care and from pure materials. Analysis shows a good state of concentration, the moisture amounting to 23·32 per cent. There were no artificial stiffening substances present. The total sugar amounted to 74·08 per cent. We believe marmalade to be a very suitable addition to the first meal of the day, as undoubtedly it is an agreeable bitter and stomachic.

DENTAL PREPARATIONS.

(THE STRAND CHEMICAL CO., 22, ELY-PLACE, HOLBORN, LONDON, E.C.)

These preparations act satisfactorily for the purpose of keeping the oral cavities and crevices clean. The tooth-powder has for its basis magnesium peroxide which yields nascent oxygen and a residue of antacid magnesia. It is a pleasant and effective powder to use. The aseptic denture cleanser is similarly useful for keeping the dental plate scientifically clean; it has burnishing properties and does not scratch. Formizin Waldo is an agreeable concentrated mouth-wash containing well-known antiseptic deodorant and soothing agents. It leaves a pleasant sense of cleanliness in the mouth. We have confirmed by analysis the presence of several constituents which substantiate the claims made in regard to its suitability for keeping the mouth in a cleanly state.

ME-MALTO WINE.

(H. G. KINGHAM AND COMPANY, 96, HIGH-STREET, DORKING, SURREY.)

We agree in regard to the claim made in favour of this preparation that it is purely and simply a combination of genuine port (Alto Douro) with Liebig's beef extract and malt extract. Our analysis gave the following results: alcohol, by volume, 21·79 per cent.; extractives, 15·42 per cent.; mineral matter, 0·33 per cent.; and protein, calculated upon 0·07 per cent. of nitrogen, 0·44 per cent. The presence of nutritive protein was shown by the bromine test. The mineral matter consisted chiefly of phosphates. This analysis compares favourably with that of a sample obtained independently, the results being as follows: alcohol, by volume, 23·10 per cent.; extractives, 14·46 per cent.; and mineral matter, 0·30 per cent. This second sample again showed protein. Both samples possessed the real flavour of a genuine port with a suggestion of meat and malt extract. The physician will know what cases he considers such a preparation may be suitable for.

(1) MILK FOOD; AND (2) HEALTH DIET.

(JOSIAH R. NEAVE AND CO., FORDINGBRIDGE, HAMPSHIRE.)

1. "Milk food" is entitled to the description, inasmuch as it has a composition closely resembling that of dried human milk. Our analysis gave the following results: moisture, 4·80 per cent.; mineral matter, 3 50 per cent.; milk sugar, 42·55 per cent.; protein, 22·75 per cent.; and fat, 26·40 per cent. The food is thus well balanced from the dietetic point of view, containing all classes of reparative material. 2. The "health diet" differs from the previous food, in that it contains in addition to protein and fat and milk sugar, a proportion of starch. Analysis gave the following results: moisture, 4·10 per cent.; mineral matter, 2·90 per cent.; protein, 22·93 per cent.; fat, 19·40 per cent.; milk sugar, 21·18 per cent.; and starch, 29·49 per cent. The former food is adapted for infant and the latter for invalid requirements.

VIN DE GRAVES.

(HATCH, MANSFIELD, AND CO., 47, PALL MALL, LONDON, W.)

This is a typical clean non-acid wine from the Graves district; it contains a minimum of alcohol as will be seen from the following analysis: alcohol, by volume, 11·61 per cent.; total extractives, 2·20 per cent.; mineral matter, 0·19 per cent.; volatile acidity, reckoned as acetic acid, 0·21 per cent.; fixed acidity, reckoned as tartaric acid, 0·52 per cent.; and sugar, 0·46 per cent. There is a minimum again of sugar and acid. The wine, which was in sound condition when it reached us, possesses an agreeably delicate flavour. As is the case with most genuine sauternes, it contains traces of sulphur dioxide due to the burning of a little sulphur in the cask. As long as this treatment is not excessive good is more likely to result than harm by its adoption.

LITERARY INTELLIGENCE.—Mr. Albert Carless has passed for the press the eighth edition of the "Manual of Surgery," by himself and the late Mr. William Rose, which Messrs. Baillière, Tindall, and Cox announce for immediate publication. The new edition will include numerous coloured plates, in the preparation of which Mr. Carless has been assisted by Dr. W. d'Este Emery. Many of the older illustrations have been redrawn, and the entire work has been revised. A second edition of the English translation of Professor Dieulafoy's "Manuel de Pathologie Interne" is announced by the same firm.

ROYAL INSTITUTE OF PUBLIC HEALTH: ANNUAL CONGRESS.

(FROM A SPECIAL CORRESPONDENT.)

THE annual Congress of the Royal Institute of Public Health was held in Dublin from August 15th to 21st, under the presidency of Her Excellency the Countess of Aberdeen. On two previous occasions—in 1892 and 1898—the institute had met in Dublin, under the presidency of Sir Charles Cameron. The work of the Congress on the present occasion was divided into eight sections—viz., Preventive Medicine, Chemistry and Bacteriology, Child Study and Eugenics, Comparative Pathology and Veterinary Hygiene, Engineering and Architecture, Housing of the Working Classes and Town Planning, Municipal and Parliamentary, and Vital Statistics. There were, in addition, conferences of medical officers of health and port sanitary officers, and of sanitary inspectors. The meetings were all held in Trinity College, the rooms being kindly lent by the Provost and senior Fellows.

The Housing Question.

Out of the large number of subjects discussed two attracted special attention—the housing question and school hygiene. As there was a special section to deal with the housing question one would have expected to find the discussions on the subject confined to that section, but there was, however, constant overlapping, and the same subject was discussed before small audiences in two, three, or four sections. Three sectional Presidents chose the housing problem in Dublin as the subject of their presidential addresses, and a paper on the same subject was read in at least one other section.

A paper by Dr. J. WRIGHT MASON of Hull, entitled "The Housing Problem in Industrial Centres and the New Housing Acts," was perhaps the most important contribution in the Housing Section. He compared the rates of mortality in cottage dwellings with those in large blocks and argued strongly in favour of the cottage system as preferable in every way.

Sir LAMBERT ORMSBY recounted the history of a successful experiment on a small scale in Dublin for the housing of the very poor.

Mr. C. J. MCCARTHY, the city architect of Dublin, showed the magnitude of the problem which has to be faced in Dublin. The Dublin Artisans' Dwellings Company had erected 3600 well-planned dwellings, while the corporation had provided 1330 dwellings. Nevertheless, it would be understood that while they had still some 21,000 families occupying single-room tenements the housing problem was very far indeed from having been solved. As to the direction in which a solution might be found, he thought that instead of attempting to provide working-class dwellings on the outskirts of the city and bringing the people in to their work they would have to acquire and clear large central slum areas. Portion of these would, he hoped, be converted into open spaces, playing grounds, and gardens, and on the other portions would be erected dwellings suitable to the requirements of the working population. They must abandon the idea that any really great and comprehensive reform of the housing of the people could be made remunerative in the ordinary sense of the word. The chief return for which they must look would be found in the improved health of the city and the increased efficiency of the workers.

School Hygiene.

On the subject of school hygiene the most important contribution was that of Mr. W. J. M. STARKIE, the Resident Commissioner of National Education in Ireland. He dealt with the question of dental inspection of school children in Ireland. He learned from the teachers that practically all the older children were as regards their teeth in a desperate condition. With regard to school buildings he said that there were hundreds of school buildings which for sheer horror could not be equalled in any part of Europe. He referred to photographs of two in Donegal and said in his opinion children would be far better off if they remained at home without education than cooped up in such huts for four or five hours a day. If many of the schoolhouses were permitted to be hotbeds of disease it seemed hopeless to expect the State to make any provision for the care of the teeth. And yet he ventured to say that the health of the young should be the first interest of the public.

Mr. GEORGE FLETCHER, of the Department of Agriculture and Technical Instruction, urged the necessity of medical inspection of school children in Ireland. The medical inspection of schools—which should be accompanied by an anthropometric survey—was a pressing need. From a national standpoint, however, it was not at bottom a question of expenditure, but a question of bookkeeping. It was better to pay for the prevention of an evil than for its cure. The State, rightly or wrongly, had made itself responsible for the school education of its youth. Much of the money expended on education was wasted owing to the physical unfitness of the scholars. This could in a large measure be remedied by medical inspection, and the vigour of the nation improved at the same time. The question was not one for educational administrators alone. It was a matter in which the education of public opinion and the cultivation of a "hygienic conscience" were prime essentials.

Dr. E. MAGENNIS read a paper on "Visual Impediments to Learning," and Surgeon-Colonel D. E. FLINN and others pressed for the establishment of day industrial schools.

Water Supplies.

Dr. A. C. HOUSTON (of the Metropolitan Water Board) discussed various problems concerned with water-supplies. He spoke of the process by which stored water purified itself from bacterial contamination, and thought storage more important than filtration. He suggested that they had been over-estimating the dangerous qualities of unfiltered water as a constant factor, and under-estimating the necessity of shutting the door against the possibility of accident, and also placing an altogether delusive value on the effect of sand-filtration alone. He believed that in the future they would consider it unnecessary still further to perfect filtration processes when dealing with "stored" waters, that they would have less dread of the evil qualities of unfiltered water as a constant menace, and that the main endeavour would be to guard against the possibility of accident, either before, during, or subsequent to, the filtration process, and so to deal with unfiltered water—e.g., by storage—as practically to nullify the effects of any sudden gross specific infection.

Other Papers.—Social Events.

Dr. E. J. MCWEENEY read a paper dealing with the Rôle of Carriers in the Propagation of Disease, and another on Meat Poisoning.

In the section of Vital Statistics two papers of special interest were read, one, by Sir W. J. THOMPSON, Registrar-General, President of the section, on Vital Statistics of Ireland from 1864 to the Present, and the other by Mr. D. A. CHART, on Public Health of Ireland from 1801 to 1911. Sir William Thompson showed that the death-rate from practically all the principal epidemic diseases had steadily fallen. The tuberculosis rate had altered little until within the past few years, when there was a slight fall. Influenza and cancer showed an upward tendency. In a general summary he stated that (1) emigration had enormously decreased; (2) the birth-rate, notwithstanding emigration and a decreasing population, had remained almost stationary; (3) the marriage rate had increased of late years; (4) the death-rate, after many fluctuations, was decreasing. Moreover, (*a*) the number of inhabited houses in Ireland had increased; (*b*) the number of houses being built had also increased; (*c*) the number of families had increased; (*d*) the number of uninhabited houses had decreased.

In addition to the sectional meetings there were, of course, many pleasant social events. There was all the more time for these as the sections adjourned each day at lunch-time. The afternoons and evenings were spent in garden parties, receptions, dinners, and visits to places of interest.

Faults in the organisation of the Congress gave rise to a good deal of grumbling. The overlapping of the work of the sections, already mentioned, robbed many of the discussions of their interest and influence. The official "Programme and Guide" gave no help to a member wishing to know where and when a particular paper was to be read. Except in one section, that of Comparative Pathology, no time-table was issued. A member therefore had to take his chance of finding something of interest going on in whatever section he happened to visit. In future meetings the time given to the Congress might well be shortened, the number of sections might be diminished, and their working hours lengthened.

New Inventions.

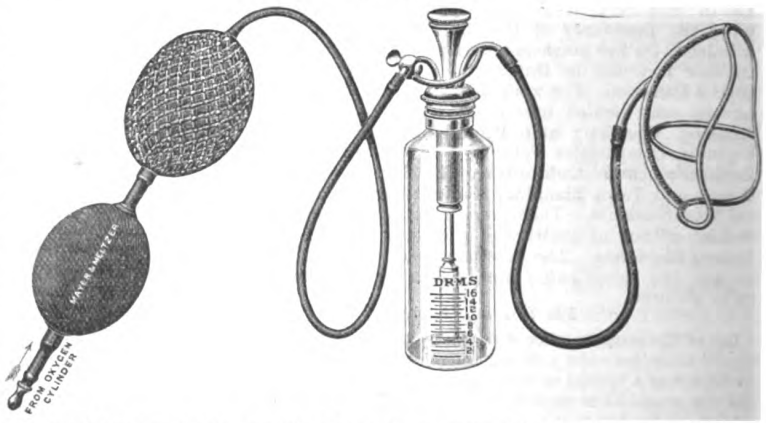
AN OXYGEN-DRIVEN CHLOROFORM INHALER.

THIS apparatus (Fig. 1), on the principle of the Junker chloroform inhaler, is designed to simplify the simultaneous administration of oxygen and chloroform. A short cannula (Fig. 2) at the extremity of the bellows system plugs into the tube leading from the oxygen cylinder. The bellows consists of two bulbs, each of the capacity of 100 c.c.; the first bulb is provided with an inlet valve The chloroform chamber is fitted with oxygen inlet and chloroform vapour outlet tubes (Figs. 3 and 4). These tubes are connected outside the chamber by a short-circuit tube controlled by a simple tap. By closing this tap the current of oxygen no longer passes through the chloroform in the chamber, but is delivered through the short circuit directly to the face-piece free from chloroform vapour.

To use the inhaler the cannula is plugged into the oxygen cylinder tubing and a feeble current is allowed to enter the chloroform chamber. The current required to maintain anæsthesia corresponds to between 0·5–1·0 litre per minute. The current passing is measured by compressing the bulb, allowing it to fill, compressing again, and noting how often per minute the bulb is filled. As the capacity of the bulb is 100 c.c. five fillings per minute correspond to a current of 0·5 litre, ten fillings to a current of 1·0 litre, and so on. The average patient requires a current of 0·75 litre per minute (7–8 fillings). At any moment the chloroform vapour may be instantaneously cut off and pure oxygen supplied to the patient by turning the short-circuit tap. The percentage of chloroform in the mixture delivered is very low; about 3·5 c.c. (1 drachm) of chloroform is volatilised every quarter of an hour with the average 0·75 litre oxygen current. It has not been found necessary to interpose an oxygen reservoir bag in the system—there is already a triple expansion series—viz., two bulbs and the chloroform chamber—and no appreciable chilling of the oxygen-chloroform mixture occurs. In default of oxygen the apparatus may be used as an ordinary air-bellows inhaler by disconnecting the cannula from the oxygen cylinder tubing.

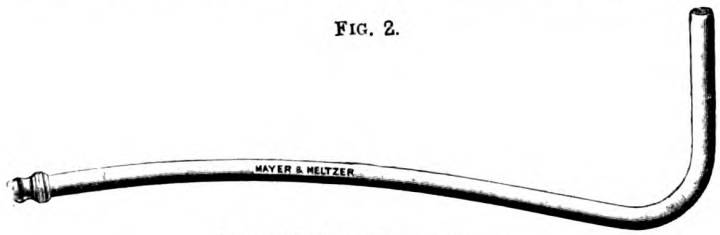
The apparatus is carefully constructed by Messrs. Mayer and Meltzer, 71, Great Portland-street, W.

FIG. 1.



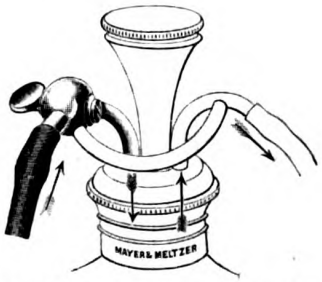
Oxygen-chloroform inhaler, consisting of a bellows system free at one end for attachment to the oxygen cylinder, and attached to the chloroform bottle, from which an outlet tube leads to the face mask. The inlet and outlet tubes can be short-circuited by a curved connecting tube, which is opened and closed by a stopcock.

FIG. 2.



The cannula for mouth administration.

FIG. 3.



The attachment to the chloroform bottle, showing the stopcock open, so that the stream of oxygen passes down the tube into the chloroform bottle, whence the emerging stream to the face-mask consists of oxygen plus chloroform.

FIG. 4.

The same as Fig. 3, but with the stopcock closed, showing how the oxygen stream, instead of passing through the chloroform bottle, goes directly through the short-circuit tube to the face-mask, thus delivering pure oxygen without the admixture of chloroform.

R. M. ROWE, M.A., M.D., Ch.B. Edin., M.R.C.S. Eng., L.R.C.P. Lond.,
Anæsthetist, Throat Hospital, Golden-square, W.; late Anæsthetist, Male Lock Hospital, W.

UNIVERSITY OF ST. ANDREWS.—We learn that the Senatus Academicus of the University of St. Andrews has resolved to confer the honorary degree of LL.D. upon the following members of the medical profession, in this country and abroad, at the celebration in September of the 500th anniversary of the foundation of the University:—Professor Sir T. Clifford Allbutt, Cambridge University; Sir Thomas Barlow, President of the Royal College of Physicians of London; Mr. G. A Berry, honorary surgeon oculist to the King in Scotland; Dr. Byrom Bramwell, President of the Royal College of Physicians of Edinburgh; Dr. Robert Bridges; Dr. Alexander Crum Brown; Professor Sir Hector Cameron, University of Glasgow; Professor Francis Gotch, University of Oxford; Professor Peter Fredrik Holst, Royal Frederick University of Christiania; Professor Hector Leboucq, University of Ghent; Professor C. S. Minot, of Harvard; Professor R. A. Reddingius, University of Groningen; Professor Robert Saundby, President of the British Medical Association; Professor E. A. Schäfer, University of Edinburgh; Professor W. W. Keen of Philadelphia; Lieutenant-Colonel David Prain, Director of the Royal Botanic Gardens, Kew; Dr. Anthony Traill, Provost of Trinity College, Dublin; and Professor Johann Veit, University of Halle.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 2, 1911.

Energy and Elemental Instability.

THE presidential address delivered by Sir WILLIAM RAMSAY before the meeting of the British Association for the Advancement of Science at Portsmouth was a novelty in its distinguished position, for it was discursive. It was not confined to presenting a summary of the progress of science within the past year, nor was it devoted entirely to a given aspect of science in which the President himself had been engaged. Sir WILLIAM RAMSAY delivered an address which was generally retrospective, seeking to picture the present position of civilised nations politically, scientifically, socially, educationally, industrially, imperially, in contrast with periods of the past. In an audience necessarily cosmopolitan in its scientific tastes the address presented something of interest to everybody; while he kept his discussion of the various subjects well within the capacity of his listeners, bearing in mind that the British Association of Science opens its ranks not merely to those following different branches of science, but also to many who, though interested in the problems of science, are not engaged in actual scientific pursuits. His address, in fact, carried out his view that the greatest benefit accruing from meetings of the kind is the opportunity for intercourse. The object of the association was declared 80 years ago at its first meeting in York to be: "To give a stronger impulse and a more systematic direction to scientific inquiry, to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers, to obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress." As a mighty contributor to this progress, whose arduous researches have thrown strong light upon the constitution of matter, Sir WILLIAM RAMSAY was well qualified for the presidential post of the association.

Whilst we perceive the value of the suggestive incursions which Sir WILLIAM RAMSAY made into regions not practically explored by himself, we regard as the most remarkable passages in his address those in which he referred to the position of the elements of radium and the wonderful manifestations of its energy. He gave only a few minutes to the consideration of ancient and modern views regarding the chemical elements, and yet in those minutes he was able to announce that for the first time we have accurate knowledge as to the descent of some of the elements. This was a recognition that our ideas as to the definition of an element have been seriously disturbed. From its physical and chemical properties radium is an undoubted element, but, as Sir WILLIAM RAMSAY observed, it is a very curious one, for it is unstable, and hitherto stability has been believed to be the essential characteristic of an element. Radium, however, disintegrates—changes, that is to say, into other bodies, and at a constant rate. If one gramme is kept for 1760 years only half a gramme will be left at the end of that time; half of it will have given off other products. It yields a condensable gas—radium emanation—and besides evolves helium. Helium seems to be a veritable element, and radium emanation has been shown to be incapable of chemical union, but it has been liquefied and solidified in the laboratory of University College, London, and its spectrum has been measured and its density determined. The emanation has been called niton to recall its connexion with its congeners, argon, neon, krypton, xenon, helium, and its phosphorescent properties. The atomic weight of niton is 222·4 and that of helium 4. The sum 226·4 is the atomic weight of the parent radium. But the descent does not stop there. Niton in its turn gives radium A and helium, radium A rapidly gives another solid substance radium B, helium again accompanying the change. Soon a half of B gives place to radium C, but in this case no helium is evolved, only atoms of electricity to which the name "electrons" has been given by Dr. JOHNSTONE STONEY. Radium C has a short life, for it changes into radium C^2, parting with helium atoms. In two and a half minutes, however, radium C^2 is half gone, parting once again with electrons and forming radium D, which is longer lived, its disappearance eventuating in radium E with apparently no discharge of electrons or helium. Radium E changes spontaneously into radium F, which is the substance to which Madame CURIE gave the name "polonium." In 140 days, however, polonium in its turn is half changed into an unknown metal, supposed to be possibly lead. Then apparently a check to the rapid descent takes place, for lead within present human limitations, at any rate, is stable. But there is no reason why even the stable elements should not decompose when subjected to enormous strains. The virtue of the energy of radium consists, as Sir WILLIAM RAMSAY pointed out, in the small weight in which it is contained; energy here is in an enormously concentrated form. It is disappointing to be told, therefore, that the supply is a very limited one, and that it can safely be affirmed that the production will never surpass half an ounce in any year. The small quantities, however, which have been so far produced have afforded sufficient energy to induce the degradation of elements hitherto regarded as stable. The action of niton or radium emanation on salts of copper appears to show that the metal copper can be converted partially into lithium; and similar experiments indicate that thorium, zirconium, titanium, and silicon are degraded into carbon, for solutions of compounds of these, mixed with niton, invariably generate carbon dioxide, while cerium, silver, mercury, and some other metals give none. This is all a very wonderful story, and we may well ponder over the possibilities for the human race to which these discoveries are leading. Sir WILLIAM RAMSAY suggests that if elements are capable of disintegration the world will have at its disposal a hitherto unsuspected source of energy. If radium were to evolve its stored-up energy at the same rate that gun-cotton does we should have an undreamt-of explosive; could we control the rate, we should have a useful and

potent source of energy, provided always that a supply of radium were forthcoming. "If, however, the elements which we have been used to consider as permanent are capable of changing with evolution of energy; if some form of catalyser could be discovered which would usefully increase their almost inconceivably slow rate of change, then it is not too much to say that the whole future of our race would be altered;" that is how Sir WILLIAM RAMSAY pithily sums up the position.

There is truth in his words, for the whole progress of the human race has been due to enterprising philosophers, speculators, and workers who have discovered means of concentrating energy and of transforming one form of it into another. As discovery upon discovery is made by which any one power is utilised to control the great natural forces the consequent achievements will have far-reaching eventualities for humanity. We may well ask, then, is the future to depend upon a mighty catalyser, suggested by the energies of radium; are man's attempts to secure for his use the natural forces to be for ever unavailing? What of the tides, the internal heat of the earth, the winds, and solar heat? The answer from scientific men and men of the great engineering profession is disappointing. In this country, at least, we are told that it would be impracticable to attempt to utilise terrestrial heat from boreholes, while from the tides and the winds small supplies of energy are obtainable, but negligible in comparison with that derived from the combustion of coal. Again, nothing is to be hoped for from the direct utilisation of solar heat in this temperate and uncertain climate, while it appears improbable that we shall ever be able to utilise the energy due to the revolution of the earth on her axis, or to her proper motion round the sun. One lesson of all this is that we must make the most of our coal—a diminishing quantity in all the civilised parts of the earth—for our supply of energy, and for the means of supporting our population. Sir WILLIAM RAMSAY, in inculcating this lesson, does not appear to regard the possibilities of liquid fuel; otherwise his wise words cover all the ground. Waste must be penalised. Smoke, as an evidence of it, must be abolished even although it proceeds from the domestic hearth; energy must be transmitted by cheap channels from its sources and not manufactured from the raw material at a million tiny local centres where the conditions are sure to be clumsy, beyond control, unhygienic, and wasteful. Electricity seems to be the way out, for, to quote Sir WILLIAM RAMSAY'S words, an invention which would enable us to convert the energy of coal directly into electrical energy would revolutionise our ideas and methods.

The discovery of radium and similar radio-active substances has widened the bounds of thought, as Sir WILLIAM RAMSAY fittingly points out in a concluding appeal for the study of pure science apart from its applications. While these radio-active substances are in all probability incapable of industrial application, save in the domain of medicine, their study has shown us to what enormous advances in the concentration of energy it is permissible to look forward with the hope of applying the knowledge thereby gained to the betterment of the whole human race.

The Provision of Meals for School Children.

THE working of the Education (Provision of Meals) Act, 1906, for the year ending March 31st, 1910, forms the subject of a Parliamentary Report, from which we learn that on the date named the total number of local education authorities in existence was 327. From 128 of these, in whose areas "school canteen committees" have been formed, the Board of Education has received full replies to a circular inquiring into the working of the Act in respect of the following points: The character and composition of the committee; the method of recommendation or selection of the children for meals; the total number of children fed, with the periods during which they received meals; the number of meals provided, with the place and dietary; the method of serving and the behaviour of the children; and the cost to the rates, with a statement of additional sources of income—e.g., voluntary contributions and money contributed by, or recovered from, parents; the average estimated cost of each meal; the charges fixed as recoverable; the number of children whose meals were wholly or in part paid for by their parents, and the number withdrawn owing to unwillingness of the parents to pay; and the amount which a $\frac{1}{2}d.$ rate would have produced for the period under review. It has not been considered necessary to put the Act into force in 198 of these areas, in many cases voluntary organisations proving sufficient.

From the report it appears that during the year 1910 the total expenditure of the local education authorities was £134,105, distributed as follows: (1) For food, under Section 3 of Act, £81,728; (2) other expenditures, under Section 3, £43,644; (3) estimated share of office expenses and salaries chargeable to work under Act, £8733. The expenditure of the canteen committees was met from funds as follows: Rates for expenditures (1) and (2) above, £125,372; voluntary contributions, £9813; contributed or recovered from parents (including £225 paid by Poor-law guardians), £906; total £136,091. The total figures for 1908–09 were, expenditure, £72,333; sources of income, £85,690. The increase in 1909–10 is mainly attributable to London, and is largely due to the fact that the London County Council expenditure in 1909–10 is for 12 months, whereas in the previous year it did not begin until within three months of the end of the year, so that the returns for that year covered only three months. The total number of meals provided was as follows: In 1908–09: London, 4,546,771; elsewhere, 9,671,789. In 1909–10: London, 7,335,469; elsewhere, 8,766,635. As some authorities, including the London County Council, have made no returns of the number of children for whom meals were provided, the average estimate of meals for each child can be calculated on a portion only, excluding those areas from which details are not available. This calculation gives a total of 63·8 per child. The authorities which provided meals for the largest number of children were as follows: Birmingham, 9678; Manchester, 7421; Newcastle, 6888; Leeds, 6867; Sheffield, 5331; Bristol, 5240; Bradford, 4406. London and Sunderland made no return of children; but, as regards the largest number of meals provided, the

figures are: London, 7,335,469; Bradford, 957,739; Birmingham, 575,036; Sunderland, 509,402. The sums recoverable by the authorities from parents were about as last year—viz., from ½d. to 3d., while there was little change in the amounts so recovered. In other respects the returns show comparatively little change from those forming the basis of the earlier report.

From the public point of view, as well as from that of our readers, the most interesting thing in the report is that the Board of Education lays stress on the intimate connexion of the provision of meals with medical inspection. Unless the provision of meals is coördinated with the work of the school medical officer as a branch of the school medical service it may degenerate into a system of doles, administered in a haphazard fashion on merely eleemosynary and sentimental lines. It is only thus that, in the opinion of the Board, wasteful and reckless expenditure can be prevented, and full value in increased vigour and more effective education can be obtained for the expenditure. Even when the large scale of the operations under the Act makes it impracticable for the medical officer to examine all children recommended for meals, he can at least take a large part in the selection of children, and by concentrating attention on doubtful cases, or those in which actual neglect is suspected, can help in the establishment of a proper standard. By visiting kitchens and dining centres from time to time, also, he can advise in the choice of food and test the results of different dietaries; thus he can see that special attention is given to the more delicate children, and will have an opportunity of judging the extent to which individual children are benefited by the meals. Discovery of the main causes of malnutrition will suggest a remedy, and an important part of the "following-up" system of treatment will be supplied. As to machinery for selecting those to be fed, in 70 cases the school medical officer, and in 39 the school nurses, made the recommendations. Further light on this subject can be discovered in the medical officers' reports of Dec. 31st, 1910. The excellent work of Dr. D. FORBES, school medical officer of Brighton, is quoted. In that town all children for whom an application for meals was made, amounting in 1910 to 1633, were weighed and measured and in special cases they were thoroughly examined. Of this number those recommended for meals on account of deficient physique, deficient weight in relation to height, tuberculosis or anæmia, amounted to 45 per cent. of the boys and 42 per cent. of the girls. Other medical officers whose commendable work is cited are Dr. C. F. STOVIN of Ilford, Mr. G. FOGGIN of Newcastle-on-Tyne, Dr. C. MURRAY of Preston, and Dr. RALPH P. WILLIAMS of Sheffield. From a series of comparative tests the last-named officer speaks highly of the great superiority of the porridge breakfast. As regards the opportunity afforded by the provision of meals for the inculcation of lessons in cleanliness, courtesy, and good behaviour, it is apparent, the report says, that little attention has been paid to these things. Dirty and ragged tablecloths, unnecessary noise, deficient efforts to teach orderly eating, and even actual disorderly conduct, bolting of food, rudeness, and improper use of the utensils, are commented on, though great excuse is admitted by the Board, because with limited attendants the mere serving of the food leaves but little leisure for exerting a humanising influence. In many cases, too, those in attendance can hardly be considered capable of giving lessons in deportment, as is obvious when we read that in one instance "nine charwomen of a rather low type attend to 470 children." Contrary instances are, however, referred to, in which much better conditions prevailed as regards not only the serving of the food, but the discipline, manners, and cleanliness of the children. The report points, as the reason for citing these adverse instances, to the fact that "it is more useful, though less pleasant, to supply warnings than models." The results from a medical point of view will find a place in the reports of the school medical officers.

The Risk of Plague at Home.

THE reports[1] and papers on suspected cases of human plague in East Suffolk and on the epizootic of plague which certainly attacked rodents in that district during last autumn and winter will possess the deepest interest for all epidemiologists, and they may have historical value subsequently, for what the more or less immediate future may have in store, both as regards rodent and human plague, cannot be prophesied. Many of the points dealt with in these papers are already common knowledge owing to the interest which the occurrence excited at the time, but the facts are now for the first time set out fully and in a manner which reflects credit upon the Medical Department of the Local Government Board. The epidemiological and administrative sides of the outbreak are dealt with by the late Dr. H. T. BULSTRODE with the clearness and thoroughness that might be expected from that greatly lamented sanitarian; while the flea fauna of the rats and rabbits, together with the species of the rats found, are reported upon by Dr. C. J. MARTIN and Mr. SYDNEY ROWLAND of the Lister Institute. The pathological and bacteriological side of the epizootic was undertaken for the Local Government Board by Dr. G. F. PETRIE and Dr. G. H. K. MACALISTER, also of the Lister Institute. Dr. A. NEWSHOLME, medical officer of the Board, presents the papers to Mr. BURNS with some introductory remarks. There are some excellent maps showing the distribution of the human and rat cases of plague, which render it easy to follow the narrative.

The first thing which strikes the reader on looking at the map accompanying Dr. BULSTRODE'S general report is the relatively extensive area over which the suspected human cases were observed between 1906–07 and 1910. But these cases are divisible into three or, at most, four separate groups; two of probable pneumonic plague and one of probable bubonic and septicæmic plague. There is, too, the very instructive circumstance that rats dead of plague were actually found on both sides of the estuary of the Orwell, not far from the localities in which the suspected human cases occurred. Clearly, as Dr. BULSTRODE points out, rat plague had probably been prevalent in some degree in this neighbourhood from 1907, and perhaps earlier, and it is a matter of great interest

[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series, No. 52. Published by His Majesty's Stationery Office. Sold by Wyman and Sons, Limited, Fetter-lane, E.C., or purchased through any bookseller. London. 1911. Price 1s. 3d.

to note that, notwithstanding this widely prevalent epizootic, there were only from 1906 onwards three or, at most, four primary cases of human plague, the remainder being secondary cases. This relative immunity is probably in large measure to be accounted for by the different habits of the brown and the black rat, and by the circumstance that not one example of Pulex cheopis (to use the familiar name), the flea of the black rat, was discovered. Moreover, as Dr. MARTIN and Mr. ROWLAND show in their instructive contribution to the volume, 50 per cent. of the rat-flea population consisted of a flea which apparently bites man but rarely. The remainder of the rat-flea population was composed of Ceratophyllus fasciatus, which bites man not very readily—not nearly so readily as does the rat-flea of India. There is, therefore, left only about one man-biting rat-flea to every two rats, a flea prevalence which, according to the work of the Indian Plague Commission, is too small to give rise to a human epidemic in India. As to the future, Dr. BULSTRODE insists that the absence of further cases of human plague does not justify the belief that danger has passed and that precautions can be relaxed. On the contrary, he considers that the history of plague both in this and other countries should suffice to show the peril of such a policy. But with reference to comparisons which have been made by some writers between the Plague of London and the behaviour of the disease at the present time he points to the different conditions, both zoological and social, which now prevail. During both the Black Death and the Plague of London the black rat (Mus rattus) was presumably the dominant rodent, the brown rat (Mus decumanus) not having reached this country until about the year 1728—i.e., several years after the disappearance of human plague from the British Isles. As regards the social conditions, attention is drawn to the practice which obtained at the time of the Plague of London of shutting up the sick with the healthy, a procedure which was calculated to facilitate intercourse between rats and man and between man and man. It seems, too, that in the fourteenth and seventeenth centuries the disease not infrequently attacked several persons in the same house, whereas at the present time in India, where the bubonic type almost exclusively prevails, multiple cases in the same house are extremely rare. This difference of behaviour seems to suggest, Dr. BULSTRODE observes, material variation in methods of spread, and, inferentially, in the type of disease which may prevail at different times. It raises question, in fact, as to the proportion of pneumonic, and perhaps also septicæmic, cases in relation to the purely bubonic in the fourteenth and seventeenth centuries. In Dr. BULSTRODE'S view a study of plague literature points to the conclusion that the pneumonic type played a more important part in the diffusion of plague in past epidemics than is generally believed. It is, for example, difficult to account for the behaviour of the famous Eyam outbreak in 1665-66, on the assumption that the disease was exclusively bubonic plague, since there were apparently some 259 cases in 76 families, a house incidence which suggests considerable case-to-case infectivity.

In the report the detailed account is given of the mysterious outbreak which occurred on the banks of the Orwell in the winter of 1909 to 1910, and which involved eight persons with five deaths. This outbreak, or rather series of cases, occasioned great excitement at the time of its occurrence, and resulted in two post-mortem examinations and three inquests, there having been, it seems, some suspicion of poisoning. But this suspicion is certainly dispelled by the searching examination to which Dr. BULSTRODE subjects the evidence, and it is clear that a communicable malady, having the incubation period and many of the signs and symptoms of plague, was in question. Whether this was actually an outbreak of bubonic and septicæmic plague cannot at this date be definitely determined, but there are many epidemiologists who will agree with Dr. BULSTRODE that the outbreak is best explained upon the theory that the disease was plague. That theory alone appears to fit all the ascertained facts. The paper furnished by Dr. PETRIE and Dr. MACALISTER upon the pathological and bacteriological examinations of rats collected outside the first invaded area is highly instructive, and brings out the difficulties experienced in endeavouring to interpret the pathological, microscopical, cultural, and staining manifestations which were encountered. Those difficulties were numerous. Of the 6071 rats examined 60 were retained for further examination. Of these, 15 evinced suspicious glandular conditions, and 45 showed glandular changes in the liver and spleen. But ultimately only three rats remained over from which growths strongly resembling B. pestis were obtained. Subsequently, however, it was determined that these conformed to a pseudo-tuberculous type. In addition to the three papers referred to, the volume contains the circulars and Orders of the Local Government Board and its medical officers, as well as extracts from the report of Mr. H. LLEWELLYN HEATH, the county medical officer of health. The whole work is of permanent value. It will be of great use to all medical officers of health for reference purposes, and in the event of further trouble arising will constitute an authoritative study of the precedent conditions.

Annotations.

"Ne quid nimis."

THE PSYCHOLOGY OF KLEPTOMANIA.

DURING the season of big sales in shops, when crowds are attracted by what they believe to be bargain prices, cases of theft are frequent; and no one who has followed the newspaper accounts of these occurrences can fail to see that while some instances fall into the category of ordinary dishonesty some present very puzzling features, so motiveless is the criminal act. Some years ago in his interesting work, "Les Obsessions et la Psychasthénie," M. Pierre Janet suggested an ingenious explanation of the mode in which impulsive acts may arise in conditions of mental depression. According to this theory, which was more fully developed by the author in an article in the *Journal of Abnormal Psychology* for April, 1906, on the Pathogenesis of Certain Impulsions, the reason why the psychasthenic patient is prone to impulsive action of a more or less dangerous character is that he finds in such action a momentary stimulus which raises his emotional tone and relieves for a time his painful sense of incompleteness and inadequacy to the environment. In the issue of the *Journal*

de Psychologie Normale et Pathologique for March–April of this year, M Janet published an observation of kleptomania which so exactly fulfils the conditions of his hypothesis that it amounts almost to a demonstration of its validity. The patient, a woman of good social position, had an attack of mental depression in 1904 when she was in her fiftieth year. The symptoms were of the usual character: on the mental side, loss of interest in everything, insomnia, abulia, feelings of "a veil around the head," "a layer of cotton on the brain," and so forth; and on the physical side, anorexia, furred tongue, fœtid breath, and very obstinate constipation. After lasting for some ten months this condition passed off gradually, and the patient continued well until five years later when she had another attack characterised by exactly the same symptoms, physical and mental, and lasting for eight months. In February, 1910, six months after her recovery, the same train of symptoms reappeared. But on this occasion, when the attack had followed its regular course for a few weeks, it came suddenly to an end; the depression and inertia, as well as the physical disorders, vanished, giving place to a condition of apparent health. In October of the same year the patient, to the amazement of her friends, was detected in the act of stealing some petty articles in one of the large Paris shops. When her rooms were examined they were found to contain the kleptomaniac's usual accumulation of useless and heterogeneous objects, many of them with the sale labels still attached to them. It was ascertained that the thefts dated back to the month of February, and the patient on being questioned stated that in that month she had gone to a shop with a friend who, wishing to rouse her from her depressed condition, urged her to make some purchases. Yielding to her companion's insistence, she selected some trivial object but could not attract the attention of the shopman. As she stood with the article in her hand she suddenly thought how easily she might be taken for a thief, and this momentary alarm then gave place to a delicious sense of danger which seemed to brace and stimulate her. She made her way out of the shop, and for some days felt quite restored to her normal state. Then the depression returned, and she had recourse to the same mode of excitement, and all through the summer she continued stealing as a means of keeping off the threatening attack. She had no sense of shame or remorse, but in deference to her friends she promised not to offend in this way again. She kept her word, and in a short time she recovered normal ethical feeling and was able to recognise the immorality of her conduct; the kleptomaniac impulse disappeared, but at the same time the loss of energy and the mental depression returned, together with the constipation and the other physical symptoms. This mode of genesis of the morbid impulse from the need of excitement in conditions of psychasthenia, which appears so clearly in M. Janet's interesting observation, may frequently be traced in other cases of pathological crime, and notably in many instances of indecent exposure.

THE CLASSIFICATION OF THE BLIND.

THE authorities responsible for the Census schedules of 1911 have made a regrettable slip which seriously detracts from the utility of the statistics. Instead of employing the term "blind" as heretofore without qualification, this year the description "totally blind" is employed. It is, indeed, doubtful whether any harm has been done, because the unqualified term "blind" must have been ambiguous in former years, some regarding it as meaning totally blind and others as blind for all practical purposes, though possessing perception of light or a very low grade of visual acuity. It is certain, however, that the opportunity for distinguishing between those who possess no vision or such defective vision that for purposes of education and wage-earning capacity they must submit to the conditions and lead the life of the totally blind, and those who possess useful, though still seriously defective, vision, such as might be designated "partially blind," has been missed by the Census officials. Mr. N. Bishop Harman has drawn attention to the subject in a paper read at the recent meeting of the British Medical Association and reported in abstract on p. 520 of THE LANCET of August 19th. We agree with him that the statistics are practically useless. A very large proportion of those absolutely incapacitated as regards vision still possess perception of light or a very low grade of visual acuity, and are therefore excluded from the "totally blind." It is easy, however, to criticise the classification, but difficulty arises when the attempt is made to draw the line between those "blind for the practical purposes of life" and the "partially blind" who yet possess useful vision, as, indeed, is shown by the divergence of opinion expressed by various speakers in the discussion on the paper. Since the schedules have to be filled up by people who have no knowledge of the scientific methods of numerically estimating the degree of visual acuity, and since a man may be incapacitated by defect of the field of vision whilst useful central vision persists, it would seem best to have a broad classification of those who are "blind for the practical purposes of life" and those who are "partially blind." The same difficulty has often arisen before with regard to various institutions and asylums for the blind, many patients who are to all intents and purposes blind being ineligible for admission on account of the possession of a meagre but practically useless vestige of sight.

EXPERIMENTAL MEASLES IN THE MONKEY.

IT is somewhat remarkable that in regard to some of the commonest of the specific infectious diseases, such as measles and scarlet fever, we are still in ignorance as to the exciting cause in spite of the advances in bacteriological technique. Moreover, our information as to their communicability to animals is scanty in the extreme. Since discoveries in regard to the infection of animals are often the precursor of important advances, any observations bearing upon this matter are noteworthy. Some interesting experiments upon the transmission of measles to monkeys have recently been recorded by Dr. John F. Anderson and Dr. Joseph Goldberger in the Public Health Reports[1] of the United States for June 9th and 16th. The only work on this subject to which they could find reference was that of Dr. A. S. F. Grünbaum in the *British Medical Journal* of April 9th, 1904. He reported various attempts at infecting two chimpanzees, including the injection of blood taken direct from the median basilic vein of measles cases. He did not succeed in conveying the infection and suggested that the injections may even have conferred immunity. Dr. Anderson and Dr. Goldberger inoculated nine rhesus monkeys with defibrinated blood from four cases of measles, withdrawn at periods of not less than 14 to 32 hours after the appearance of the eruption. The blood in every case gave no visible growth in standard glucose broth in fermentation tubes, and therefore appeared to be sterile. The inoculations were carried out either by subcutaneous, intracardiac, intracerebral, or intraperitoneal injection, or by combinations of these methods. Of the nine animals inoculated only four gave any very significant evidence of reaction. All of these developed a febrile reaction nine or ten days after inoculation, and in three of them there was

[1] Published by the Public Health and Marine Hospital Service, Washington Government Printing Office, 1911.

an eruption of papules on the face, chest, scalp, or abdomen, which faded, leaving stains and causing a fine branny scaling. An attempt to re-inoculate one of these monkeys failed. Passage inoculations were made in five monkeys with defibrinated blood withdrawn from the hearts of other monkeys which had given evidence of a reaction after the introduction of blood from human cases of measles. Of these five animals, in one there was no result apparent, one gave an ill-defined reaction, and three showed well-marked effects. Dr. Anderson and Dr. Goldberger conclude that the rhesus monkey is capable of being inoculated with measles by the injection of blood from a human case, that this susceptibility is at best not very great, and that it is subject to considerable individual variations. They are apparently continuing their observations since they promise a further report and mention a successful passage to a third monkey generation. These results may lead to interesting and valuable work upon immunity and we await further work with interest.

EPIDEMICS OF ACUTE POLIOMYELITIS IN FRANCE.

EPIDEMIC poliomyelitis is *à l'ordre du jour* in France. From the year 1905 onwards, when scientific attention was more specially directed to the matter, France apparently suffered less than some other of the countries of Europe, but during 1910 epidemics appeared in many widely separated parts of the country. During last year the disease was diffused over a great part of the globe. It was reported as occurring in epidemic form in Germany, Austria, Scotland, Switzerland, Belgium, Denmark, Russia, as well as in Canada, the United States, and Cuba. An extraordinarily interesting epidemic was recorded[1] the same year in Naura, a small island in the Pacific, 160 miles from the nearest land, where, with a total population of 2330, there were 700 cases and 38 deaths. In France application was made to the Minister of the Interior to notify all the physicians of the provinces and to send them a series of questions by way of eliciting details concerning the incidence of the disease. The information thus gleaned was presented by M. Arnold Netter in report form to the *Académie de Médecine* on May 23rd, 1911, and will be found in the official *Bulletin*. This has now been published, and is a document of great value. In at least 33 of the provincial departments of France the disease was prevalent. In the departments of Aube and Yonne, within an area of 20 square kilometres, an epidemic of 19 cases occurred in three months, furnishing instances of direct infection, of familial contagion, and of infection after contact with a healthy individual from the affected area, who served as an intermediary. In the departments of Basses-Pyrénées and Landes a widespread epidemic took place in July, August, and September. It is of importance from the number of cases diagnosed as epidemic cerebro-spinal meningitis which turned out to be really cases of poliomyelitis, and from the number of *cas frustes*. The mortality was more than 10 per cent. At Salies, one of the towns, it reached 15·5 per cent. The coexistence or succession of two or more cases in one family was common. Direct infection was noted frequently; in other cases its influence seemed *nil*. One of a family of 10 was affected, but none of the other children, who were in no way isolated from the patient, developed the condition. One only, of another family of 13, fell ill. In Mayenne and Maine-et-Loire, where at least 33 cases occurred, confusion between poliomyelitis and cerebro-spinal meningitis was a noteworthy feature, no doubt because the meningeal symptoms of the former were pronounced in almost every instance. M. Netter quotes numerous examples of infection carried by an individual not himself affected. Thus a child of 10, living in Paris, was taken ill on Oct. 13th and developed a typical paralysis of the left arm on the 15th. Her sister went to the country and remained unaffected. On Nov. 13th a little girl of 8, with whom the latter had been living, was taken ill, and the next day was found to be paralysed in the right arm. M. Netter discusses the evidence that the virus of acute poliomyelitis may reside in the nasal fossæ, and the possibility of its dissemination by coughing or sneezing. The analogies between poliomyelitis and epidemic cerebro-spinal meningitis are also investigated. The report is, as a matter of fact, more of the nature of a preliminary communication, for much of the material has not yet been completely analysed, but it forms a contribution to the subject, not only of documentary value, but of practical importance. Prophylaxis is becoming a matter within the sphere of practical medicine. The precautions taken in ordinary fevers ought to be enforced in the case of poliomyelitis. In Sweden, Norway, Germany, Austria, and the United States notification is compulsory. M. Netter pleads for its adoption in France. In view of Flexner's successful experimental use of urotropin in inoculated monkeys—it appears in the cerebro-spinal fluid within a few minutes of its injection—M. Netter counsels its employment in the disease. He mentions that he has used it himself, but does not say with what result.

[1] Müller: Eine Epidemische auftretende Erkrankung des Nervensystems auf Naura, Archiv für Schiff- und Tropen-hygiene, September, 1910.

THE PATHOLOGY OF PAPILLŒDEMA.

A REPRINT from *Brain* (Vol. XXXIII.) contains an important contribution to the study of what is generally called "optic neuritis" from the pens of Mr. Leslie J. Paton and Dr. Gordon M. Holmes. The writers entitle their paper the "Pathology of Papillœdema," but its contents warrant an even more inclusive name. At the same time, it is certainly the finely described minute pathology of the condition and the excellent deductive reasoning from observed facts which give the article its great value. Together the descriptions and the reasoning seem to us to dispose conclusively of any explanation of "optic neuritis" which involves a necessary element of inflammation. The writers of this paper show convincingly that the essential feature of optic neuritis is œdema, that evidences of inflammation are often infrequent and of insignificant proportions, and that if the œdema is removed, then the optic neuritis, as seen clinically, is removed also. The work is based on a histological examination of 60 eyes, a larger number, we believe, than have been hitherto available for any single investigator employed on this problem. Clinically the eyes of 700 cases of cerebral tumour were examined during a period extending over ten years, so that it will be seen that Mr. Paton and Dr. Holmes make claims for their conclusions upon no inconsiderable mass of evidence. Of the 60 eyes examined histologically 50 were from cases of cerebral tumour and 10 from examples of other conditions such as meningitis, retrobulbar neuritis, and pressure atrophy. The specimens obtained represented all stages of papillœdema, and much care was given to the important point of examining the eye as short a time as possible after death. As the result of these examinations the writers state that in their opinion the presence of œdema unaccompanied by any sign of inflammation, acute or chronic, is the one unfailing histological change found in tumour papill-œdema. They show also how œdema among nerve fibrils in a particular anatomical arrangement is responsible for the appearance known as the "macular fan," and hence they confirm an observation made some time ago by the late Mr. Marcus Gunn, whose opinion on such a point was, it will be remembered, rarely at fault. According to Mr. Paton and

Dr. Holmes, the vascular changes concerned in optic neuritis are confined almost entirely to venous and capillary congestion. The chief evidence which they find that could be interpreted as inflammatory is some slight small round-cell infiltration into the connective tissue sheaths of some of the vessels. This is always of small amount and affecting only one or two vessels in any disc examined. Another argument advanced against the assumption of a "descending inflammation" or an inflammatory perineuritis as a causal factor in papillœdema is the fact that acute and extensive inflammatory lesions may exist in the optic nerves and yet produce no optic neuritis. Mr. Paton and Dr. Holmes have themselves examined such a case. The histological proofs on which the arguments are based are well reproduced in many illustrations of slides introduced into the article. Perhaps the most interesting and original part of this paper is that in which the writers advance their hypothesis for explaining the origin of the œdema which they have shown to be the essential feature of optic neuritis. In their opinion this is to be found in "the venous engorgement that results from the rise of intravenous pressure that is necessary in order that circulation should be maintained in the intravaginal portion of the vein where this is subjected to an increased sheath pressure. The increased sheath pressure is also the origin of the second factor, the obstruction to the lymph drainage from the papilla." For a detailed support and explanation of this contention we must refer our readers to the paper itself, a piece of careful work which will repay perusal and on which Mr. Paton and Dr. Holmes are to be congratulated.

THE RELATION OF ENTERIC FEVER TO LOCAL AND METEOROLOGICAL CONDITIONS.

THE close relation existing between the contamination of drinking water and outbreaks of enteric fever is now so generally recognised and accepted as a fundamental fact in regard to the epidemiology of that disease that it comes almost as a surprise to find it called in question. It is well known, however, that a long controversy raged between the "localisation theory" of Pettenkofer and the contagionist view of Koch and his followers. Pettenkofer maintained that the morbidity and mortality from enteric fever in Munich rose when the ground water was at a low level, and further that the typhoid poison was not capable of communicating the disease until it had undergone changes in the soil. We have received a copy of a pamphlet by Dr. R. J. Beck[1] in which this controversy is reopened. It forms one of a series published in commemoration of the fiftieth anniversary of the enunciation of Pettenkofer's view. It is prefaced by a note from Professor Emmerich, who is a keen supporter of the localisation theory. He maintains that a bacillus carrier is not dangerous without definite local conditions of the soil, and states that the typhoid and cholera bacilli are so weakened by their passage through the alimentary canal that they can produce little or no pathogenic effect. Dr. Beck reviews the conditions in certain epidemics of enteric fever occurring in Germany, Hungary, and South-west Africa, paying attention both to considerations of drinking water and to climatic conditions at the time of the epidemic. He claims to have proved that in none of them was a close relation between the epidemic and infection of drinking water established, whereas in all there was a close relation between the climatic conditions and the beginning and end of the epidemic. He found that the outbreaks of enteric fever were regularly preceded by a dry period—i.e., a period of diminished rainfall, varying from 3 to 21 weeks, and that with equal regularity the epidemic ended three weeks after heavy rainfall. He therefore urges that in every epidemic the conditions of soil, rain, dryness, and ground water should be considered as well as the question of drinking water. We cannot but feel that, like the earlier supporters of Pettenkofer's theory, Professor Emmerich and Dr. Beck are inclined to underestimate the importance of the typhoid organism and to exaggerate that of the soil and ground water; at the same time it is easy to go to the other extreme, and Dr. Beck's observations may serve to draw attention to the many-sided nature of the problems.

[1] Typhus und Trinkwasser (Enteric Fever and Drinking Water). Von Dr. R. J. Beck. München: J. F. Lehmann. 1911. Pp. 56. Price M.3.

COMPLETE TRANSVERSE DESTRUCTION OF THE SPINAL CORD FROM A BULLET WOUND WITHOUT PENETRATION OF THE SPINAL CANAL.

IN the *Maryland Medical Journal* for July Professor R. Winslow has reported two cases of a remarkable injury—complete transverse destruction of the spinal cord from a bullet wound without penetration of the spinal canal. In the first case, a man, aged 24 years, was shot with a pistol, the bullet entering in the left seventh intercostal space just behind the mid-axillary line. He fell to the ground paralysed below the umbilicus. There was severe pain in the upper abdomen and chest. He was taken to hospital, where he was found to be completely paralysed both in sensation and motion up to a line extending round the body 1½ inches under the umbilicus in the middle line in front and curving upward along the upper border of the twelfth rib to the spine. Above the paralysed region was an area of hyperæsthesia 3 inches wide. The paralysis was of the flaccid type. Cremasteric and slight plantar reflexes were present, but the patellar and tendo-Achillis reflexes were absent. He could not pass urine and the bowels acted only after enemata. Kernig's and Babinski's signs were absent. Complete transverse destruction of the cord at the ninth dorsal segment was diagnosed. Irregular exacerbations of temperature supervened, but the general condition was good. A radiogram showed the bullet in or about the body of the eighth dorsal vertebra. Believing that the spinal cord was completely divided Professor Winslow determined to explore the spinal canal and, if justifiable, suture the cord. He removed the laminæ of the seventh, eighth, ninth, and tenth dorsal vertebræ. There was no blood in the canal and the dura was uninjured. The dura was opened widely, permitting the escape of much cerebro-spinal fluid. The cord did not appear to be altered, though subsequently some grumous material escaped from it. There was nothing more to do than to close the wound. Healing took place by first intention and the patient was neither improved nor made worse by the operation. The fever continued, he became emaciated, and bedsores formed, but he was living at the time of the report. In the second case a girl, aged 18 years, was shot in the left side of the neck. The bullet entered about the middle of the sterno-mastoid muscle and passed downward, inward, and backward. She fell forward with paraplegia, paralysis of the left arm, and dilatation of the left pupil. There was complete anæsthesia below the first rib on the left and the third rib on the right side. Retention of urine and fæces ensued. The diaphragm was not affected. Sensation and motion partially returned in the left arm. The reflexes were abolished and bedsores quickly formed. Bullet wound of the second dorsal vertebra, crushing or otherwise injuring the cord, was diagnosed. Death occurred on the twenty-second day. The necropsy showed that the bullet passed behind the brachial plexus, between the anterior and middle scaleni muscles, broke the tip of the transverse process of the seventh cervical vertebra, penetrated the body of the second dorsal, cut a piece from

the first rib, and impinged on, but did not penetrate, the spinal canal. Bloody serum in the canal and spinal meningitis were present. The cord was not penetrated or compressed, but was disintegrated and much reduced in size opposite the position of the bullet. In these cases the injuries appear to be due to concussion of the spinal cord, though it is difficult to understand how complete transverse destruction of the cord can occur without direct impact. However, its occurrence is recognised. During the American Civil War a number of such cases was observed. In his "Manual of Military Surgery," written for the use of surgeons of the Confederate Army, the late Professor J. Chisolm stated that concussion produced by explosion of a shell near the back was a not infrequent injury, and that its symptoms were pain and impairment of motion and sensation in the lower limbs, amounting at times to paralysis. Colonel W. F. Stevenson states in his "Wounds in War" that concussion of the cord without fracture of the spine may be produced by shell fragments or small arm projectiles, and that paralysis below the injury may be absolute, but if secondary changes do not take place in the cord, and hæmorrhage into the spinal canal does not occur, recovery may be rapid and complete. The treatment of complete division of the spinal cord is still a moot question. Physiologists declare that regeneration is impossible once the cord has been divided, but three cases of suture with slight improvement have been recorded by American surgeons. The first surgeon to perform the operation was Dr. Francis T. Stewart of Philadelphia. In a case of bullet wound of the dorsal spine he found the cord completely divided, with an interval of three-quarters of an inch between the ends. He freshened the edges and sutured the cord with three chromicised catgut sutures. The patient, who had been paraplegic, soon showed improvement, and 16 months after the operation could perform various movements with the toes and legs, and had control over the urine and fæces.

ANCIENT MEDICINE AND CLASSICAL WRITERS.

A GREEK scholar, M. Jean Psichari, has been publishing some interesting notes intending to prove indebtedness on the part of Sophocles in the "Philoctetes" to Hippocrates. Some suggestions of this kind concerning the two classics have been made before, but M. Psichari contends that two important passages have escaped notice. These are in verses 752–784 and 823–825, wherein the special medical significance of the words *στάζειν* and *αἱμορραγεῖν* are exemplified. In Hippocrates's works and the Hippocratic corpus these words are clearly differentiated, the first having been used only for slight issue of blood by drops, whilst the second was applied to indicate profuse hæmorrhage. According to Hippocratic theory, slight nasal bleeding was in certain cases considered a serious symptom, whereas profuse bleeding was regarded as providing hope of speedy recovery. It is so in these passages of the "Philoctetes," the increased hæmorrhage being followed by amelioration and sleep. The whole description of the wounding of Philoctetes is Hippocratic: his perspiration when sinking to the earth, his impaired vision shown by his inability to see Neoptolemus close by him, and the difficulty of speech and falling backward of the head are all mentioned by Hippocrates in a passage describing evil results arising from a stoppage of the proper circulation of the blood. Hippocrates would have been 50 or 60 years of age, according to which of the two dates usually assigned to the time of his birth is accepted, by the time of the production of the Philoctetes, and so Sophocles may have read some of the medical author's treatises, or they may have been common views of medical lore of the time, and so appear in the work both of the specialist and the dramatist.

The interest taken in the medical work of the ancient civilisations is certainly growing. Herr Wellman, for example, has recently assigned the authorship of the list of animal remedies in Books 28–30 of Pliny's "Natural History" to Xenocrates of Aphrodisias, a physician who preceded Galen, and was writing about 70 A.D. That Pliny's source was a Greek one is proved by parallels from Serapion, Archigenes, and Pseudo Democritus, and all point to the physician Xenocrates, whose remedies Galen ridiculed. Four extracts from the magic pharmacology of Xenocrates are quoted by Galen and Alexander of Tralles, and all these appear in Pliny. Herr Wellman has discovered references to five works by Xenocrates and has gathered together all likely to be known of him, unless an Egyptian papyrus reveals to us a portion of their lost contents. By the way, a classical author from whose work some curious items concerning the medical and anatomical knowledge of the ancients could be extracted is Melampus, whose work *παλμῶν μαντική* gives the omens derivable from observing the twitchings and throbbings and involuntary movements of various parts of the body. His treatise may be found in the "Scriptores Physiognomiæ, Veteres," and although the manuscript there used is incomplete it provides omens drawn from movements of 57 parts of the head, 83 of the trunk and upper limbs, and 49 parts of the lower limbs. The brow and the eyes are the most important parts in the author's opinion, though he holds that they may be slightly surpassed by the hands and feet in mantic value. Melampus alleges that much of his lore was derived from Egyptian sources, but recent research has detected many similar descriptions of bodily movements, or salissationes, in the "Oneirocritica" of Artemidorus, many of whose omens have been definitely traced by M. Alfred Boissier of Geneva to the augural omens and divinatory cuneiform tablets of Babylonia, where medicine and magic were more closely intermingled than in any other old-world culture. The work of Melampus requires comparing with the cuneiform, mantic and medical literature, and with the medical authors both of Greece and Rome. Salissatio, the Latin term, first occurs in the "De Medicamentis Empiricis" of Marcellinus Empiricus, who prescribes a remedy, "ad cordes pulsum suie salis sationem." This is as definitely a medical word as the Greek equivalent *παλμὸς* of Hippocrates and Aristotle.

THE ETIOLOGY OF BLACKWATER FEVER.

BLACKWATER, or hæmoglobinuric, fever is a malady which exacts a heavy toll in health and life from Europeans who, as officials, planters, missionaries, or in other capacities, have to reside in certain tropical parts of the world. The origin of this disease has hitherto been obscure, and referring to this, Sir Patrick Manson, in the last edition of his well-known "Manual of Tropical Diseases," observes that one of the most important of the still unsolved problems of tropical medicine is that of the etiology of blackwater fever. Efforts have not been wanting, and many earnest attempts have been made by competent investigators to throw light upon this difficult subject. Among the many workers who have laboured to this end may be mentioned Koch, Plehn, Stephens, Christophers, Bentley, Barratt, and Yorke. The main theories put forward up to the present time, in support of which more or less evidence has been adduced, are four in number—viz.: (1) Blackwater fever is a manifestation of an active malarial infection; (2) it is the result of quinine poisoning; (3) it is an induced condition arising from previous repeated attacks of intense malaria lasting over a certain time; and (4) it is caused by a specific organism, which, however, has not yet been isolated or identified. A recent contribution to the discussion of the etiology of this disease comes from the

Panama Canal Zone, where two American medical men, Dr. W. E. Deeks and Dr. W. M. James, physicians to the Ancon Hospital, have made a study of 230 cases of blackwater fever which occurred in that region between January, 1905, and September, 1910.[1] These observers say that their conception of the malady is the same as that of Marchifava and Bignami—namely, that "the hæmoglobinuric attack is a syndrome which is encountered not rarely, especially in hot climates, in the course of a malarial infection." They also agree with the view that instead of classing the disease among the pernicious fevers a special place should be reserved for hæmoglobinuria among the clinical forms of malarial infection. The conditions for investigation of this disease in the Canal Zone appear to be very favourable, a large percentage of the persons attacked being treated in hospital, where their personal histories can be properly inquired into. In a large proportion of the cases there was a history of previous hospital admissions, and of those which could be verified no less than 94·6 per cent. were due to malaria. Moreover, Dr. S. T. Darling, chief of the Board of Health Laboratory in the Canal Zone, under whose direction necropsies were made at Ancon Hospital, reports that he has not yet failed to find evidence of malarial infection, as shown by the presence of pigment or parasites, in each case of hæmoglobinuric fever on which a post-mortem examination was made, when such evidence had been properly sought for. There is no proof that blackwater fever can spread from one country or locality to another like kala-azar, yellow fever, or sleeping sickness. The disease only occurs when the following conditions associated with malaria are present—viz., the presence of a population non-immune to malaria; the prevalence of malaria in such quantity as to produce an almost continuous infection in this population; a large proportion of æstivo-autumnal malaria, because the amount of hæmoglobinuric fever is in direct proportion to the intensity of this variety; neglect of prompt and continued administration of quinine, especially in primary attacks, to persons non-immune against malaria. It has been demonstrated in modern times that the disease is controlled by anti-malarial prophylaxis. There is a personal predisposition in certain individuals to blackwater fever, and this predisposition is enhanced by repeated attacks of malaria. Dr. Deeks and Dr. James believe that under certain conditions the toxins of malarial poison produce hæmolysis; but why some persons are thus acted upon, while others with equal amounts of infection are not, is a problem which still awaits solution. They regard blackwater fever, therefore, as a manifestation of malarial toxicity brought about for the most part by repeated attacks of malaria; it may occur coincidently with an acute malarial paroxysm, it may be excited by any depressing influence, such as overwork or a chill, and it may be induced by the administration of quinine. Quinine alone or malarial infection alone do not cause hæmoglobinuric fever; it is caused by one of these conditions "plus the toxin eventuated during the course of one or more malarial attacks." Syphilis is a predisposing cause owing to its influence in the production of malarial recrudescence. In order to prevent recurring attacks of malaria, with possible subsequent production of blackwater fever, it is necessary to raise the patient's resistance to a maximum and to eradicate the malaria by a thorough course of quinine. The conclusions at which these investigators have arrived do not appear to differ very much from those given by Captain S. R. Christophers, I.M.S., and Dr. C. A. Bentley in their joint report upon blackwater fever after their inquiry on the subject in the Duars at the foot of the Eastern Himalayas in 1907–08. This work we reviewed in the columns of THE LANCET of Feb. 20th, 1909. The evidence so far adduced seems to support the opinion that blackwater fever is a condition intimately associated with malaria and is not a separate disease due to a specific organism.

[1] A Report on Hæmoglobinuric Fever in the Canal Zone: a Study of its Etiology and Treatment, by W. E. Deeks, M.A., M.D., Chief of the Medical Clinic, Ancon Hospital, and W. M. James, M.D., Physician, Ancon Hospital. Published by the Isthmian Canal Commission Press. 1911. Pp. 177.

ANÆMIA AND WANT OF VENTILATION IN THE FRENCH NAVY.

WIRELESS telegraphy in the French Navy involves, as we mentioned last year,[1] unhealthy conditions for the operators on board ships. The offices in which they do their work are deep down in the ship, under an armoured deck, which is built of steel and packed round with felt and asbestos to exclude sound; they are small, under 400 cubic feet in content, and ill-ventilated. Even in the early days it was prophesied that damage to health would result, although none had yet been observed, and latterly it has been reported that the operators were getting thin, losing strength and weight, and becoming anæmic. This anæmia has been investigated by Dr. D'Auber de Peyrelongue, médecin de 1re classe de la marine (staff surgeon), and by him is discussed in the recent numbers of the *Archives de Médecine et Pharmacie Navales*. Unfortunately, he was unable to commence his special observations during the manœuvres, when these men are employed the most busily and for the longest hours, and show most markedly the effects of their special occupation; indeed, he had to wait till after they had returned from their fortnight's manœuvre leave, by which time they had in some degree recovered. Even then he found among them some anæmia, as 26 wireless operators from battleships showed on an average only 4,218,000 red blood corpuscles per mm. cube and 81 per cent. of hæmoglobin, though seven operators from torpedo-boat destroyers (where the offices are on the upper deck in the open air) averaged 4,655,000 red blood corpuscles and 86 per cent. hæmoglobin. Sailors were less anæmic; stokers had fewer corpuscles and less hæmoglobin. Dr. D'Auber de Peyrelongue considers the possible causes of this anæmia, dismisses a theory that it is due to the ozone formed with the sparks (he estimates the maximum of ozone present at 0·002 per cent.), refuses to believe it due to the nitrites simultaneously produced (which he judges to be 0·0005 per cent. at most), declares it is not caused by the vapour of petroleum which is also present, but ascribes it to want of ventilation. He finds that in the wireless room there are few bacteria, but a great deal of zinc oxide dust, that the temperature here is 5° F. higher than in the neighbouring passages, and that the humidity is high; he has measured also large percentages of carbonic acid, 1·55 per cent. the maximum. The carbonic acid content of the air on the mess decks of men-of-war he puts at 0·12 to 0·78 per cent., the outer air containing 0·04 per cent., and though he holds that carbonic acid is not of itself dangerous in air till it reaches a proportion of 10 per cent. he insists that a proportion of 1·5 per cent. evidences very insufficient ventilation—about 50 cubic feet per hour per person. Therefore he pleads for more cubic space for wireless rooms and for better artificial ventilation. Fans have sometimes been lent by officers, and at times the offices have been blown through by jets from the torpedo charging apparatus, but only a permanent installation of a fan will be of any use. Then it is said that if a fan is supplied men will not use it always. That objection is valid; the fan makes a noise, in so small an office a sufficient fan may cause a bitterly cold draught, and unless the intake be wisely placed the fan may bring down smells and dust, and force the men to close the inlets. Dr. D'Auber

[1] THE LANCET, March 12th, 1910.

de Peyrelongue allows all this, but conditions are being improved. Wireless operators no longer suffer as formerly from mercurialism, since the old mercury interruptor has been done away with. Anæmia among them, too, will in time be mastered, and as a matter of fact after two years of discussion one ship has now a ventilating fan installed in the wireless operator's office.

A MEMORANDUM ON CHOLERA.

WE have received a Memorandum on Cholera, for the guidance of Europeans in the remote out-stations of British Malaya, which has been prepared under the directions of the Colonial Office by Mr. John D. Gimlette, Residency Surgeon, Kelantan, Straits Settlements. A large number of copies have been sent to Singapore for distribution by the Government. The memorandum is a four-page sheet of foolscap, and is written in clear, simple language which can easily be understood by any educated person. It begins with a rough sketch of the disease and its mode of spread, with a short and vivid description of the onset and progress of an ordinary case, and brief directions for putting the patient in the way of recovery in the absence of medical aid. Instructions follow for the disinfection and disposal of excreta and contaminated substances, and stress is laid on the virulence of stale cholera stools and discharges. Owing to the deep-rooted Malay prejudice against hospital wards, the treatment and isolation of natives during an outbreak in a purely Malay district are beset with difficulties; but where the native population is mixed it is possible to organise temporary field hospitals or camps on high ground within a mile or two of the main centre and to supplement these with segregation camps for contacts and suspected or doubtful cases. The memorandum proceeds to give general rules for the safeguarding of the public health in infected districts, with special reference to the water-supply and the disposal of the dead and the danger of uncooked foods. It points out that judgment is required in giving directions for the burning of dwelling places and in disturbing Malay burial customs, because the confidence of the native community is easily shaken, and there is always risk of concealment of deaths and of general panic. Ten days' quarantine is recommended, in order to be on the safe side, although this is twice as long as the period laid down by the Venice Convention. The importance of care, courage, and calmness on the part of Europeans in time of epidemic, both for their own sakes and as an example to the natives, is insisted on. Above all things, prejudice must not be aroused in the native mind. Organised hospital treatment being out of the question, the uneducated Malay has to be treated in his own home in the midst of his family, and "personal interest in the patient is almost everything." Personal influence may be of immense value in checking the disease at the beginning of an outbreak. The memorandum concludes with a copy of instructions to natives, couched in the phrases of the East, which have been translated into the Malay tongue and distributed among the head men of infected areas. They are from the pen of Mr. Warren Barnes, and their picturesqueness by no means impairs their simplicity or their practical value.

THE King has been pleased to grant to Dr. Ernest Cotton Fischer, professor of ophthalmology at the School of Medicine, Cairo, the Royal licence to accept and wear the Insignia of the Third Class of the Imperial Ottoman Order of the Medjidieh, which decoration has been conferred upon him by the Khedive of Egypt with the authorisation of the Sultan of Turkey.

THE DRAINING AND SEWERAGE OF LONDON.

MOST of us in London must have noticed during the past few years a number of wooden enclosures in the main thoroughfares in various districts, evidently connected with works of excavation. Yet comparatively few, perhaps, are aware that, deep below the surface, there is in progress one of the largest additions to the existing network of sewers yet undertaken since their formation by the Metropolitan Board of Works. The additions, estimated to cost £3,750,000, are shown on Fig. 1, and include new outfall and intercepting sewers, additional provision for storm water, extra pumping facilities, and so on.

In these strenuous days all are apt to take their surroundings too much as a matter of course. Drains—unless they become a nuisance from some defect—being out of sight, are more than many things likely to be out of mind also. Who associates the outlay of £11,000,000 with the opening of a bath waste? Yet the present system has cost this sum to enable a resident within the County of London to satisfactorily perform this simple act; moreover, it entails that an army of 2000 men shall spend their working lives immured in darkness, often midst noisome fumes and exposed to risks of flood and of fire from petrol gas. About 1000 of these men are employed by the local district councils. The aspect that such work bears in its relation to the public health may well claim our attention.

Hydrographical Features of the London Area.

That we may the better realise the elemental difficulties with which engineers have to grapple, and engineers of the London County Council in a particular degree, it will be well to refer to the hydrographical features of the district to which they have to minister, covering as it does an area of some 120 square miles. Reflection shows that these features are the basis of the whole scheme of drainage, the streams and springs of bygone days having either been converted into our main sewers or been largely responsible for their construction and position. Whitaker's "Geological Survey of England and Wales" includes the results of many borings in and around London. These indicate that a very different condition of things, in times not far remote from the present, must have existed on each side of the river than is now noticeable. (See Note A.) The continual raising of the surface of the ground in the neighbourhood of the city and the nearer suburbs must not be forgotten. Each load of building material ever brought in by barge or cart or rail has aided to raise the level.

At the beginning of the Christian era much of the low-lying land on the south side of the river (now within the jurisdiction of the London County Council) from Abbey Wood to Barnes was under water, and in many places on the north side also. Certainly at a period not very remote the river spread over Plumstead Marshes and parts of North Woolwich, across the Isle of Dogs, some parts of Deptford, and the greater part of Rotherhithe and Bermondsey, over much of Southwark, Walworth, Lambeth, and of Vauxhall, where the Effra River from Dulwich—now an important sewer, with a branch from Nine Elms—emptied into Effra Creek. The Thames spread across to Westminster, round Thorney Island as far back as the ornamental water by the Horse Guards' Parade, where it was joined by a branch of the Tyburn river (see Note B), over Pimlico, and round the backwater of what was then Chelsea Island, formed at the mouth of the Westbourne, now the Ranelagh sewer, and still further back over Fulham and parts of Hammersmith up to Shepherd's Bush, where it met the Stamford Brook, now emptying into Hammersmith Creek. On the opposite side, again, the river covered portions of Battersea and lower Wandsworth, where the still open waters of the Wandle, much polluted, empty into the Thames. The higher ground of the places named would show as islands here and there. Spreading over this lagoon in times of flood, the swollen river, checked in its course, deposited its load of earthy matter from the upper reaches to form the marshes, with their tidal creeks kept open by the many streams that gathered on the uplands. The city by some is believed to have been named by the Celts "Lyn Din," or Lake Town. (See Note C.)

The three low eminences of Ludgate Hill, Cornhill, and Tower Hill, on which the City proper stands, were surrounded

on the north by the great moor, and on the east by the marsh and fen and the estuary of the Lea. This is at Blackwall, between the East India and Victoria Docks. The south and west were bounded by the Thames and the Fleet river (see Note D). The Walbrook, now a sewer, drained the moor, passing through the centre of the City from north to south, entering near the Moorgate and running out into Dowgate Dock. Another stream, the Langbourne, yet another sewer, drained the eastern fen, crossing the City due west to its centre, and there, turning south by where is now St. Mary's Woolnoth, spread into two or three streams or sheres and was then called the Sherebourne, entering the Thames by London Bridge.

In all, there are over 20 streams within the area of the County Council. Nearly all are hidden in sewers, but they have to be taken into serious account. From the surrounding hills the water flowed towards the Thames, or soaked along the clay and gravel, saturating marsh and moorland, or helped to feed the springs whose names, like those connected with the streams, are daily on our tongues. It is this abundance of water that has been, and still is, one of the chief difficulties in dealing with our sewerage. The embankment of the river, at a cost of £2,150,000, helped immensely to overcome this, but it will be noticed, as the progress of draining London is followed, that the conveyance of storm water added to the sewage is one of the chief causes of the enormous outlay. The district has been described as formerly—

> "A land of flood, of marsh, and rills,
> Of wooded slopes and heath-crowned hills."

In addition to the responsibilities within the limits of the County of London there are others. There are certain outlying districts, including Hornsey, Tottenham, and Wood Green, a part of Willesden, Acton, West Ham, and also a part of East Ham, whose natural lines of drainage between the hills require an easement through the County Council's sewers, for which they pay a rental. This on the north side means a provision for an additional 500,000 people. On the south this applies to a part of Beckenham and Penge, while part of Croydon and Norwood are also taken in, making an addition of some 35,000 to the population to be provided for. These cover an area of over 20 square miles, making a total area of upwards of 140 square miles dealt with by the main drainage system.

Historical Account of the Drainage of London.

The subject of drainage has exercised the mind of the British legislature from the time of Henry III., and many have been the enactments passed respecting it, including the well-known Bill of Sewers in the twenty-third year of Henry VIII. in 1531. Especial attention was frequently given to the necessities of the metropolis. These Bills, however, related to surface or land drainage only, for sewers as conduits for water-borne excreta or otherwise polluted liquid are of comparatively recent date. Though a great number of sewers existed in the eighteenth century, they were but more or less enclosed channels of the water-courses taking the natural drainage of the land, and prior to 1815 it was a penal offence to use them for any other purpose. (See Note D.) The older civilisation seems to have furnished examples of which the later ones have been slow to take advantage. Layard's researches in Nineveh, made early in last century, disclosed a complete system of sewers and house drains which were in use there in the year 1200 B.C.

At the beginning of the nineteenth century the population of London is given as 958,863, occupying some 136,000 houses, all drained into cesspools, which had superseded that mediæval abomination, the lay-stalls, or heaps of dung and garbage dumped in corners to be removed when convenient. The death-rate was 41 per 1000. About the year 1810 water-closets of a primitive hopper pattern first came into use. These were connected with a cesspool by a square brick drain, and as it became necessary to provide an outlet for the additional amount of water the overflow was carried into the nearest sewer or water-course in defiance of the existing law, which by 1815 had become a dead letter. On the more general adoption of water-closets it was found convenient to dispense altogether with the intervening cesspool, and to carry the house drain directly into the nearest sewer or water-course. This action was stimulated by the great increase of buildings and cesspools that took place about 1830, these latter having proved both a source of annoyance and disease. The saturated ground was contaminated by the cesspools and middens of the many generations of dwellers within the limited area, and the conditions were ripe for the distribution of any water-borne disease when an epidemic once obtained a foothold. The population in 1831 had risen to 1,424,896, and in this year cholera appeared.

Cholera Epidemics.

Dr. Spencer Thomson, writing in 1852 of the visitations of cholera, says that the first visitation in 1831 was traced back through Europe and Asia to the swampy district round the mouth of the Ganges in 1817. This visitation in 1832 carried off in London alone no less than 15,000. Speaking of the second epidemic, he says that nothing had been done in the interval, and that we were prepared to nourish and foster its mysterious germs in the fœtid and stagnant air of the city, unventilated, undrained, with water half supplied or not supplied at all, or tainted with decomposition of every kind from human excrement upwards, and he adds that such will be the case again. The same views were held by other medical men and laymen who were able to appreciate the conditions. Amongst the tidal ditches of Bermondsey in the great epidemic of 1848-49 187 deaths occurred in a population of 1000. (See Note E.) In 1847 diarrhœa, dysentery, and cholera had been more than usually fatal. In London the deaths from these causes rose from 38 in the first week of July to 188 per week in the middle of August. Typhus fever and scarlet fever were also epidemic. During the epidemic of cholera, 1848-49, the deaths in London in the six weeks from Nov. 21st, 1848, to Jan. 1st, 1849, rose from 28 to 46 per 1000. The proportion of these deaths varied with the elevation and with the area of water-supply, the Lambeth and Vauxhall Companies area having the larger proportion of cases. (See Vital Statistics, W. Farr.)

Abortive Plans.

The condition of the river becoming worse—with cesspool overflows draining into the sewers on the general adoption of water-closets—in 1834 John Martin, the eminent and imaginative painter, proposed a plan for building an embankment and collecting the outfalls of the sewers on each side of the river into intercepting sewers, to discharge in the river below London. He also prepared sketches for a suspended lighthouse on the Goodwins. This, unlike his sewerage scheme, was impracticable, for he believed the sands were but 18 ft. thick, not 80 ft. to the chalk, as they are now known to be. (See Note F.) Martin's plans formed the subject of a Royal Commission, but without result. Meanwhile the evil increased with the population. At this time public and private pumps were numerous, ground water being abundant, cool, and probably sparkling with ammonia, while some of the large water companies drew their supplies from the immediate neighbourhood between Waterloo Bridge and Battersea.

Prior to the creation of the Metropolitan Commissioners of Sewers in 1848 London was administered by no less than eight separate Commissions. The *Times*, commenting in 1855 upon the state of affairs that had existed, says that "within the metropolitan limits the local administration was carried on by no fewer than 300 different bodies, deriving powers from about 250 local Acts independent of general Acts. Such a multiplicity of often ill-informed bodies only added to the existing confusion and trouble, each one doing what seemed good in its own district independently of any difficulties it created for its neighbour." It is deplorable to contemplate the technical ignorance displayed in the early period of divided responsibility in regard to the size, shape, and varying levels of the sewers intended to connect at the district boundaries. Large sewers discharged into small ones, square ones into round ones, and egg-shaped sewers, which had the smaller end down, were connected with others reversed, with the small end up, the whole result being chaotic.

John Martin's proposal was partially adopted at the creation of the Metropolitan Board of Works in 1856. Prior to that his scheme, though neglected at the time, took hold, for in 1854 a Mr. Thomas Wickford, an engineer, further elaborated Martin's plan, carrying the northern outfall sewer to Barking Creek and the southern one to the Greenwich Marshes, with provision for chemically deodorising the sewage before discharging it into the Thames. but, like the original suggestion, nothing came of it,

The fundamental idea was revived on many occasions by engineers appointed to report on the subject, but without immediate results.

Abolition of Cesspools.

Under pressure of public opinion during the cholera epidemic of 1848–49 Parliament combined in one body the several authorities then existing, under the style of the Metropolitan Commissioners of Sewers, passing the Act on Sept. 4th, 1848. Their jurisdiction extended over a radius of 12 miles from St. Paul's, but their powers were restricted. The members of this commission were nominated by the Government. Under the control of this Board all cesspools were abolished, the official number being given as 200,000, with an estimated capacity of 5,250,000 cubic feet, incredible as it now seems with cholera present and water being drawn by the companies between Kew and Waterloo Bridge. The whole of this vast mass of filth was shot, or rather pumped, into the Thames. It was now made compulsory for each house to drain into a sewer, for which purpose a great advance was made by the introduction of pipes in place of brick drains. It was owing to the efforts of this commission to obtain information relative to the position and levels of existing sewers that we owe the large-scale Ordnance Survey.

This commission was replaced the following year by a still more energetic body, who aspired to entirely reorganise the main drainage system, but failed to agree as to the plan to be adopted. Other commissions were created in quick succession, composed of men of undoubted capacity and ability for the duties, but without any practical result. In all, between the years 1847 and 1855 no less than six commissions were appointed, who had before them no less than 116 plans, including in 1854 one costly scheme for draining London on the separate system, introduced by the General Board of Health. This was a self-appointed and apparently well-informed watch committee of citizens, but either from failing to agree amongst themselves or with the Government, or from lack of Parliamentary powers to carry out their plans, they dissolved before they had done more than make proposals and criticisms.

Foul State of the River in 1855.

Meanwhile, in 1855 the population had risen to 1,889,307 on the north side and on the south side to 696,761, making a total of 2,586,068, while the houses had increased to 329,467. The death-rate, notwithstanding the cholera epidemics, had fallen in 1851–60 to 23·7, from 24·8 in the previous decade. An article published in THE LANCET in July, 1855, when matters had reached a climax, may well be quoted as describing the condition of the Thames at this time. It says:—

> The waters of the Thames are swollen with the feculence of the myriads of living beings that dwell upon the banks, and with the waste of every manufacture that is too foul for utilisation. Wheresoever we go, whatsoever we eat or drink within the circle of London we find tainted with the Thames. ..... No one having eyes, nose, or taste, can look upon the Thames and not be convinced that its waters are year by year and day by day getting fouler and more pestilential. ..... The abominations, the corruptions we pour into the Thames are not, as some falsely say, carried away into the sea. The sea rejects the loathsome tribute, and heaves it back again with every flow. Here, in the heart of the doomed city, it accumulates and destroys.

This description is not the least exaggerated. The conditions were aggravated by the retention and consequent deposition of the sewage in the neighbourhood of its discharge, as owing to the necessarily low level of the outfalls it could only escape shortly before low tide, being dammed back at other times in the sewers. Whatever sewage escaped, before the flow checked it, was carried back up stream, and only returned again to be mixed with a still fouler volume. Thus the process was repeated. Large deposits accumulated constantly in the river and the sewers; this fermenting, gave off gases such as are seldom or never met with under present conditions. During periods of heavy rainfall the sewers filled, especially if such storms occurred during high tide. At times they were unable to withstand the pressure and burst, flooding the neighbouring district, or in low-lying places vomited back their contents through the house and street gullies, with the same results. This question of flooding has been a difficulty up to the present time, and is largely responsible for the additional sewers in course of construction.

Sewerage Scheme Carried Out.

On the formation of the Metropolitan Board of Works in 1855 (see Note F), the plans of reform as designed by the late Sir Joseph Bazalgette, their engineer, were well-nigh wrecked, like those of their predecessors, through want of sufficient Parliamentary powers to give them independent action. After long debate over details, with further reports from experts appointed by the Government, additional powers were obtained following a change of Ministry, which enabled the much-delayed sewerage scheme to be taken in hand in the late autumn of 1858, though the work was not completed until 1874. Provision was made by Sir Joseph Bazalgette for a population of 3,450,000, accumulating 108,000,000 gallons of sewage every 24 hours. Added to this, allowance was made for a rainfall of ¼ inch over the more populated area and 1/10 inch over the remaining suburban portion, the south side being very sparsely populated. Even this very limited provision amounted to 286,000,000 gallons, making a grand possible total of 394,000,000 gallons. Any excess over this had to depend upon the storm overflows provided for its removal directly into the river within the metropolitan area. It is evident, if such a provision was then found to be inadequate, how much greater must be our present requirements, with the population increased by more than one-third, and with the greater part of the open land now covered by buildings.

The leading feature of this great undertaking, which up to 1888 had cost £6,824,877, was the interception of the sewage in its passage to the river, and its conveyance to a point well below London, here to be collected in reservoirs sufficiently large to prevent the necessity of discharging it, excepting at ebb tide, when it was turned into the river in its crude state. Embanking the river was also contemplated, though it was not till 1862 that the Board were entrusted with this work. Both the immense outfall reservoirs were completed and in use in 1864, by which date about one-third of the sewage had been diverted from direct communication with the river, the result being quickly perceptible in the improved condition of the river within the metropolitan area, though the death-rate, which between 1857 and 1860 had fallen to 23·7, rose between 1861 and 1870 to 24·4, the cholera epidemic of 1866 intervening. This outbreak in the East of London was considered by Dr. Netten Radcliffe to have arisen from the consumption of water taken from the Lea. In 1865 His Majesty, the late King, then Prince of Wales, formally opened the Crossness pumping station. The low-level sewer on the north side and the Embankment were not, however, fully completed until ten years later—1874.

Account of the Sewerage System.

The system as a whole at that time could be divided into four sections. First, the local sewers, collecting the sewage. These were administered by the various district boards, being under the supervision of the Board of Works to ensure uniformity. The second section comprises the main sewers falling from the higher ground to the river, many of them the converted water-courses; into these the local sewers are connected. The third section consists of the intercepting sewers, three on each side of the river, with certain branches. These great sewers radiate from Old Ford and Abbey Mills (see Fig. 1) on the north and Deptford on the south, spreading like a fan westward into three main branches. On each side one branch, the low-level intercepting sewer, rests on the river bank, the middle-level intercepting sewers are half-way up the rising ground, while the high-level intercepting sewers gradually rise to their highest points at Hampstead on the north and at Sydenham on the south; only in this last case it is called the Effra branch sewer, occupying the course of an old stream. The main trunks falls eastward, being the outfalls. In a measure they all run parallel to the river, and in their course intercept the several main sewers, running at right angles to them. The high-level and mid-level sewers fall by gravitation. The contents of the lower-level sewers have to be raised by pumping into the outfall sewers. The outfall sewers on either side discharged from the first into reservoirs at Barking and Crossness respectively, and these were capable of containing six hours' flow which had to be discharged at each ebb-tide.

There yet remain to consider the storm relief sewers. As far as possible sections of the old main sewers were utilised for this purpose. At certain points a new main sewer is brought side by side with an old one, and the two are formed into one large sewer or chamber for a short distance, when they again separate, the new one going to the outfall

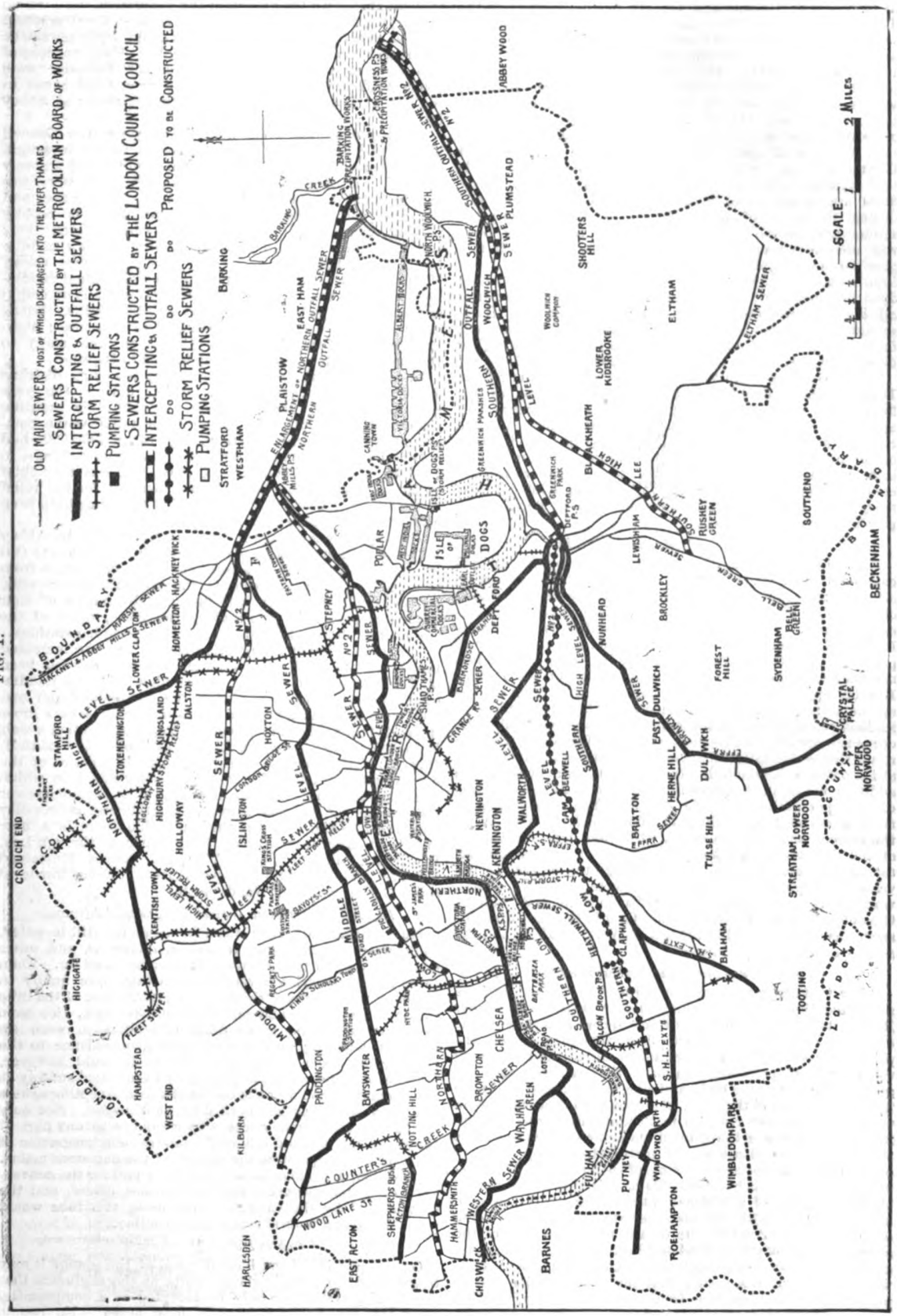


FIG. 1.

Map showing the various sewers and pumping stations in London. Old Ford, so often alluded to in the article, is not on the map; it is at F, just south-east of the spot where the northern high-level and new and old middle-level intercepting sewers meet.

at Crossness or Barking, and the old one delivering into the Thames as before. The chamber thus formed is divided longitudinally by a dwarf wall or weir (see Fig. 2). The storm water, pouring through the new main sewer, cleared it to a large extent of the normal sewage flowing to the outfall, but the rising water soon overflowed the dividing weir and escaped through the old relief sewer directly to the river, these old sewers discharging storm water on either side within the metropolitan area. This practice, which still maintains, was considered by the Royal Commission on Metropolitan Sewage Discharge (1884) the weakest point in the system. The storm overflows are incapable of dealing with exceptional rainfall during the time of high tide. The new intercepting sewers and provision for storm water now being built will doubtless remedy this evil. Ill fares it with any poor flusher caught by one of these sudden spates if far from a manhole. Warned by the roar of the approaching flood he must wade through the rising water to where a life-rail is fixed across the entrance of some branch sewer. Here, should his Davy lamp happen to get extinguished, he clings for dear life in total darkness until the storm abates. (For details of the sewerage system see Note G and Fig. 1.)

Difficulties arose with the old sewers used as storm reliefs. These only being able to discharge into the river at low tide flooded the surrounding district when a storm occurred at any other time. The inadequate provision made for the removal of this water was emphasised by the great increase of building causing the rainfall to find its way more rapidly into the sewers than before. The Board therefore in 1879 embarked upon additional relief works costing £708,000, and these were completed from time to time as floodings of property showed their need.

Construction of Precipitation Works.

Following soon after the opening of the system in 1864 complaints were made by those navigating the river and by others of the condition of the reaches in the neighbourhood of and below the outfall, which led to a protracted Government inquiry. This inquiry was held in 1869 by the late Sir Robert Rawlinson, but the charges were considered not proven. Complaints still continued to be made, and at last the City Corporation as sanitary authority of the Port of London approached the Home Secretary, resulting in the appointment of a Royal Commission in 1882. This Commission in 1884 reported against the existing practice of turning the crude sewage into the river at Barking and Crossness, with the result that precipitation channels were built over a large area at the outfalls, in which the sludge was thrown down by the addition of 1 grain of proto-sulphate of iron and of 4 grains of lime per gallon of crude sewage. The construction of these works at Barking alone in 1887 cost £473,000. After the effluent had been drawn off, which was done at all states of the tide, the sludge was pumped into tank steamers and taken out to sea to be discharged through the bottom of the vessel by means of specially constructed valves. These works were finally completed at Barking in 1889 and at Crossness in 1891 by the London County Council, who had succeeded the Metropolitan Board of Works in 1888; and the same system continues in use.

Additional Sewers and other Works.

After taking over the responsibility the Council in 1889 appointed the late Sir Benjamin Baker with Sir Alexander Binnie, its engineer, to inquire and report generally on the efficiency of the system, particularly regarding sewage disposal, with a view to the prevention of disease and to freeing the river from pollution. In brief they reported that the general features of the main drainage, they thought, had been unalterably fixed in the past; also that a want of capacity in the main sewers had resulted in floodings during heavy rainfall, at which times the diluted sewage was discharged into the river in the heart of the metropolis. They were of opinion that a certain amount of pollution in the river was inevitable at such times. To remedy this they proposed the construction of additional intercepting sewers on each side of the river with various other works, the whole being estimated at £2,250,000. In regard to the disposal of the sewage it was considered advisable to give the existing precipitation works a fair trial before constructing additional works at the outfalls, seeing that the river for the past 50 years had never been free from sewage pollution, but that practically little inconvenience had occurred. It was, however, thought that, with the growth of the population, the question of carrying the outfalls to a point lower down the river would have to be entertained, but in no case could crude sewage be discharged into the river. (See Note H.) Such portions of this work as were considered of urgent necessity were commenced in 1891, consisting of a new relief sewer in the Isle of Dogs, with additional pumping power at Abbey Mills.

Nothing more was done until 1899, when the Council instructed Sir Alexander Binnie to make a further investigation. He reported that large additional works were urgently required at a probable cost of £3,000,000. This work was put in hand in 1901; much of it is now in use, and the rest, with considerable additional work, is rapidly nearing completion. These works were:—North side: two outfall sewers, Old Ford to Barking; a new middle-level sewer, Paddington to Old Ford; low-level sewer, Hammersmith to Abbey Mills; extension of original middle-level sewer to Scrubbs-lane, Willesden (Wood-lane on map); and additional pumping machinery at Abbey Mills. South side: low-level outfall sewer, Deptford to Crossness; high-level sewer, Catford (Rushey Green on the map) to Crossness, and low-level sewer, Battersea to Deptford.

In 1903 the serious flooding of many low-lying districts owing to exceptional rainfall, which during the year amounted to 35 inches, again brought this question prominently forward, and though the relief works commenced in 1879, which were to cost some £708,000, had only just been completed, while others were in progress, in 1904 Mr. Maurice Fitzmaurice, C.M.G., who was then chief engineer, advised the Council to undertake further relief works at an estimated cost of £737,000. Some have been completed and others are still progressing.

The new low-level sewer from Hammersmith to Abbey Mills, and the new middle-level sewer from Kilburn to Old Ford, will relieve the old sewers of the normal output from the rapidly growing suburbs in the West and North-west. In addition to this they will intercept by means of weir chambers, placed at points along the route, much of the storm water flowing towards the riverside pumping stations.

The three original intercepting sewers are now increased to five on the north side—that is, a new sewer has been placed between, and parallel to, the high-level and middle-level sewers, and another between the middle-level and low-level sewers. The main and the storm-relief sewers cross these at right angles, and at certain points of junction a weir is placed to distribute the flow in case of heavy rainfall. (Fig. 2.) There are also, at several points of junction of the new system with the old, chambers constructed in which huge penstocks are fixed to divert the flow from one sewer into another for purposes of repair or otherwise as necessity may arise. (Fig. 3.) On the south side there is a new high-level sewer from Rushey Green (Catford), through Lee, Blackheath, Charlton, and Woolwich, across Plumstead Marshes, to the outfall at Crossness. Another low-level sewer is projected from Wandsworth.

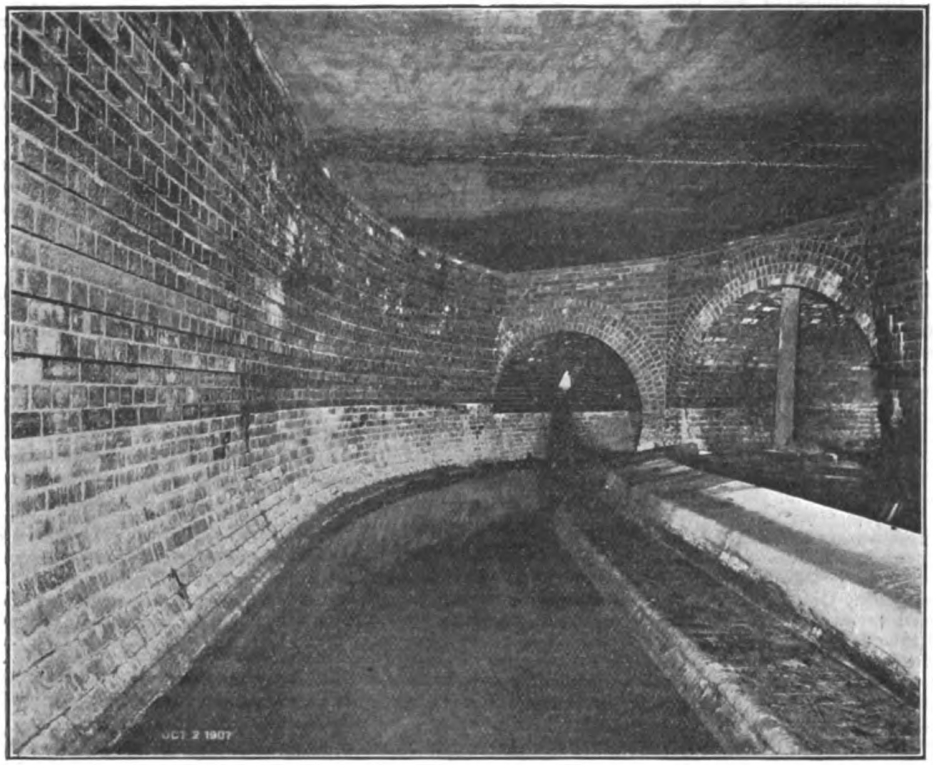
Difficulties Overcome.—Some Suggested Additions.

Much of this work is in districts abounding still in water, while water, electric, gas, telegraph, telephone, and other mains, as well as tube railways, have to be cared for. Then there are the varying levels of parts that have finally to coalesce, while many of the sewers are of the size of the tube railways themselves and of similar construction. To have overcome these and many other difficulties in such an extended and busy area with so little inconvenience to the public calls for our warmest admiration. It would, however, have been a welcome addition if a well-ventilated subway at a convenient depth over the course of the intercepting sewers had been added, as has been done at Aldwych. Not only would this afford ready access by manholes to any part of the sewer, but it would relieve the too frequent congestion of the streets consequent on the repairs of the numerous mains. In addition, a pneumatic tube might be laid for the conveyance of letters between the district post offices, and the rentals paid by the various bodies using this tube would probably yield a modest return on the outlay.

Public Health Questions.

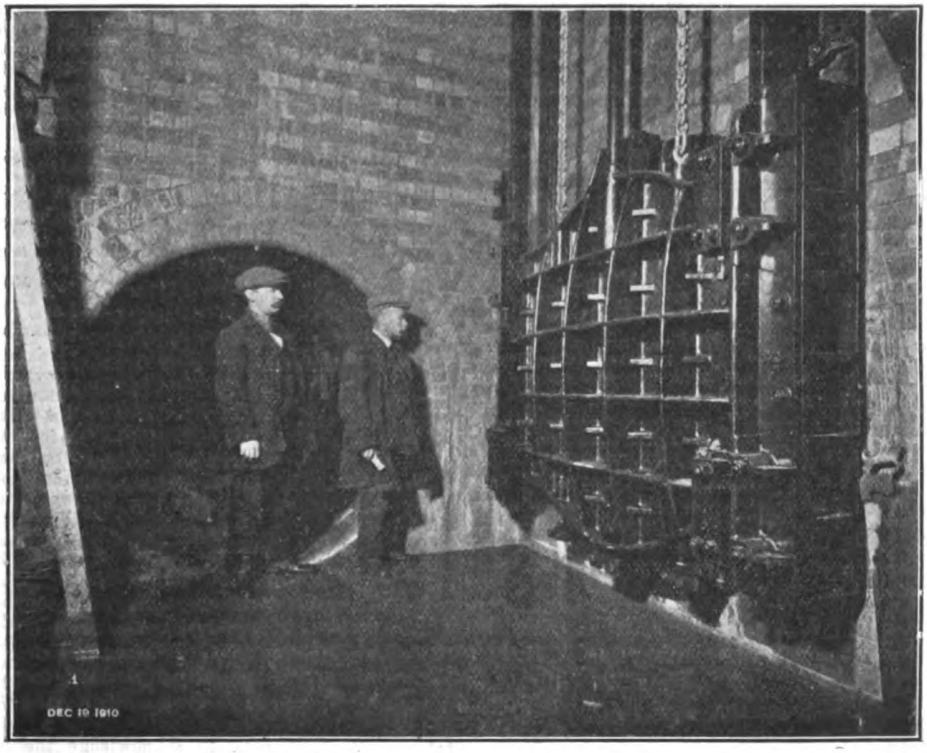
On the question of the final disposal of the sewage it may be gathered from the various reports of the engineers that the existing system can only be accepted as a compromise. With this every thoughtful man must agree. No people

FIG. 2.



Weir chamber in storm relief sewers.

FIG. 3.



Penstocks for diverting flow from one sewer to another.

have a right to pollute the pure waters of any river. Ruskin, in "A Crown of Wild Olives," on noticing this being done at the springs of the Wandle at Carshalton and Beddington, says: "I have never seen anything so ghastly in its inner tragic meaning ..... as the slow stealing of reckless, indolent, animal neglect over the sweetness of that English scene ..... than the insolent defiling of those streams by the human herds that drink of them." Speaking of the inhabitants he adds: "They have neither energy to cart it away nor decency enough to dig it into the ground, thus shed into the stream to diffuse what venom of it will float and melt far away in all places where God meant those waters to bring joy and health." It is certainly a primitive if not a barbarous expedient, though its avoidance is hedged about with difficulties. It may be taken as an axiom, however, that no outrage against any scheme of Nature is for long committed without a penalty.

How far sewage pollution affects the wholesomeness of fish drawn from a source subjected to such influence there has been, until quite recently, no definite record, saving in the case of oysters, mussels, and cockles, but it is well known that many people are unable to eat certain kinds of fish without considerable gastric disturbance. Some kinds of fish are notoriously dirty feeders. Suspicion has within the last few years fallen upon certain kinds of flat-fish—plaice, dabs, and flounders—the young of which frequent the shallow waters of the estuaries, where they feed upon shell-fish. Last year, owing to the character of an outbreak of typhoid fever at Bethnal Green and other of the poorer districts of London, the matter was made the subject of a more than usually exhaustive inquiry by the medical officers of the London County Council. The whole question is fully reported in an official publication by Sir Shirley Murphy, medical officer of health of the London County Council, which includes a report by Dr. W. H. Hamer on certain localised prevalences of typhoid fever in London in 1910. The association of a shortage in supply of small flat-fish at Billingsgate with a drop in the returns of typhoid cases is a significant matter, there being little sale for this fish when the price exceeds ½*d.* per pound. Owing to the hard nature of the food of these fish the usual practice may be omitted of gutting shortly after the catch. These small plaice are principally retailed as fried fish in the poorer districts, and if the cleaning is either omitted altogether by vendors or is carelessly performed the danger is obvious. The suspected supplies are chiefly derived from the northern grounds off the German coast, but they may come from other similar sources. The outbreaks of typhoid fever between 1908 and 1910 unquestionably originated from sewage pollution first affecting the shell-fish, and afterwards the fish and those who had partaken of them.

For many years ideas were prevalent that London sewage held a considerable manurial value, but such have been long since exploded. Its diluted condition and composite character render the many attempts made to secure the valuable nucleus abortive owing to excessive cost. The experiments of 1893 made at Barking for the bacteriological treatment of the sewage, conducted under the superintendence of Sir A. Binnie both by Mr. W. J. Dibden and afterwards by Dr. F. Clowes, are too well known to our readers to need description. (See London County Council Papers, 246, E. Stanford, Charing Cross, 2*d*.)

The fourth report of the Royal Commission on Sewage Disposal in 1904 furnishes the result of a biological examination of the water in the Thames taken from Barking and Crossness down towards the river mouth. The number of B. coli per cubic centimetre of water varied from 100 to 1000. An improvement was first noticeable at Purfleet 5 miles below Crossness, but not till Mucking was reached—15 miles lower down—was this very marked. Here the number varied from 1 to 10, but 5 miles lower down still (by the Chapman light not far from Leigh) it was only 50 per cent. of this amount.

Sewer Ventilation.

The difficult question of ventilation in this maze of sewers still leaves something to be desired. An ideal treatment would be a gradual and progressive purification from the moment the refuse enters the sewers, but the conditions present during its long passage to the outfall are such as to encourage putrefaction than rather to retard it. This is largely owing to the opposition of the public to all attempts made to ventilate the sewers. The absence of such ventilation, on an extended scale, is a principal cause of the nuisance complained of in the neighbourhood of the few existing ventilators. Aerating the stream of sewage by blowing into it jets of compressed or oxidated air at intervals during its passage might be of service. For instance, where the stream was sluggish it might serve the twofold purpose of accelerating the flow and of purifying the sewage at the same time. It would be a disappointment, however, if the effect produced was anything like that experienced at times in the neighbourhood of one of the patent sewage injectors when in action, but such questions are for the engineer.

The conditions of the sewers are to a large extent those of a long septic tank, in that much of the solid constituents, through the action of anaerobic bacteria, becomes liquefied and more easily dealt with at the outfall, though when there it will be more evil-smelling than when it entered the sewer. Mr. W. J. Dibden carried out some experiments at Barking with a view to improving the condition of the sewage by the injection of air with somewhat favourable results. Though the cost incurred did not warrant its application on a large scale, yet it might prove worthy of a trial in the sewers before putrefaction had commenced. Oxidation would arrest this process, but it is possible that the solid portions might be precipitated, in which case the flow, owing to the slight fall in the sewers, would not be sufficient to carry the sediment to the outfall. Against this possibility the idea of the injection of air as an aid to liquefaction of sewage was tried as far back as 1865 by Mr. Mechi at a sewage farm at Tiptree in Essex. The whole of the manure from certain stockyards was collected in an open septic tank holding 80,000 gallons; this was diluted with a definite proportion of water, and air was intermittently forced into the tank. Any kind of offal, including dead animals, was thrown in, and the whole fermenting mass quickly liquefied so that it could be pumped on to the land. The questions arising out of such processes can only be determined by those having practical experience.

Sewage Disposal a Serious Problem.

The principal lesson to be learned from all that has been set out is one of warning from the condition of London and the river in the middle of the last century. What are the conditions to-day? Large quantities of diluted sewage are still, in times of heavy rainfall, discharged into the stream in the heart of London. A combined total of 283,458,950 gallons of chemically treated liquid sewage is on an average turned into the Thames daily at Barking and Crossness, with the addition of from 7000 to 8000 tons of filth (sludge) which is daily carried out to sea. Think of it! The mind fails to form a just estimate of this huge polluted volume. London is, from its size, perforce the worst offender, but all round the coast, in our growing towns, in our health resorts, the same thing goes on, especially in our large cities situated on estuaries. For instance, to name a few:—

Belfast.—Six-sevenths of its crude sewage is discharged into the Lough.
Birkenhead and Liverpool.—The crude sewage is discharged at all states of the tide in the Mersey.
Bristol.—The bulk of the untreated sewage is discharged into the Avon at low tide.
Dublin.—The effluent from the precipitated sewage is turned into Dublin's beautiful bay.
Glasgow.—The effluent of the precipitated sewage is discharged into the Clyde at Dalmarnock and Dalmuir.
Hull.—The crude sewage is pumped into the Humber.
Southampton.—The sewage after partial subsidence is turned into the River Itchen on the ebb-tide.

In these towns alone in 1901 there was an aggregate population of 2,732,091. Surely such a condition of things cannot go on indefinitely, especially in view of the recent evidence of the effect produced by sewage-fed fish. Other fish than those caught in the North Sea form an article of diet. Many parts of our coast have been renowned for the flat-fish frequenting the bays and estuarian waters. Such facts as the foregoing demand serious consideration.

We conclude by expressing our best thanks for the courtesy shown us in this inquiry by the several officers of the London County Council to whom appeal has been made for information. Free use has been made of the published official reports connected with the main drainage of London, especially a very concise digest by the chief engineer, Mr. Maurice Fitzmaurice, while many well-known works of the past have been laid under contribution. Mr. Worth, the district engineer, kindly made arrangements for our representative to inspect the various works of the main drainage system. We also have to acknowledge the use of the

photograph for Fig. 3, lent by one of the contractors, Messrs. Griffiths and Co., of London Wall.

NOTES.

NOTE A. *The continual raising of the level of the ground.*—At the construction of the Victoria Embankment and the District Railway (1862-1870) the late Sir Benjamin Baker, the engineer of the railway, contributed some interesting records which confirm this view. At the City end as much as 24 feet of dust and ruins of ancient buildings were cut through; this varied in depth, but at Westminster it was 18 feet thick. At a depth of 8 to 16 feet below the present surface of the roadway a layer of peat was found 700 feet long and from 2 to 7 feet thick; also at Victoria Station a similar layer 200 feet long and 3 feet thick was met with at a depth of from 9 to 24 feet below the surface.

In making the excavations the gravel was generally found fairly dry to about the depth of the inverts of the adjoining sewers, but below that level large volumes of water existed.

Also in digging for the low-level sewer in the neighbourhood of West Ham peat was met with 12 to 14 feet thick, containing the remains of an ancient forest. This consisted of the stems of trees from 12 to 18 inches thick, having their roots in the clay. Below this layer was the old river gravel. Some leaden coffins were also found in West Ham Marsh.

NOTE B. *The former extent of the Thames at Westminster, &c.*—In an official record dated 1678 Sir C. Wren proposed important improvements in regard to "Ye new Sewers and Ye Backwater in St. Margaret's, Westminster"; and it is also well known that Birdcage Walk in St. James's Park had to be drained before constructing the aviary erected there for Charles II.'s pleasure. Stow, quoting Fitzstephen, refers to this backwater; he mentions a bridge near Whitehall over the Long ditch, "so called for that the same insulateth the City of Westminster." The late Rev. W. J. Loftie thought that "there is little doubt that in the days of Edward the Confessor there was a ford from Westminster to Lambeth." The water spreading over such a large tract of land about this point, it could not have been of any great depth. The ford would occupy the position of the old Horse-ferry; possibly Hungerford indicates a similar crossing.

It would have been much the same on the Lea. The water of the estuary, spreading over parts of Poplar and Canning Town as it did, would have made the lower reach by Stratford and Old Ford far more shallow than at present. This dangerous ford was superseded by the construction of the stone three-span bridge receiving the name of "the Bow" a short distance below the ford, built by Queen Maud, wife of Henry I. It was rebuilt in 1840. There might have been a ford across the Ravensbourne at Deptford, but this place gained its name from the Danes, being the deep fiord in which they anchored their ships when on the watch for plunder.

NOTE C. *Occurrence of floods.*—In 1236 the Thames overflowed, making Woolwich Marshes like a sea. Very many people were drowned, and much damage was done, Westminster Hall being flooded and people going into the Hall in boats. The same occurred in 1242, the river overflowing Lambeth hithe for a space of six miles, drowning many people and destroying houses and property.

Well on into the eighteenth century the Marshes left round Bermondsey, Lambeth, and St. George's Fields were uninhabited, save for the dwellers in a few squalid huts, some built on piles after the manner of lake dwellings.

NOTE D. *The Fleet River.*—The state of the Fleet River, as described by Swift in his "City Shower" about the middle of the eighteenth century, bears testimony to the little regard paid to enactments and to the neglected condition of the streets and water-ways at this time:—

> "Now from all parts the swelling kennels flow,
> To bear their trophies with them as they go;
> . . . .
> And in huge confluence joined at Snowhill ridge
> Fall from the conduit prone to Holborn Bridge;
> Sweepings from butchers' stalls, dung, guts, and blood,
> Drowned puppies, stinking sprats, all drenched in mud,
> Dead cats and turnip tops, come tumbling down the flood."

The more polished if less expressive line of Pope in the Dunciad bears a like testimony.

The Fleet, also called the River of the Wells, had its rise on the eastern side of Hampstead, and as a sewer has been diverted from its original course to drain Camden Town; then making its way through St. Pancras, it was joined farther on by a small branch from Clerkenwell. Reaching the Holborn Valley it absorbed the waters of the old Bourne, having its rise in Middle Row, and then by way of Farringdon-street into the Thames.

The main portion of the river was converted into a sewer in 1732 with the exception of a few sections, including one near the outlet, which last, at the building of Blackfriars-bridge in 1765, was carried out into the river in a culvert 18 feet wide and 12 feet high. The river was at one time navigable for some distance. As a sewer it drained a district covering an area of 14 square miles.

NOTE E. *Bermondsey.*—A description of this district is given by Dickens in "Oliver Twist," under the name of Jacob's Island.

NOTE F. *Details of the sewerage system: The outfall sewers.*—On the *north side* these outfall sewers run from Old Ford to Barking (see map), each measuring 9 feet over. They are connected with the high and mid-level intercepting sewers at Old Ford by gravitation, the contents of the low-level intercepting sewer being pumped into them lower down at Abbey Mills.

On the *north side* the high-level sewer commences at Hampstead, keeping on the higher ground as far as Stamford Hill, falling the whole way by gravitation through Clapton and Hackney to Old Ford; its length to this point, including branches, is 7 miles. It has a sharp fall of 50 feet or more to the mile at its commencement, which diminishes to 4 feet only near its termination, and is laid at a depth of from 20 to 26 feet, draining an area of about 8¼ square miles. It commences as a 4 ft. barrel, and is 9 ft. 6 in. by 12 ft. at its completion.

The mid-level sewer is laid at a depth of from 30 to 40 feet owing to its position on the lower slope of the hill; it measures 4 ft. 6 in. by 3 ft., increasing to a 9 ft. 6 in. by 12 ft. sewer on completion, and with branches it is about 13 miles long. Starting from Kensal Green it passes through Bayswater and along Oxford-street, where, near the British Museum, it receives a branch from Piccadilly; then by way of Old-street and Bethnal Green it goes to Old Ford, with a fall varying from 17½ to 2 feet per mile. It drains an area of 16¾ square miles. This is also a gravitation sewer.

The low-level sewer, with branches, is about 21 miles, increasing from 4 feet by 2 ft. 8 in. to a 10 ft. 3 in. barrel. Commencing at Chiswick, and passing through Walham Green, it receives a branch from Fulham and gravitates to a pumping station at Pimlico, where it is raised 18 feet; it is continued by the side of the river along the Embankment, through Limehouse, receiving branches from Hackney and the Isle of Dogs, Bow, and Bromley; it reaches Abbey Mills pumping station, where it is raised another 36 feet into the northern outfall on its way from Old Ford to Barking. It drains an area of 24 square miles.

On the south side the outfalls measure some 11 feet to 12 feet over-running from Deptford to Crossness. At Deptford the sewage from the low-level sewer is pumped up 18 feet into them. The other intercepting sewers connect to the outfalls by gravitation with the exception of the new sewer from Catford (Rushey Green on map), which runs by gravitation directly to Crossness, where it is lifted into the reservoir for treatment before discharging it into the river.

The sewage on the south side of the Thames is dealt with as follows:—The low-level sewer, 10¼ miles in length, starts in Putney with a 4 ft. by 2 ft. 8 in. sewer; keeping near the river, it passes through Wandsworth and Battersea to Vauxhall. It then runs near the Oval, Kennington, and turns in Camberwell New-road north-east, passing Walworth, near Albany-road, to the Old Kent road, from thence to New Cross and Deptford, where it passes into the pumping station by a 7 ft. by 7 ft. sewer. On its way it is joined by the Bermondsey branch sewer, 2¾ miles in length, the total area drained being 15½ square miles. The size of this branch sewer is a 5 ft. 6 in. barrel, and terminates at the pumping station in a 7 ft. by 7 ft. sewer.

At Deptford the sewage is lifted to a height of 18 feet, and discharges into two outfall sewers, each about 7½ miles long, and 11 feet 6 inches diameter, with a fall of 2 feet per mile. After taking various branch sewers in Greenwich, Woolwich, Plumstead, &c., these sewers discharge at Crossness, where the sewage is lifted some 20 feet by four beams and two vertical engines and pumps into precipitation channels, where it receives chemical treatment. The effluent eventually discharges over a weir into the Thames.

The southern high-level sewer commences at Balham in a 4 ft. by 2 ft. 8 in. sewer, it runs along Balham High-road to Clapham-road, where it increases in size to 4 ft. 6 in. by 3 ft. At this point it is joined by the Putney to Clapham extension sewer, commencing at Roehampton-lane as a 4 ft. 6 in. by 3 ft. sewer, and ending in a 9 ft. by 6 ft. sewer. From Landor-road, at its junction with Clapham-road, the combined sewage from the two branches mentioned above is carried in a 5 ft. barrel sewer through Brixton and Camberwell on to Deptford Broadway, where it ends in a 10 ft. 6 in. by 10 ft. 6 in. sewer. Near this point it discharges into the southern outfall sewer already mentioned. The total length of these sewers is 15¼ miles, and the area drained some 8½ square miles.

In addition to these, there is a high-level sewer from Catford, commencing in a 10 ft. barrel, increasing in size to a 11 ft. 6 in. barrel, which passes along Blackheath, Charlton, Woolwich, Plumstead, and thence in embankment to Crossness, where it discharges direct into the precipitation channels without the necessity of pumping, and is treated along with the other sewage already mentioned.

Other sewers known as the Effra branches, 7¼ miles in length, start from the Crown Hill and the Crystal Palace, and commencing in 4 ft. by 2 ft. 8 in. and 3 ft. by 2 ft. sewers respectively. These branch sewers join a 6 ft. barrel sewer in Park-road, West Dulwich, whence it flows through Dulwich and Peckham to New Cross and Deptford, and joins the southern high level sewer near the Broadway, ending in a 10 ft. 6 in. by 10 ft. 6 in. sewer, being connected into the southern outfall sewer, and thence to Crossness.

The total amount of sewage treated at Crossness annually is about 49,000,000,000 gallons, of which 281,000,000 reaches the reservoirs without pumping. 174,000 gallons of sewage can be raised per minute to a height of 20 feet at this pumping station.

The foregoing includes some of the recent additions:—There are 11 pumping stations, five of which are continuously employed in lifting the sewage from one level to another. The total indicated horse-power of these five stations combined is from 5000 to 6000. They are situated as follows (see map): Western pumping station at Pimlico; Abbey Mills; North Woolwich; Deptford; Crossness. The Western and North Woolwich stations can also be used for pumping storm water directly into the river. In addition to the above there are six other stations for discharging storm water into the river situated as follows (see map): Lots-road, Chelsea; King's Scholar's Pond, North west of Vauxhall Bridge; the Isle of Dogs; Falcon Brook, Vauxhall; Heathwall, Nine Elms; and Shad Thames. With the exception of the Isle of Dogs station, the motive power is gas, the total indicated being 4000 to 5000 horse-power

NOTE H. *Treatment of sewage.*—The London County Council, with a view to future necessities, has secured some 500 or 600 acres of land in the neighbourhood of the outfalls, to enable it to further develop the present system of treatment, though such treatment would do little more than keep pace with the increase of the population and keep matters at their present level. The storm overflows, however, continue to deliver diluted sewage into the river in the heart of London.

WORTHING HOSPITAL.—In spite of the very strong appeal that was made last year for increased subscriptions, the accounts of the Worthing Hospital, it was stated at the annual meeting on August 25th, showed a deficit of £267, or only £9 less than in the previous year. This is considered very disappointing, particularly as with the opening of the new out-patients' department, which is in course of erection, the expenses must necessarily increase. Unless the institution receives a good deal more support the position will become exceedingly serious. The number of in-patients during the year increased to 312 from 278 the year before, and the out-patients showed a slight decrease, this being probably due to the stricter inquiry that was made into the circumstances of applicants.

THE INTERNATIONAL EXHIBITION OF HYGIENE AT DRESDEN.

BY FLEET-SURGEON W. E. HOME, R N.[1]

(*Concluded from p. 548.*)

THE popular section of this exhibition, albeit so extensive and so carefully planned, is after all but a tiny part of the magnificent whole. The other sections and the pavilions of foreign nations were too many and too vast for me to visit them all in the few days I had. And of the exhibits one did admire one can only mention here a very few. A book recounting the recent advances in medicine, and apparently prepared by the Prussian Government for this exhibition, was attached to tables by a chain, and was everywhere in evidence. Each had a thick marker fixed in it, inclining it to open on the smallest provocation at the page which explained the neighbouring exhibits. I had been honoured a year ago by being asked to join the committee of the Naval and Military division, so after looking at the English Section, which owes so much to the indefatigable work of Mr. H. W. and Mrs. Armit, I went over to that division first.

Naval and Military Division.

The exhibits were most interesting and were attractively displayed in large halls. There was a section of the sick bay of a German battleship, very nice and light, the only wood used being the side pieces of the beds; the cabin of a fleet-surgeon, with neat little racks for his service books, and a mosquito-net diaphragm to fit in the window to keep out mosquitoes and prevent malaria. Perhaps the most surprising exhibit here was one in the Army Section indicating that there had been some anxiety about the frequency of tetanus after gunshot wounds. Investigations were made, and it occurred to somebody to examine the felt used as a wad over the explosive in the rifle cartridge; tetanus bacilli were found in it, and thereafter the felt was sterilised before the wads were cut. Could the principles of the Red Cross be more faithfully observed? There is a great Red Cross display, and Russia and Japan also show Red Cross exhibits.

Infectious Diseases.

Here is the pavilion of infectious diseases. It begins with a model of the Institute for the Study of Infectious Diseases in Berlin, with its many stables for beasts and runs for poultry; next there is a bacteriological laboratory equipment, with cages for small animals, various incubators and sterilisers, and apparatus for making culture media and preparing serums. Then follow animal plagues—e.g., swine fever; a picture of a sick pig, the methods of taking blood for examination, protective inoculation and the withdrawal of the protective serum (from the distal end of the caudal appendage), post-mortem appearances, and the microscopic pathology. The insects which convey diseases are displayed—the tiny glossina palpalis and the various ticks, and next, two rooms of bacterial and blood investigations. There is a large picture on the wall showing a man with hay fever; beside it the rye whose pollen is the most virulent cause of the disease (1-30,000th of a grain an effective dose). The swelling and vascular dilatation produced on an arm by subcutaneous injection are also pictured. Here is a collection of the cellular proteins of particular bacilli, shown by the University of Michigan; also the arrangements required for growing the bacilli in the huge quantities necessary. My attention was arrested by a bottle containing a tablespoonful of "the proteid poison from white of egg," which I had hitherto credited with but a doubtful objective existence. In the "immunity" room was an opsonin laboratory, and exhibits explaining the Wassermann reaction and salvarsan, and the applications of the deviation of complement to medico-legal work.

Cholera, plague, typhoid fever, and various other of the epidemic diseases have each a room, with maps to show the distribution and diagrams of the course of individual epidemics; the bacillus, in picture and in many cultures, and the lesions are also shown. I must mention the great collection of rodents, carriers of plague, shown by the Health Institute of Hamburg—rats, ground squirrel, wood rat, tarabagan—repeated to some extent in both the Japanese and English sections. In the small-pox room is a chart to show that of the few cases that did appear in Germany in the last few years, one quarter occurred in visitors from other countries; and another graphically displays that England and Belgium, which do not revaccinate systematically, have not really lost small-pox as have Sweden, Norway, Denmark, and Germany, which do.

Tropical Diseases.

The Section of Tropical Diseases was full of instruction. The malarial parasites, under the microscope and in pictures, in the blood and in course of development in the mosquito, were most copiously illustrated; also the prevention of malaria by curtains, boots, gloves, helmets. The fall of malaria in Italy since the serving out of quinine began is shown, and a similar curve appears in the Hungarian Section. Intestinal parasites and their development are exhibited; also the Leishman-Donovan bodies and sleeping sickness, its clinical and laboratory pathology, its epidemiology, and prevention are demonstrated. The whole exhibit, so complete and so clearly arranged, does credit to its president, Professor Nocht, and his able assistants in the Hamburg School of Tropical Medicine. There are, too, models of hospitals in the tropics, and the very attractive exhibit of the Wellcome Laboratories at Khartoum must on no account be missed.

Statistics of the World.

There is a room in which are displayed the statistics of the world. One could not say how far the figures noted were rigidly comparable, but from the curves which are shown deaths from tuberculosis appear to have decreased in the last 30 years most in Prussia, then in the German Empire, in Denmark, England, and Scotland; little improvement is noted in Ireland, Austria, or France. Here also are diagrams showing from the figures of the latest available census the distribution with regard to age and sex of the populations of many countries. There is a striking increase of the population under 10 in Spain, and a marked upspringing under 20 and under 10 in Bulgaria, Servia, Italy, Japan, and Egypt. This high increase in recent years is less noticeable in England and Scotland, and sadly deficient in South Australia and New Zealand. I am unable to give figures as photographing, sketching, or copying is forbidden in the exhibition. Another rather interesting set of tables mentioned in the catalogue I failed to see. They indicate for various towns the improvement in the vital statistics and the coincident expenditures on their public health services.

Tuberculosis and Venereal Disease.

Near this is the section for the care of the teeth, and beyond that of venereal diseases, with models of barracks which have sometimes been built for prostitutes, as well as a model examination room for them. The effects of venereal disease are shown by charts and wax models, syphilis insontium is also dealt with, how it occurs and may be prevented, and there are quantities of White Cross literature. The public opinion of Germany appears equally concerned in putting down venereal disease and tuberculosis. So great having been Germany's success against small-pox who will deny the possibility of its triumphing over these others also? In a wooden house in the grounds is a "Wandermuseum" of tuberculosis—the travelling caravan exhibits. Their success has been such that Dr. Mollow, in Bulgaria, has copied the idea and used it with great effect against malaria. So far as I can judge, the first principle on which they insist is that where there is no dust there is little danger of infection. The consumptive is taught to be very careful himself, and then they trust to exalt resistance by ensuring good nutrition, by impressing the need for extreme care of the teeth and showing people which are the most nourishing foods. They do not insist, as we do, on the open window, which one German medical officer of health considered impossible because of the rigour of their winter climate.

Other Pavilions.

I can only mention some of the other pavilions: the historical, showing the hygiene of Assyrians, Jews, Romans,

[1] The first section of this article was also written by Fleet-Surgeon Home.

and savage nations, is delightful; housing—warming of buildings and lighting, laundry machinery, furniture, basins and baths of all sorts, ventilation apparatus; rescue arrangements against drowning and accidents in mines; transport, including one of the wagons seen on German railways for carrying living fish in tanks; industrial diseases, with the clothing and exhaust fans employed to prevent anthrax; workmen's insurance, showing in great detail the working of the insurance laws; model dwellings—in this pavilion I was much struck by the compactness and small size of the German cooking stove.

Of the pavilions of other nations the Chinese is the most ornamental; the quantity of lacquer that met the eye had a sumptuous effect, and the beauty of the embroideries, that subserved the great cause of hygiene because they were bed-quilts, was most marked. Here was the famous soya bean with the old sauce, soy, and milk, oil, biscuits, jam, Italian pastes, and a cheese all made out of it. The Russian pavilion is the largest. Here, as in the French pavilion, great stress is laid on vaccination. The Hungarian Section is strong on the care of children. There is in the centre a great relief model of Hungary which shows the trouble they must have with malaria. The colour scheme and patterns of decoration have the beauty and individuality that anyone would expect who had ever been in Budapest. Fuji dominates as one enters the Japanese pavilion. Vaccination again is prominently set forth, and the cause and management of beri-beri. The foods of the nation are shown (1) as grown; (2) as in trade; and (3) as cooked, in little dishes. The work done by children in the schools is shown and there are two beautiful cases of their toys. The Austrian section is large and notable for its many rooms, each displaying the sanitary equipment or curative advantages of a single town. The city of Amsterdam is brave enough to be responsible for a single but admirable pavilion; its best exhibit is in the statistical room of the general exhibition.

The English Section.

The English section is in a different position altogether from the others, which are established by their respective Governments, while ours had to depend on private subscription. It is full of instructive exhibits, which have severely taxed the skill of Mr. Armit to display in the limited space available; but he has succeeded magnificently, and is making the collection all the more useful by his daily lecture at 3 P.M. The invaluable assistance he has had from Mrs. Armit was recognised by Professor Dr. Renk, the second president of the exhibition, when publicly opening the section. Their only other assistant is Miss Wright, who has come to demonstrate the Marylebone Dispensary's exhibit of its methods for the protection of infant life. The section, thanks to the help of the Board of Education, is very strong on the school side. Tropical medicine is particularly well shown, and the case of wax models of cancer, syphilis, and skin diseases, shown by Dr. G. Stopford Taylor and Dr. R. W. McKenna of Liverpool, attracts so much attention that brass rails were being put round it when I left to keep the glass from being always broken by people leaning on it.

In conclusion, I can only add, in case anyone fears that the sight-seeing would be altogether too strenuous, that quiet rooms may be hired, behind the Japanese pavilion, for 1*s.* an hour of an afternoon, and a long chair on the grass for 6*d.*, which things show a deal of consideration on the part of the administration, and give the sightseer an opportunity to reflect peaceably on the wonders seen.

THE BRITISH MEDICAL MAN ABROAD.

(*Concluded from page 657.*)

CANADA.

THE possession of British diplomas and degrees will in many cases entitle the holders to practise in Canada after having obtained a licence from the provincial medical boards and paid certain fees. It is hoped that a general principle of reciprocity will soon prevail.

Ontario.—Registration by the Council of the College of Physicians and Surgeons of Ontario is necessary, and it is optional for the Council to admit to registration all persons who are duly authorised to practise medicine, surgery, and midwifery in the United Kingdom and Ireland upon terms which the Council may deep expedient. The British medical man desiring to practise in Ontario should make full inquiries and ascertain his exact position beforehand, or he may be sadly disappointed.

Quebec.—Practitioners must be licensed and registered by the Provincial Board, which may license without examination holders of medical qualifications from British universities or corporations.

New Brunswick.—Practitioners in New Brunswick must be registered by the Medical Council of the province. A candidate for registration (1) must pass an examination in English, arithmetic, algebra, geometry, Latin, elementary mechanics, elementary chemistry, history, geography, and two of the following languages, Greek, French, and German, unless he has already matriculated at some College in the United Kingdom, Canada, United States of America, or Europe, or holds a first-class teacher's licence from the Board of Education of New Brunswick; (2) he must afterwards have studied for four years and attended some university or college or school of medicine for four sessions of not less than six months each and have attended lectures on anatomy, pharmacy, &c.; (3) he must have attended the general practice of a hospital for 12 months; (4) he must have obtained a degree in the above subjects from a university, college, or school requiring such four years' course of study or must have passed an examination in them before the examiners in New Brunswick; and (5) he must be over 21 years of age. Every candidate for registration as a practitioner, whether or not he has a degree or diploma, must pass an examination. A fee of $10 is required and medical practitioners are liable to an annual fee of from $1.

Nova Scotia.—Registration and a licence from the Provincial Medical Board are required, which admits to the privileges of practice, upon payment of the registration fee, all persons who are duly registered by the General Medical Council of Great Britain. The fee is $30.

Prince Edward Island.—No one can practise medicine, surgery, or midwifery in Prince Edward Island unless registered or licensed by the Council of the Medical Society of Prince Edward Island. The Council admits to the register any person who is duly registered by the General Medical Council of Great Britain.

British Columbia—No person may practise medicine, surgery, or midwifery in British Columbia unless registered by the College of Physicians and Surgeons of British Columbia. The Council admits to the register any person "who shall produce from any college or school of medicine and surgery, requiring a four years' course of study, a diploma of qualification," on proof of identification and on passing an examination as to his competency. The fee for registration appears to be rather indefinite, as we learn that it "must not exceed $100." Licences to practise are issued to women.

Manitoba.—Registration by the Council of the College of Physicians and Surgeons of Manitoba is necessary, and applicants for registration must be members of an incorporated medical body in Canada giving similar privileges to persons incorporated in Manitoba. Application should be made to the Council by British medical men desiring to practise in the province. The fee is $75. Licences to practise are issued to women upon the same terms as men.

Alberta.—Medical practitioners must be registered by the Council of the "College of Physicians and Surgeons of the Province of Alberta." The Council admits to the register anyone who (1) produces a diploma of qualification from any college or school of medicine and surgery which exacts for such diplomas attendance on at least a four years' course of lectures of at least six months each; (2) gives proof of identification; (3) passes before them a satisfactory examination appertaining to the profession of medicine and his fitness and capacity to practise medicine, surgery, and midwifery; and (4) pays $50, and another $50 for registration.

Saskatchewan—No one may practise in Saskatchewan unless registered (fee $50) by the Council of the "College of Physicians and Surgeons of the Province of Saskatchewan." The Council admits to the register anyone who produces a diploma of qualification from any college or school of medicine and surgery recognised by the Council, which requires attendance at a four years' course of lectures, and who passes an examination (fee $50) before the Council.

AUSTRALIA.

Legally qualified British medical men can practise in all parts of Australia. Proof of registration by the General

Medical Council of Great Britain must be submitted to the medical board of the particular State selected when a certificate to practise is granted. The medical man with British qualifications who desires to practise in Australia must communicate with the medical board as soon as he intends to settle, so that he may regularise his position from the beginning.

NEW ZEALAND.

Registration in the colony of New Zealand is obtained by the legally qualified British practitioner on producing his proof of registration by the General Medical Council of Great Britain and on paying a fee of £1 5*s*.

BRITISH SOUTH AFRICA.

The position of the legally qualified British practitioner in South Africa is much the same whichever colony he proposes to practise in.

Cape Colony.—No person may practise in Cape Colony as a medical practitioner without a licence signed by the Colonial Secretary of the province and the recommendation of the Colonial Medical Council is required. The fee for the licence is £5 and women are eligible for the licence. Applications should be made to the Colonial Medical Council at Cape Town.

Natal.—Here also application for a licence to practise medicine in the colony must be made to the Colonial Secretary of the province. The application will be granted upon the approval of the Natal Medical Council.

Southern Rhodesia.—The admission fee for the practice of medicine in Rhodesia is £5, and application for the licence should be made to the Chief Secretary, Salisbury, Rhodesia. It would be well also to write to the Secretary of the British South Africa Company, London Wall, E.C. In *North-Western Rhodesia* the fee is also £5.

Transvaal and the Orange River Colony.—The Transvaal Medical Council (Pretoria) and the Medical and Pharmacy Council of the Orange River Colony, Bloemfontein, grant a licence to practise on payment of £10 and £7 10*s*. respectively. Proof of registration by the General Medical Council of Great Britain must be supplied.

THE COLONIAL MEDICAL SERVICE.

In the following Colonies and Protectorates there are medical departments regulated from the Colonial Office:—British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Northern and Southern Nigeria, East Africa and Uganda Protectorates, Nyasaland, Somaliland, Ceylon, Straits Settlements, the Federated Malay States, Hong-Kong, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius vacancies are almost always filled locally by the appointment of qualified native candidates. As a rule, officers are required on appointment to undergo a three months' course of instruction at the London or Liverpool School of Tropical Medicine, and to obtain a certificate of proficiency before taking up their appointment. It is for the East and West African Colonies and Protectorates that medical officers are chiefly required. The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poor-house, asylum, or other institution, and free attendance on the aged and children. Passage money on first appointment, and leave of absence on half-pay (in addition to the ordinary annual vacation on full-pay, not exceeding three months in two years), are granted only in the cases specified in the Colonial Regulations. Leave on half-pay is not granted before the completion of six years' service, except on the ground of illness or urgent private affairs. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed the rule is that they are not usually entitled to pension. In Ceylon, Straits Settlements, the Federated Malay States, Hong-Kong, and Mauritius all permanent Government servants are called upon to contribute 4 per cent. of their salaries towards the pensions of the widows and orphans of public officers.

British Guiana.—There are 40 appointments. Candidates must have held for at least six months a resident medical appointment in some public institution. Officers are appointed on two years' probation as assistant medical officers, and are paid a salary at the rate of £300 per annum with quarters, without the right to private practice. The permanent staff, to which officers may be appointed at the expiration of the probationary period, include the following appointments: Surgeon-general, £900, with travelling expenses and consulting practice; medical inspector, £800, with travelling expenses and private practice; 3 medical officers at £600 to £700; 10 medical officers at £560 to £600; 11 medical officers at £400 to £500; and 3 medical officers at £400. Medical officers appointed to districts receive travelling allowances varying with the nature of the district. They are also allowed private practice. Medical officers attached to public institutions are, in general, allowed free quarters. A deduction of 4 per cent. is made from their salaries for the payment of the premiums on an insurance of the officer's life for the benefit of his widow or orphans. The Governor has the power to appoint private practitioners to perform the duties of medical districts on temporary agreements, and in recent cases vacant appointments have been filled in this way, but it is not proposed to make such appointments in future.

Jamaica.—The appointments number 54 and are mainly district appointments, private practice being allowed; the salary paid by Government varies from £100 to £250 per annum. Newcomers are in some cases attached for a while to the public hospital in Kingston and given an allowance at the rate of £200 per annum, but not permitted to undertake private practice. Some medical officers receive a varying capitation allowance for attendance on immigrants. All medical officers are obliged to subscribe at the rate of 4 per cent. on their salaries towards the pensions of officers' widows and orphans.

Trinidad and Tobago.—In Trinidad and Tobago there are 35 appointments. Under the terms of the Ordinance regulating the medical service officers are appointed in the first instance on two years' probation as supernumeraries. They receive a salary of £250 per annum, with furnished quarters, and are usually attached to the Government hospital; the salary assigned to the district appointments, to which they are promoted as vacancies occur, is £300, which is increased to £400 and upwards by various allowances for horse, house, or otherwise. These posts carry the right to private practice. After every five years' service an officer is given an additional personal allowance at the rate of £50 per annum. All officers are required to contribute 4 per cent. of their salaries for the provision of widows' and orphans' pensions. In a few districts a system has been introduced by which the work is performed by private practitioners under temporary contracts.

Windward Islands (Grenada, St. Lucia, St. Vincent).—The 22 appointments are, with few exceptions, district appointments with the right to private practice attached; the salaries paid by Government vary from £250 to £400, with allowances in certain cases. The Governor has the power to transfer a medical officer from one island to another at his discretion. The appointments are not pensionable.

Leeward Islands (Antigua, St. Christopher and Nevis, Dominica, Montserrat, Virgin Islands).—The 25 appointments are of the same nature as in the Windward Islands. An officer when first sent out is not appointed to a particular island, but to the service of the Leeward Islands, with a salary of £250, and the Governor decides as to the district which is to be allotted to him. He is liable to be transferred at the Governor's discretion to any medical district in the Leeward Islands, and in certain districts may be required to perform magisterial duties. The medical officers receive fees for successful vaccinations, post-mortem examinations, attendance and giving evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates. They are also, as a rule, allowed private practice.

British Honduras.—There are five medical appointments (besides the principal post of colonial surgeon). One of the medical officers is paid $1458 a year, two are also district commissioners and receive $1944 for the combined posts of medical officer and district commissioner, and one receives $750 a year, and is entitled to private practice, but not to pension. Unless they already possess a diploma of public health, medical officers are liable to be required before they join the colony to undergo a course of instruction at a laboratory of public health or analogous institution. The dollar equals about 4*s*. 2*d*.

Fiji.—The Government medial officers receive a salary of

£300, rising by annual increments of £25 to £500, with free quarters, or a house allowance of £50. In some districts a medical officer is also a magistrate with a combined salary of £500, rising to £600. They are allowed private practice, so far as is consistent with the proper discharge of their duty to the Government, but in most districts the private practice is very small. They are required either to take charge of hospitals or of districts, at the discretion of the authorities. The posts are pensionable. There are at present 15 medical officers, in addition to a chief medical officer (£700 a year, rising to £800).

Ceylon.—The principal civil medical officer receives £1250, rising by annual increments of £50 to £1400 per annum. There are an assistant principal civil medical officer on £750 by annual increments of £50 to £850, and a medical superintendent of lunatic asylum on £600–£800. The registrar of the Medical College, Colombo, and the director of the Bacteriological Institute receives £450–£600; the medical superintendent of the General Hospital, Colombo, £600–£800. There are nine provincial surgeons (Rs. 6000–Rs 8400), 30 first grade medical officers (Rs. 3600–Rs. 5400), 34 second grade (Rs. 1800–Rs. 3000), and 70 third grade (Rs. 1200–Rs. 1800). Private practice is allowed to the subordinate officers, but the colonial surgeons may take only consultation practice. The medical service of Ceylon is mainly recruited from among gentlemen born in the island, but possessing British diplomas.

Straits Settlements.—Two house surgeons in the General Hospital, Singapore, and two in the General Hospital, Penang, on £300, with free quarters. There are about 20 subordinate posts in the medical department, with salaries varying from £300 (rising to £360) to £780 (rising to £900). Some of these posts have free quarters attached, and the holders of some are allowed private practice within limits. The salary of the principal civil medical officer is £1000.

Federated Malay States.—Appointments are graded as follows: Principal medical officer, £1200; senior medical officer, Perak, £900, by annual increments of £20 to £1020; senior medical officer, Selangor, £780, by annual increments of £20 to £900; eight medical officers, Grade I., £600, by £20 annually to £720, with free unfurnished quarters; 13 medical officers, Grade II., £420, by £15 annually to £600, with free unfurnished quarters; house surgeons £300, rising to £420, with free furnished quarters without private practice. A medical officer is attached to the regiment of Malay States Guides, his salary being £360 to £480. The two senior medical officers and the two Grade I. medical officers in charge of Negri Sembilan and Pahang are allowed consulting practice only. Other medical officers are prohibited from private practice except in very special cases where the Resident General is satisfied that, owing to the absence of private practitioners, it is absolutely necessary to allow the Government medical officer to attend to private patients. The posts of medical officer, Grade II., in the Federated Malay States and the corresponding appointments in the Straits Settlements are filled by the promotion of officers who have entered the service as house surgeons.

Hong-Kong.—Principal civil medical officer, £800, rising to £1000. There are five medical officers, two health officers of the Port, and two medical officers of health, with salaries of £480 rising to £720. Most of these appointments are pensionable. Private practice is not allowed, and free quarters are only given in a few cases. The Government bacteriologist receives £480, rising to £720; and his assistant, £360, rising to £420. In Hong-Kong, officers whose salaries are fixed in sterling are paid locally in dollars, at a rate of exchange fixed monthly by the Government and based on the average exchange value of the dollar during the preceding month. When, however, the average exchange value for the month exceeds 2*s.*, sterling salaries are converted at 2*s.* to the dollar. In the Straits Settlements and Federated Malay States sterling salaries are converted at the Government rate of exchange, which is at present 2*s.* 4*d.* to the dollar. Vacancies in Hong-Kong are almost invariably filled by promotion or by transfer from other colonies.

Mauritius.—There is a headquarters staff, consisting of a director (Rs 10,000), an assistant director (Rs. 8000), two sanitary wardens (Rs. 6000), one assistant sanitary warden (Rs. 5000), an assistant medical officer, Port Louis (Rs. 5000) a police and prisons surgeon (Rs 6000), and a health officer (Rs. 5000). There is also a medical inspector attached to the Immigration Department. In the rural districts there are various medical officers, most of whom receive Rs 6000 a year and are not allowed private practice. Free quarters are not given in most cases. The service is mainly recruited locally. Officers in the service of Mauritius are required annually to contribute 2 per cent. of their salaries towards their pensions.

Seychelles.—There are four medical appointments. The Government medical officer receives Rs 4500. The assistant Government medical officers receive Rs. 3000. The holders of these latter appointments have free quarters. Private practice is allowed.

Gibraltar.—There is a surgeon of the Colonial Hospital receiving £275, £55 as medical officer of the civil prison and lunatic asylum, and horse allowance of £42, with private practice. There is also an assistant surgeon with a salary of £300 per annum, but without private practice, who is police surgeon, port surgeon, and surgeon to the Port Office without additional emoluments.

Cyprus.—There is a chief medical officer paid at the rate of £500 per annum, and three district medical officers paid at the rate of £275 per annum, all enjoying private practice (except the chief medical officer, who is allowed consulting practice only) and receiving 2*s.* per diem forage allowance; these are the only medical appointments in the island which are open to English candidates.

St. Helena.—The colonial surgeon at present receives £270 per annum, and £27 horse allowance. Private practice is allowed.

Falkland Islands.—There are two appointments, one of which is paid at the rate of £300 per annum, with £25 as health officer, and the other at the rate of £200 per annum, with £36 as deputy postmaster. The holder of the latter post is required to enter into an agreement with the West Falkland Medical Association, in accordance with which he renders professional services to the members of the association and their families, their employés, and their families, in return for £200 a year and certain payments by the employés. Private practice is allowed to both officers.

East Africa, Uganda, Nyasaland, and Somaliland Protectorates.—The salary of a medical officer on the permanent establishment in these Protectorates is £400 per annum, rising to £500 per annum by annual increments of £20. There are 14 appointments of this rank in the East Africa Protectorate, 11 in Uganda, seven in Nyasaland, and two in Somaliland. In the East Africa Protectorate there are certain special appointments—viz., a medical officer of health at Mombasa (£500 by £20 to £600) and two senior medical officers (£500 by £20 to £600). The salary attached to the appointment of principal medical officer in the East Africa Protectorate and in Uganda is £750 per annum, rising to £850 per annum by annual increments of £25, and £500 per annum, rising to £600 per annum by annual increments of £25, in the case of Nyasaland. Medical officers are permitted to take private practice on the understanding that they give precedence to their official duties. Free passages are provided to the Protectorates. Under the leave regulations officers are entitled to two months' leave on full pay every year, subject to the exigencies of the service, and are allowed to accumulate this leave up to six months—i.e., medical officers of the East Africa, Uganda, and Somaliland Protectorates who remain at their posts without intermission for 20 months are entitled to four months' leave; if for 25 months, to five months' leave; and if for 30 months, to six months' leave, but of such leave the first three months only are on full pay, the remainder being on three-fourths pay. In Nyasaland the amount of leave is the same, but the whole of the accumulated leave is on full pay. A vacancy occurring in the medical staffs of the East African Protectorates is at present usually filled by the absorption of one of the temporary medical officers whose appointments (at a salary of £400 a year) have been created in order to cope with the work in connexion with the extended investigation of sleeping sickness. There are seven of these temporary medical officers in Uganda, two in the East Africa Protectorate, and one in Nyasaland. A candidate for the East Africa and Uganda service will therefore in general be offered one of these temporary appointments in the first instance and will be considered for absorption, if he wishes, when an opportunity occurs, provided that his service is approved. Temporary medical officers are engaged for three years and free passages are provided.

All applicants for medical employment in these colonies must be between the ages of 23 and 35. (In the case of

East Africa, Uganda, Nyasaland, and Somaliland preference will be given to candidates who are over 25 years of age. (In the case of Fiji preference will be given to candidates who are under 30.) Preference will be given to those who have held hospital appointments as house physicians and house surgeons; testimonials to character and professional competence will be required, and every officer before being appointed will be medically examined by one of the consulting physicians of the Colonial Office: Sir Patrick Manson, 21, Queen Anne-street, Cavendish-square, London, W.; Dr. Hawtrey Benson, 57, Fitzwilliam-square, Dublin; and Lieutenant-Colonel J. Arnott, I.M.S., 8, Rothesay-place, Edinburgh.

Applications for medical employment in these colonies from persons in the United Kingdom must be addressed to the Assistant Private Secretary, Colonial Office, Downing-street, S.W.

West African Medical Staff.—The medical services of the West African Colonies and Protectorates, namely, the Gambia, Sierra Leone, the Gold Coast (including Ashanti and the Northern Territories), Southern Nigeria, and Northern Nigeria, form one service under the above name. All the medical officers for the service are selected by the Secretary of State for the Colonies, and are on one list for employment and promotion. Preference will be given to unmarried candidates. Married ones are not excluded, but it should be remembered that passages for wives and children are not provided by the Government, and that houses for them are rarely available. Officers should not take their wives out with them until they have acquired experience of the local conditions, and have obtained the sanction of the Governor.

The grades and emoluments of officers of the staff are as follows:—

Principal Medical Officer.—The principal medical officers receive salary as follows: In Northern Nigeria and Southern Nigeria, £1000 a year, rising by annual increments of £50 to £1200 a year, with a duty allowance [1] at the rate of £200 a year. In the Gold Coast £1000 a year, without increments, but with a duty allowance at the rate of £200 a year. In Sierra Leone, £800 a year, rising by annual increments of £50 to £1000 a year, with a duty allowance at the rate of £160 a year. There is no principal medical officer in the Gambia.

Deputy Principal Medical Officer.—There are three appointments of this grade, in Northern Nigeria, Southern Nigeria, and the Gold Coast respectively. Salary at the rate of £800 a year, rising by annual increments of £25 to £900 a year, is attached to these appointments, together with a duty allowance at the rate of £160 a year.

Senior Sanitary Officer.—There are four appointments of this grade, one each for Northern Nigeria, Southern Nigeria, and the Gold Coast, and one for Sierra Leone and the Gambia. Salary at the rate of £800 a year, rising by annual increments of £25 to £900 a year, is attached to these appointments, together with a duty allowance at the rate of £160 a year.

Provincial Medical Officer.—There are four appointments bearing this title, two in Southern Nigeria and two in the Gold Coast, with salary at the rate of £700 a year, rising by annual increments of £25 to £800 a year, and duty allowance at the rate of £140 a year.

Senior Medical Officer.—There are eleven appointments of this grade, with salary at the rate of £600 a year, rising by annual increments of £25 to £700 a year, and a duty allowance at the rate of £120 a year.

Junior Sanitary Officer.—There are four appointments of this grade, with salary at the rate of £600 a year, rising by annual increments of £25 to £700 a year, and a duty allowance at the rate of £120 a year.

Medical Officer.—The salary attached to this grade is at the rate of £400 a year, rising by annual increments of £20 to £500 a year. There is no duty allowance. Medical officers who have served for five years and are recommended for a higher rate of salary are required to take a special course of study for three months. If they obtain satisfactory certificates at the end of the course they are placed, on completing six years' service, on a scale of salary at the rate of £525 a year, rising by annual increments of £25 to £600 a year.

Every candidate selected for appointment will, unless the Secretary of State decides otherwise, be required to undergo a course of instruction for two or three months either at the London School of Tropical Medicine, Royal Victoria and Albert Docks, E., or at the Liverpool School of Tropical Medicine at University College, Liverpool. The cost of the tuition fees, board, and residence during such instruction, amounting to a maximum of £48 8*s.* 10*d.*, for three months, will be borne by the Government in the case of the London school; at Liverpool the cost of tuition will be borne by the Government, but candidates must make their own arrangements for board and lodging; an allowance of £2 a week will be paid to them monthly in arrear for this purpose.

The ordinary tour of residential service is one year, followed by leave with full pay during the voyages to and from England, and for four or two months clear in England, according as the officer is returning for further service in West Africa or not. Free passages are given to all officers who are granted leave, and free passage is also given on first appointment, subject to the officer signing an agreement under which he is liable to refund its cost if he relinquishes his appointment for any other reason than physical or mental infirmity, or is removed for misconduct, within three years from the date of his arrival.

All officers of the staff, except principal medical officers, deputy principal medical officers, and sanitary officers, are allowed to take private practice, provided that it does not interfere with the faithful and efficient performance of their official duties, but it is within the power of the Governor to withdraw or suspend the privilege in such places and for such periods as he may consider desirable. It should, however, be noted that private practice does not exist at the majority of stations.

[1] A duty allowance is payable to the holder of the appointment to which it is attached only while he is actually performing its duties, and during his absence or incapacity it is paid, at the discretion of the Governor, to the officer performing them for the time being. A duty allowance is not a pensionable emolument.

OPENING OF THE LONDON MEDICAL SCHOOLS.

WINTER SESSION 1911-12.

St. Bartholomew's Hospital.—The opening of the session will be celebrated by the Old Students' Dinner, which will be held in the Great Hall of the Hospital on Oct. 2nd at 6.30 P.M. for 7 P.M., Mr. W. H. H. Jessop in the chair. Tickets (£1 1*s.*) can be obtained from the honorary secretary, Mr. H. J. Waring, 37, Wimpole-street, London, W., or at the door.

Charing Cross Hospital.—The session will be opened on Oct. 2nd, at 3 P.M., by the annual distribution of prizes to the students in the out-patients' hall of the hospital. The dinner of the past and present students will take place on the evening of the same day.

St. George's Hospital.—The session will begin on Oct. 2nd, at 3 P.M., when Dr. Henry A. Miers, F.R.S., Principal of the University of London, will distribute the prizes and deliver the inaugural oration in the large lecture theatre of the Medical School. The subject of the oration will be "Lucidity." The annual dinner will take place at Princes Restaurant on the same evening, at 6.30 P.M. for 7 P.M. The chair will be occupied by Sir Isambard Owen, consulting physician to the hospital.

Guy's Hospital.—The session will open on Oct. 2nd. The opening meeting of the Hospital Medical School will take the form of a conversazione given by the Pupils' Physical Society, to take place at 8.45 P.M.; all present and past Guy's men are cordially invited to be present. The conversazione will be preceded by a dinner at 7.15 P.M. in the college dining-room. Tickets (price 3*s.* 6*d.*) can be obtained from the honorary secretaries of the Physical Society.

King's College Hospital.—The session will open on Oct. 5th, and the annual dinner will be held on Oct. 2nd, at 6.30 for 7 P.M., at the Waldorf Hotel, Aldwych, W.C., when Dr. Arthur Nicholson will preside. The secretary of the dinner committee is Dr. H. J. M. Playfair, 7, Upper Brook-street, London, W.

London Hospital.—The session will begin on Tuesday, Oct. 3rd, when a reception of old students will be held in the College Library at 3 P.M. Dr. James Mackenzie (the lecturer on Cardiac Research to the College) will deliver the "Schorstein" lecture at 4 P.M. The second lecture will be delivered on Wednesday, Oct. 4th, at the same hour; subject: "Auricular Fibrillation." The old students' dinner will be held at the Hotel Cecil on the Tuesday evening at 7.30 P.M.

St. Mary's Hospital.—The winter session will commence on

Oct. 2nd, when the prizes and awards for the sessions 1910–11 will be presented in the Library at 3 P.M. by the Right Hon. Lord Justice Fletcher Moulton. The annual dinner of past and present students will be held at the Grand Hall, Princes Restaurant, on Oct. 3rd, at 7 P.M., Mr. A. T. Norton, C.B., F.R.C.S., consulting surgeon to the hospital, in the chair.

Middlesex Hospital.—The session will open on Oct. 2nd, at 3 P.M., when Dr. Comyns Berkeley will give an introductory address, after which the prizes gained during the previous year will be distributed by Commendatore Marconi, D.Sc. Oxon., LL.D. The annual dinner of the past and present students and their friends will take place at the Trocadéro on the same evening, at 7 o'clock, when Dr. Frank J. Wethered will preside.

St. Thomas's Hospital Medical School.—The session will be opened on Oct. 3rd by the annual prize-giving. The annual dinner will be held on the same evening at the Hotel Cecil, Mr. G. H. Makins in the chair.

University College Hospital.—The session will be opened on Oct. 2nd, at 3.30 P.M., when the Dean's report on the progress of the medical school will be read, the medals and prizes distributed, and an introductory address delivered by Sir William Ramsay, K.C.B., LL.D., Ph.D., P.R.S. The chair will be occupied by Sir John Rose Bradford, K.C.M.G., F.R.S. The annual old students' dinner will be held on Oct. 2nd, at 7 o'clock, at the Imperial Restaurant, when Sir William Allchin will preside.

Westminster Hospital.—The session will begin on Oct. 2nd, and the annual dinner will take place on Oct. 5th, at the Waldorf Hotel. Dr. Dudley W. Carmalt-Jones, 78, Wimpole-street, London, W., is the secretary of the dinner committee.

London (Royal Free Hospital) School of Medicine for Women.—The session will begin on Oct. 2nd, when Sir Henry Butlin, President of the Royal College of Surgeons of England, will deliver the inaugural address at 4 P.M. Mrs. E. Garrett Anderson, M.D., president of the school, will preside.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Paddington.—The decrease of population in most of the metropolitan boroughs, revealed by the preliminary Census report for 1911, will naturally entail considerable revision of mortality statistics. In Paddington the population in 1901 was 143,976. The method adopted in the Public Health Department resulted in an estimate for 1910 of 152,396, or 608 less than the total arrived at by the Registrar-General's formula. The 1911 Census, however, has given a total of 142,576—an actual decrease of 1400 since 1901. On these data the corrected birth-rate for 1910, reckoned at 19·83, becomes 21·18, and the net death-rate 12·58 instead of 11·78. Dr. R. Dudfield gives special prominence to statistics of infantile mortality in the borough. The infant death-rate has continued to fall, and it is claimed that no inconsiderable proportion of the reduction has been due to causes other than the absence of epidemics of infantile diarrhœa during the last five years. This claim is partly based on tabular statements of the mortality of infants in each quarter of the year during the past 20 years, which show that the diminution, though much more conspicuous in the third quarter, is still marked in the first, second, and fourth. In a very instructive appendix on "Mortality of Young Children" Dr. Dudfield has analysed the records of deaths of children under 5 from 1891 to 1910, and presents a series of tables that illustrate the changes which have taken place in the sex and age mortalities during that period, and particularly in the probability of survival of males and females at the end of each year of life up to 5. The latter show that the improvement in the chances of survival has by no means been limited to the infants under one year, but is to be traced also at each succeeding age. Dr. Dudfield refers to the administrative arrangements which result in the general duty of protecting the health of the child passing out of the hands of the sanitary authority, to a large extent, when the child goes to school. In his view "the child should be under the care of the health authority during his school life as he is at other ages, and questions affecting his health should be given the first place, and not be secondary to educational progress as they appear to be now." In regard to notification of births, the report urges an amendment of the law which will do away with the necessity for the present dual system by requiring registration of births by the parent to be effected within five days. Alternatively he would place on the medical officer of health the duty of securing the official registration of the birth after receipt of notification from the parent. Out of 170 deaths certified as due to tuberculosis, 127 were pulmonary. Of these 127 deaths, 57 occurred in institutions, 35 being in Poor-law institutions; 38 of the 127 were deaths of persons who had first been reported to the medical officer of health as suffering from phthisis during the year, while other 37 had been previously so reported. 610 cases of phthisis were brought to the notice of the medical officer of health during 1910 through the tuberculosis dispensary, Poor-law, and other sources; 645 "survivors" were known to the department at the beginning of the year. The action taken in regard to these cases is largely determined by coöperation between the voluntary work of the dispensary and the home visiting by the women inspectors of the council. 1513 persons living in Paddington have presented themselves for treatment or diagnosis at the dispensary during the last two years, of whom 503 were found to present no sign of tuberculosis. The inspection of houses let in lodgings for the purpose of securing cleanliness and compliance with the borough by-laws is an important part of the sanitary work detailed in this report. Out of 17,864 houses in Paddington there are 1320 on the register as let in lodgings. New by-laws were prepared during the year to take advantage of the additional powers in regard to working-class lodgings which have been conferred on local authorities by the Housing and Town Planning Act of 1909. The report has several interesting references to food inspection and adulteration. In connexion with the latter Dr. Dudfield refers to the anomaly that while articles sold as "British wines" may be either non-alcoholic (preserved by salicylates) or alcoholic (17–23 per cent. of proof spirit) no indication of the variety supplied is given to the purchaser. Representations on the subject were made to the Local Government Board.

City of Cardiff.—During Dr. E. Walford's tenure of office the sanitary condition of the city of Cardiff has greatly improved, and its public health organisation has enormously developed. His report for 1910, like its predecessors, illustrates the magnitude and variety of the matters which are dealt with in the sanitary department of a great city. Among these we may refer to the system for the inspection of meat and foods, which is well organised in Cardiff and carried out by a veterinary surgeon and three food inspectors. All the slaughtering in the city is carried on at the municipal slaughter-houses and there is no difficulty in securing an efficient inspection of slaughtered animals. Most of the meat destroyed as unfit for food is surrendered voluntarily by the owner, and the inspectors have directions not to take into court any butcher in possession of tuberculous meat who has notified the fact to the proper authority as soon as he could reasonably be expected to be aware of it. On detection of diseased meat by the inspectors, the butcher or slaughterer is required either to surrender the carcass immediately or to give notice to the chief inspector that he desires the carcass to be detained for further examination. The general system pursued has been arranged between the local butchers' association and the health committee, and the particulars of diseased meat given in the report suggest that it is found satisfactory and efficient in practice. Dr. Walford draws special attention to the condition of bakehouses. He considers that additional powers should be available to require the provision of thermometers, and the fixing of a standard maximum temperature; the provision of flues to ovens and furnaces; a minimum height for the bakehouse; compulsory provision of lavatory accommodation, and of covered metal boxes for bakehouse refuse. These suggestions will receive general endorsement from those who are familiar with the unsatisfactory conditions under which bread is frequently prepared. Rooms have now been fitted at the City Hall for a weekly "consultation of infants," attended by Dr. Elizabeth Elder and the health visitors, which is being very largely used by mothers. Dr. Walford considers that this "consultation" has greatly increased

the practical utility of the Notification of Births Act and the Midwives Act, and that definite medical instruction given on these occasions will yield better results than the alternative of an incomplete system of home visitation by health visitors supplemented by leaflets of instruction. A training centre for midwives has been established at the University College, to which the Cardiff city council and the Glamorgan county council are contributors, with the privilege of nominating women for free studentships. There are 121 certified midwives in Cardiff who probably attended the majority of the 4822 births during 1910. During the year the number of official records of the midwife sending for medical help for the mother was 144—a figure which is small when compared with those in several other large towns. A small outbreak of scarlet fever traceable to a particular milk-supply occurred at the end of the year, but the inquiry made at the suspected farm did not lead to any conclusive evidence being obtained of the occurrence of infection of human origin. It is noteworthy that three deaths occurred among 33 cases, as usually milk-borne scarlet fever exhibits a low fatality rate. Dr. E. Fairfield Thomas contributes to the report a useful account of the municipal tuberculosis dispensary, to which is added a series of charts stated to be good illustrations of the spread of tuberculosis by contact. Without for a moment denying this method of spread, it may be pointed out that by an identical exposition the spread of blue eyes or red hair by contact could be easily shown. And statements, apparently received many years after the event, that infants under two years died from "phthisis" can have very little value as evidence that these children were tuberculous.

County Borough of Swansea.—The misfortune that the introduction of large schemes frequently stops the progress of smaller schemes with the same object has been experienced in Swansea, where a project for the provision of a municipal sanatorium for the treatment of phthisis has been dropped in view of the proposal to erect sanatoriums as part of the Welsh national memorial to King Edward VII.—a project the future of which in its turn is seriously affected by the National Insurance Bill. Dr. D. J. Morgan reports on an additional proposal to provide temporary chalets for phthisical cases, which, however, needed joint action between the town council and the board of guardians and appears to have been found impracticable. Swansea adopted voluntary notification of phthisis during 1910, the fee payable being only 1*s.* From June to the end of the year only 16 notifications were received. Dr. Morgan presses on his authority the need for a bacteriological laboratory under a bacteriologist giving his whole time to the work with suitable assistance, to be established for joint use by the municipal authorities and general hospital, and to be available, without charge, to all local medical practitioners for reports on material submitted, and, if necessary, for original research. Proposals of this kind will probably be made in many places in connexion with the provisions of the National Insurance Bill should these be found to enable local health committees to contribute to bacteriological laboratories, and the officer who has succeeded Dr. Morgan, on the appointment of the latter to the post of medical officer of health of Glamorgan county, may find much advantage from the efforts already made by his predecessor to demonstrate the practical utility of such a proposal. Cerebro-spinal fever was a notifiable disease in Swansea in 1908, when 46 cases were reported. In 1909 there were 12 cases, and in 1910 only 5 cases, all of which, however, were fatal. As another matter of interest may be mentioned Dr. Morgan's efforts to induce the governing bodies of places of divine worship to provide separate drinking-vessels for individual communicants. The single communion cup is now in use in 15 places of worship. In reporting on his work as school medical officer, Dr. Morgan draws attention to observations which have convinced him that the nutrition and physical condition of children derived from the poorest parts of the town are actually better than those of children of the "middle classes" attending the elementary schools. Although they are more dirty, "their bodies are better covered with flesh, their flesh is much firmer, they are more muscular, they are far less anæmic, and they do not exhibit the neurotic or nervous tendency which is so often a characteristic result of our so-called civilisation. ..... The 'middle classes' have to keep up appearances, and this often means a lack of nourishing food."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8250 births and 6473 deaths were registered during the week ending August 19th. The revised estimate of the population in these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had increased from 11·8 to 18·6 per 1000 in the five preceding weeks, further rose to 20·9 per 1000 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 15·0 per 1000, while in London during the same period the mean annual death-rate was 14·4 per 1000. The recorded annual death-rates in the 77 towns during the week under notice ranged from 9·6 in King's Norton, 10·5 in Bournemouth, 11·1 in Hornsey and in Hastings, and 12·4 in Bury, to 29·5 in Rhondda, 31·5 in Wigan, 32·6 in Stoke-on-Trent, and 33·4 in Grimsby and in Bolton. The 6473 deaths from all causes during the week in the 77 towns exceeded the number recorded in the previous week by 703, and without exception was the highest number recorded in any week during the current year. These 6473 deaths from all causes included 2720 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 2103 in the seven preceding weeks, and included no fewer than 2553 from infantile diarrhœa, 59 from measles, 46 from whooping-cough, 37 from diphtheria, 14 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 8·8 per 1000, against 4·3 and 6·8 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 1927 in the seven preceding weeks, further rose in the week under notice to 2553, and caused the highest annual rates of 15·1 in Stoke-on-Trent, 16·9 in Wigan, 17·0 in Bolton, 17·4 in Aston Manor, and 23·7 in Grimsby. The deaths referred to whooping-cough, which had increased from 43 to 60 in the five preceding weeks, fell again during the week to 46; 14 deaths were registered in London and its suburban districts, 4 in Liverpool, and 3 in Newcastle-on-Tyne. The fatal cases of measles numbered 59, and were 9 above the number returned in the previous week; 17 deaths were recorded in London and its suburban districts, 7 in Liverpool, 5 in Manchester, 4 in Nottingham, and 3 each in Stoke-on-Trent, in Bootle, and in Salford. The deaths from diphtheria, which had fallen from 42 to 24 in the three preceding weeks, rose again to 37 in the week under notice, and included 14 in London and its suburban districts, 3 in Coventry, and 2 each in Preston and in Bradford. The 14 deaths referred to scarlet fever were 9 below the number in the preceding week, and included 2 in London and its suburban districts, and 2 each in Birmingham, Coventry, and Liverpool. The deaths attributed to enteric fever, which had been 11, 8, and 19 in the three preceding weeks, fell to 11 during the week under notice, and included 2 in London and its suburban districts. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 982 to 1442 in the 18 preceding weeks, fell again to 1388 on Saturday, August 19th; 149 new cases of this disease were admitted to these hospitals during the week, against 209, 191, and 159 in the three previous weeks. These hospitals also contained at the end of the week 772 cases of diphtheria, 247 of whooping-cough, 231 of measles, and 42 of enteric fever, but not one of small-pox. The 1654 deaths from all causes in London during the week under notice showed an increase of 35 upon the number returned in the previous week, and included 97 which were referred to diseases of the respiratory system, against 91 and 90 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 223 and 162 in the two preceding weeks, rose again to 184 in the week under notice, and 373 inquest cases were registered. The causes of 36, or 0·6 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a

coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Bradford, Hull, Salford, and in 49 other smaller towns; the 36 uncertified causes of death included 6 in Birmingham, 4 in Liverpool, 3 in Manchester, 3 in Sheffield, and 2 each in Stoke-on-Trent and in St. Helens.

In 77 of the largest English towns 8073 births and 6568 deaths were registered during the week ending August 26th. The revised estimate of population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had increased from 11·8 to 20·9 in the six preceding weeks, further rose to 21·2 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 15·8 per 1000, while in London during the same period the death-rate did not exceed 15·0 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 9·8 in Hornsey, 11·3 in Handsworth (Staffs) and in Halifax, and 11·8 in Reading, to 33·9 in St. Helens, 35·2 in Smethwick, 37 9 in Stoke-on-Trent, and 38·2 in Rotherham. The 6568 deaths from all causes in the 77 towns last week exceeded the number recorded in the previous week by 95, and without exception was the highest number recorded in any week during the current year. The 6568 deaths from all causes included 2900 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 2720 in the eight preceding weeks, and included no fewer than 2714 from infantile diarrhœa, 68 from whooping-cough, 54 from measles, 34 from diphtheria, 12 from scarlet fever, and 18 from enteric fever, and not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 9·4 per 1000, against 6·8 and 8·8 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 2553 in the eight preceding weeks, further rose last week to 2714, and caused the highest annual rates of 15·3 in Bolton and in Hull, 15·8 in Rotherham, 17·6 in Burnley, 17·8 in St. Helens, 18·9 in Stoke-on-Trent, and 20·7 in Rhondda. The deaths referred to whooping-cough, which had been 60 and 46 in the two preceding weeks, rose again last week to 68; 14 deaths were registered in London and its suburban districts, 7 in Liverpool, and 7 in Leeds. The fatal cases of measles numbered 54 and were 5 fewer than the number returned in the preceding week; 13 deaths were recorded in London and its suburban districts, 9 in Liverpool, 7 in Manchester, 4 in Bolton, and 3 in Wolverhampton. The deaths from diphtheria, which had increased from 24 to 37 in the two preceding weeks, fell again to 34 last week, and included 15 in London and its suburban districts, 3 each in Liverpool and in Salford, and 2 each in Newcastle-on-Tyne and Bristol. The 12 deaths referred to scarlet fever were 2 below the number in the preceding week. No death was registered in London or in its suburban districts; 2 of the deaths occurred in Birmingham. The deaths attributed to enteric fever, which had been 8, 19, and 11 in the three preceding weeks, rose to 18 last week, and included 5 in London and its suburban towns, and 3 in Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased from 982 to 1388 in the 19 preceding weeks, fell again to 1352 on Saturday last; 132 new cases of this disease were admitted to these hospitals during the week, against 191, 159, and 149 in the three previous weeks. These hospitals also contained at the end of last week 746 cases of diphtheria, 242 of whooping-cough, 194 of measles, and 48 of enteric fever, but not 1 of small-pox. The 1646 deaths from all causes in London last week showed a decrease of 6 from the number returned in the previous week, and included 85 which were referred to diseases of the respiratory system, against 90 and 97 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 162 and 184 in the two preceding weeks, fell to 152 last week, and 326 inquest cases were registered. The causes of 39, or 0·6 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified last week in Bristol, Nottingham, Manchester, Salford, Leeds, Hull, and Newcastle-upon-Tyne, and in 45 other smaller towns. The 39 uncertified causes of death last week included 5 in Liverpool and 4 each in Stoke-on-Trent and in Birmingham.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 816 births and 465 deaths were registered during the week ending August 19th. The annual rate of mortality in these towns, which had been equal to 13·8 and 14·4 in the two preceding weeks, fell to 14·2 in the week under notice, and was 0·2 below the mean rate in these towns during the first seven weeks of the current quarter, and was 6·7 per 1000 below the mean death-rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns in the week ranged from 8·7 in Perth and 9·6 in Aberdeen to 16·4 in Glasgow, and 18·7 in Greenock. The 465 deaths from all causes in the eight towns in the week under notice were 6 fewer than the number in the previous week, and included 99 which were referred to the principal epidemic diseases, against 62 and 99 in the two preceding weeks; of these 99 deaths, 78 resulted from diarrhœa, 6 from measles, 7 from whooping-cough, 3 from diphtheria, 4 from scarlet fever, and 1 from enteric fever. The mean annual death-rate from these epidemic diseases in the eight towns in week under notice was equal to 3·0 per 1000, the mean rate in the same period from the same diseases in the 77 English towns having been 8·8. The deaths from diarrhœa, which had been 33 and 70 in the two preceding weeks, further rose during the week to 78, and included 64 of infants under two years of age; 50 deaths occurred in Glasgow, 8 in Greenock, and 6 in Paisley. The 6 deaths referred to measles were 5 below the number in the previous week, and included 4 in Glasgow and 2 in Leith. The 7 fatal cases of whooping-cough were 2 below the number returned in the preceding week, and included 3 in Glasgow and 2 in Edinburgh. The 3 deaths attributed to diphtheria were 2 fewer than the number referred thereto in the preceding week. Of the 4 deaths from scarlet fever 3 were registered in Glasgow, where also the death from enteric fever occurred. The deaths referred to diseases of the respiratory system in the eight towns, which had been 32 and 39 in the two preceding weeks, fell to 29 during the week under notice, and were 9 below the number in the corresponding week of last year. Of the 465 deaths from all causes in the eight towns 129, or 28 per cent., were recorded in public institutions, and 13 were attributed to different forms of violence. The causes of 4, or 0·9 per cent., of the deaths in the eight towns were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·6 per cent.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 815 births and 509 deaths were registered during the week ending August 26th. The annual rate of mortality in these towns, which had been equal to 14·4 and 14·2 in the two preceding weeks, rose to 15·5 last week, and was 1·0 above the mean rate in these towns during the first eight weeks of the current quarter, but was 0·3 per 1000 below the mean death-rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 10·2 in Perth and 12·4 in Edinburgh to 16·8 in Dundee and 17·3 in Aberdeen. The 509 deaths from all causes in the eight towns last week were 44 above the number in the previous week and included 114 which were referred to the principal epidemic diseases, against 99 in each of the two previous weeks; of these 114 deaths 88 resulted from diarrhœa, 4 from measles, 12 from whooping-cough, 5 from diphtheria, 4 from enteric fever, and 1 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 3·5 per 1000, the mean rate last week from the same diseases in the 77 English towns having been 9·4. The deaths from diarrhœa, which had been 70 and 78 in the two preceding weeks, rose last week to 88, and included 73 of infants under two years of age; 50 deaths occurred in Glasgow, 16 in Dundee, and 8 in Edinburgh. The 4 deaths referred to measles were 2 fewer than the number in the previous week, and included 3 in Glasgow and 1 in Leith. The 12 fatal cases of whooping-cough were 5

above the number returned in the preceding week, and included 6 in Glasgow and 2 in Edinburgh. The 5 deaths attributed to diphtheria were 2 more than the number in the preceding week; all 5 occurred in Glasgow. The 4 deaths from enteric fever showed an increase of 3 over the preceding number, and included 2 in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 39 and 29 in the two preceding weeks, rose to 41 last week, and were 8 below the number in the corresponding week of last year. Of the 509 deaths from all causes in the eight towns last week 157, or 31 per cent., were recorded in public institutions, and 27 were attributed to different forms of violence. The causes of 14, or 2·8 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·6 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 614 births and 427 deaths were registered during the week ending August 19th. The annual rate of mortality in these towns, which had been 16·4, 16·8, and 17·1 in the three preceding weeks, rose to 19·4 per 1000 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 16·8, whilst the mean rate during the same period did not exceed 15·0 per 1000 in the 77 English towns, and was equal to 14·4 in the eight Scotch towns. The annual death-rates in the week under notice was equal to 25·1 in Dublin (against 19·1 in London), 18·8 in Belfast, 12·9 in Cork, 16·6 in Londonderry, 10·9 in Limerick, and 22·8 in Waterford; whilst in the 16 smallest of these Irish towns the mean annual death-rate did not exceed 12·4 per 1000. The 427 deaths from all causes in the 22 Irish towns during the week under notice showed an increase of 50 over the number returned in the previous week, and included 114 which were referred to the principal epidemic diseases, against 83 and 117 in the two preceding weeks; of these 114 deaths, 104 resulted from diarrhœal diseases, 3 from enteric fever, 3 from whooping-cough, 3 from diphtheria, and 1 from measles, but not any from small-pox or scarlet fever. The 114 deaths from the principal epidemic diseases were equal to an annual death-rate of 5·2 per 1000; the mean rate from the same diseases in the 77 English towns was equal to 8·8 per 1000, whilst in the eight Scotch towns it was 3·0. The deaths attributed to diarrhœal diseases, which had been 66 and 106 in the two preceding weeks, fell to 104 in the week under notice and included 93 of infants under two years of age; 56 deaths were registered in Dublin, 30 in Belfast, and 3 each in Cork, Londonderry, Waterford, and Portadown. The 3 deaths from whooping-cough were 1 in excess of the number in the previous week, and were all registered in Dublin. Of the 3 deaths from enteric fever, 2 occurred in Dublin and 1 in Belfast. The deaths from diphtheria occurred in Dublin, Belfast, and Dundalk, and the death from measles occurred in Newtownards. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 20 and 38 in the two preceding weeks, rose during the week under notice to 39. Of the 427 deaths from all causes in the 22 town districts 123, or 29 per cent., occurred in public institutions, and 16 deaths were attributed to different forms of violence. The causes of 14, or 3·3 per cent., of the deaths registered in the 22 towns were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·6 per cent. in the 77 large English towns, and was equal to 0·9 in the eight Scotch towns.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 623 births and 426 deaths were registered during the week ending August 26th. The annual rate of mortality in these towns, which had been 16·8, 17·1, and 19·4 in the three preceding weeks, fell to 19·3 per 1000 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 17·1, whilst the mean rate during the same period was 15·8 per 1000 in the 77 English towns, and was equal to 14·5 in the eight Scotch towns. The annual death-rate last week was equal to 20·1 in Dublin (against 19·0 in London), 29·7 in Belfast, 25·9 in Cork, 25·6 in Londonderry, 17·7 in Limerick, and 32·3 in Waterford; whilst in the 16 smallest of these towns the mean annual death-rate was 21·6 per 1000. The 426 deaths from all causes in the 22 Irish towns showed a decline of 1 from the number returned in the previous week and, included 133 which were referred to the principal epidemic diseases, against 117 and 114 in the two preceding weeks; of these 133 deaths, 112 resulted from diarrhœal diseases, 8 from whooping-cough, 5 from diphtheria, 4 from enteric fever, 3 from measles, and 1 from scarlet fever, but not any from small-pox. These 133 deaths from the principal epidemic diseases were equal to an annual death-rate of 6·1 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 9·4 per 1000, while in the eight Scotch towns it was 3·5. The deaths attributed to diarrhœal diseases, which had been 106 and 104 in the two preceding weeks, rose to 112 last week, and included 93 of infants under two years of age. Forty-eight deaths were registered in Dublin, 33 in Belfast, 7 in Newtownards, 6 in Cork, and 5 in Limerick. The 8 deaths from whooping-cough showed an increase of 5, and included 6 in Dublin. The 5 deaths from diphtheria were 2 more than the preceding number, and were all registered in Dublin. The 4 deaths from enteric fever showed an increase of 1, and included 2 in Belfast. The 3 deaths from measles were 2 more than the number recorded in the preceding week, and included 2 in Newtownards. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 38 and 39 in the two preceding weeks, fell last week to 30. Of the 426 deaths from all causes in the 22 town districts last week, 111, or 24 per cent., occurred in public institutions, and 11 deaths were attributed to different forms of violence. The causes of 16, or 3·8 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified deaths during the week under notice did not exceed 0·6 per cent. in the 77 large English towns, and was equal to 2·8 per cent. in the eight Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon George Oswald Morrell Dickenson has been promoted to the rank of Staff-Surgeon.

The following appointments are announced:—Staff-Surgeons: P. T. Sutcliffe to the *Pembroke*, additional, for the *Falmouth*, and to the *Falmouth*, on commissioning; W. E. Gribbell to the *Defiance*; F. E. Anly to the *Sappho* for voyage out to Port Said and to the *Philomel* on recommissioning. Surgeons: A. D. C. Cummins and G. Carlisle to the *Victory*, additional, for disposal; L. C. Rowan-Robinson to Gibraltar Hospital; A. S. Bradley to the *Excellent*, additional, for the *Grafton*; A. C. W. Newport to the *Royal Arthur*.

ROYAL ARMY MEDICAL CORPS.

The name of Major Langford N. LLoyd, D S.O., is as now described, and not as stated in the Gazette of August 4th, 1911.

Lieutenant-Colonel Samuel R. Wills retires on retired pay (dated August 30th, 1911).

The undermentioned Lieutenants to be Captains (dated August 4th, 1911):—John James, Alfred C. H. Suhr, John E. Ellcome, Gerald J. Keane, Harold H. Blake, Robert M. Dickson, Frank Worthington, Frederick H. Bradley, Alexander L. Stevenson, Bernard Varvill, Joseph W. Houston, Arthur Shepherd, Wilfred J. Dunn, Frank B. Dalgliesh, Malcolm Leckie, Spencer G. Walker, Charles E. L. Harding, Falkiner M. Hewson, Arthur L. Foster, Claude M. Rigby, Alan G. Wells Alexander E. G. Fraser, Walter H S. Burney, Thomas S Eves, Leo Murphy, Arthur H. T. Davis, John S. McCombe, William J. Tobin, Campbell McQueen, and Robert O'Kelly.

The undermentioned to be Lieutenants (on probation) (dated July 28th, 1911):—Basil Hamilton Hebden Spence, William Balfour Laird, Douglas Walter Bruce, Herbert Stuart Blackmore, Edward Spencer Calthrop, Leonard Buckley, Lieutenant Francis Robert Bradley Skrimshire (from the 4th Battalion, The Hampshire Regiment), Richard Trevor Vivian, Thomas Edward Osmond, Ernest Cotton

Deane, Stanley Parkinson Sykes, Robert Davidson, Edward George Huxley Cowen, Edward Bruce Allnutt, James May Elliott, Harry Campbell Todd, Maurice Drummond, Alexander Gillilan Johnson MacIlwaine, William Stewart, Frank Stuart Tamplin, Ivor Robert Hudleston, Arthur Stanley Heale, Arthur John Ormsby Wigmore, Henry James Gordon Wells, and Lieutenant William Leckie Webster (from the Royal Army Medical Corps, Special Reserve).

The under-mentioned Lieutenants (on probation) are seconded under the provisions of Article 300, Royal Warrant for Pay and Promotion, 1909 (dated July 28th, 1911): William B. Laird, Francis R. B. Skrimshire, Thomas E. Osmond, Edward B. Allnutt, and Harry C. Todd.

Lieutenant-Colonel H. L. Battersby has been appointed to medical charge at Ipswich. Lieutenant-Colonel T. W. O'H. Hamilton, C.M.G., is retiring on half-pay. Major J. S. Gallie has joined for duty in the London District. Major T. H. J. C. Goodwin has been granted four months' leave. Captain G. Petit has been granted three months' leave. Captain T. W. Browne and Captain C. Kelly have been granted extensions of leave. Lieutenant-Colonel L. T. M. Nash, commanding the Station Hospital at Karachi, has arrived home on leave of absence. Major F. W. Begbie, surgical specialist at Colchester, has been appointed Commandant of the Royal Army Medical Corps Camp of Instruction at Tidworth Park, Salisbury Plain. Major G. B. Carter, from the Curragh Camp, Kildare, has taken over charge of the Military Hospital at Rangoon. Major H. B. G. Walton has been transferred from Bareilly Cantonment to the Station Hospital at Mussoorie. Captain J. H. Duguid, from Limerick, has taken up duty at Tipperary. Captain H. V. Bagshaw has been transferred from Halifax to Lichfield for duty at the Military Hospital. Captain A. C. Osburn, on completion of duty at the Military Hospital, Bedford, has been posted to Colchester. Captain M. O. Wilson, from Ambala Cantonment, has been appointed to Gharial. Captain E. W. Siberry has arrived home on leave of absence from South Africa. The following officers, on completion of their course of instruction at the Royal Army Medical College, London, have been posted for duty to the Eastern Command: Captains A. E. B. Wood, J. B. Meldon, J. M. M Crawford, C. Bramhall, T. S. Dudding, R. H. MacNicol, W. Waley, M. D. Ahern, and C. J. Wyatt. Lieutenant M. J. Williamson, from Cardiff, has been appointed to Tidworth, Salisbury Plain. Lieutenant O. W. McSheehy has been transferred from Exeter to Devonport. Lieutenant A. T. J. McCreery, on completion of a course of instruction in Indian sanitation at Poona, has been appointed to the Station Hospital at Khandalla. Lieutenant C. H. O'Rorke, from Lucknow, has joined the Station Hospital at Chakrata.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions:—To be Colonel: Lieutenant-Colonel John Smyth (dated June 7th, 1911). To be Captains: Lieutenants James William Barnett and Madan Lal Puri (dated March 8th, 1911).

The King has also approved of the retirement of Lieutenant-Colonel Alexander Milne (dated July 25th, 1911).

Lieutenant-Colonel E. H. Wright has been selected to officiate as Principal of the Madras Medical College. Major T. H. Foulkes has been granted leave of absence home from India for one year. Major E. M. Illington has taken up duty at Waltair as district medical and sanitary officer of Vizagapatam. The services of Major P. P. Atal have been placed at the disposal of His Excellency the Commander-in-Chief by the Government of India. Major R. H. Elliot has arrived home from India on six months' combined leave of absence. Captain W. A. Justice has been appointed to officiate as Sanitary Commissioner of Madras Presidency during the absence on deputation of Lieutenant-Colonel H. Thompson. Captain C. A. F. Hingston has taken up duty as Ophthalmic Surgeon at the Medical College Hospital, Madras, during the absence on leave of Major R. H. Elliot. Captain M. F. Reaney has been appointed a Civil Surgeon of the Second Class by the Government of India. Captain T. G. N. Stokes, sanitary commissioner of the Central Provinces, has been granted six months' leave of absence home from India. The services of Captain F. C. Fraser have been replaced at the disposal of His Excellency the Commander-in-Chief by the Government of India. Captain E. O. Thurston has been appointed to officiate as Professor of Anatomy at the Medical College, Calcutta, and Surgeon to the College Hospital during the absence on leave of Major C. R. Stevens. Captain J. W. H. Babington has been granted general leave for one year. Captain G. S. Husband has been appointed to the medical charge of the 9th Bhopal Infantry at Fyzabad. Captain F. H. Stewart has been appointed to the medical charge of the 74th Punjabis at Lucknow. Captain H. C. Buckley has been detailed for plague duty in the Punjab. Captain C. H. Fielding has been appointed to the medical charge of the 17th Infantry at Manipore. Lieutenant K. K. Mukerji has been permanently transferred to Kohat.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant James O. Hamilton is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Northumbrian Field Ambulance: To be Captains: Lieutenant D. V. Haig (dated July 30th), Lieutenant D. L. Fisher (dated July 31st), and Lieutenant G. G. Farquhar (dated August 1st).

1st Northern General Hospital: Captain W. E. M. Ede resigns his commission (dated August 19th).

Attached to Units other than Medical Units.—Captain G. Wilson to be Major (dated May 1st), and Captain A. Hilton to be Major (dated July 12th).

For Attachment to Units other than Medical Units.—S. L. Brimblecombe to be Lieutenant (dated May 11th), and Lieutenant P. Moxey, from 3rd South Midland Field Ambulance, to be Lieutenant (dated August 21st).

DEATHS IN THE SERVICES.

Deputy Surgeon-General John Jones, formerly of the Indian Medical Service, on August 8th, at his residence, 231, Cromwell-road, London, S.W., aged 81 years. He obtained the qualification of M.R.C.S. Eng. in 1853 and that of M.R.C.P. Lond. in 1860; he also graduated as M.D. at the University of St. Andrews in 1856. He entered the Bengal Medical Service as assistant surgeon on Feb. 20th, 1856, and a year later served during the Indian Mutiny with the Delhi Field Force after the capture of Delhi, taking part in the actions of Narnoul and Karkarala, the capture of Bareilly, the operations in Oude, and the action of Mehndee (medal). He was promoted surgeon on Feb. 20th, 1868; surgeon-major on July 1st, 1873; brigade surgeon on April 1st, 1882; and retired with the rank of deputy surgeon-general on Jan. 17th, 1885. He was for some time surgeon superintendent of the Bengal Presidency General Hospital.

Deputy Surgeon-General Robert Walter Clifton, formerly of the Army Medical Staff, on August 16th, at 15, Auriol-road, West Kensington, London, W., aged 75 years. He became qualified as M.R.C.S. Eng. in 1857, and joined the army as assistant surgeon in September of the same year. In 1860–61 he served in the China war, and was present at the action of Sinho and the capture of the Taku Forts (medal with clasp). He was promoted to surgeon on August 31st, 1872; to surgeon-major on March 1st, 1873; to brigade surgeon on Jan. 2nd, 1883; to deputy surgeon-general on June 21st, 1887; and retired with the rank of deputy surgeon-general on April 11th, 1889. During the latter period of his service he was principal medical officer of the Curragh Brigade.

Lieutenant-Colonel James Scanlan, formerly of the Army Medical Staff, on August 12th, at Kerswell, Broadclyst, Devon, aged 64 years. He studied medicine at the University of Glasgow, where he graduated as M.B. and C.M. in 1868. Entering the army in October of that year he was promoted surgeon in March, 1873, and surgeon-major in October, 1880, retiring with the rank of lieutenant-colonel in October, 1888. He served in India and also in the South African war in 1881.

EXETER CITY ASYLUM.—At the last meeting of the Exeter city council it was reported that for the year ended March 31st last the city asylum had been so managed that its working expenses were all paid, and a sum of £1203 had been placed towards the interest and sinking fund.

Correspondence.

"Audi alteram partem."

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—Since you invite an expression of opinion upon this subject from the profession at large permit me to signify my unqualified endorsement of the sensible and humane position assumed by Dr. Robert Jones in THE LANCET of August 12th, p. 472. The problem of the survival of the unfit is one the gravity of which increases *pari passu* with the advances of civilisation. In more primitive communities the unfit individual tends to be eliminated by the rigour of the conditions of existence; under milder conditions of upbringing he survives to the detriment of the race. From the point of view of physical and moral hardihood there can be little doubt that it is possible to over-civilise and to render the conditions of life too easy.

Since the degenerate has increased and is increasing, how, then, are we to deal with him so as to put some curb upon his further multiplication? Are we to revert to more Spartan conditions of upbringing and so let Nature solve the problem for us? Are we to promote the euthanasia of the hopelessly unfit? Are we so to mutilate them as to render them incapable of propagating their unfitness? Or are we to deal with them as we do at present, trusting that the gradual amelioration of the race may by-and-by reduce their proportion? The full discussion of these problems would require not a letter but a volume. There is much to be said for the first and fourth propositions, and, startling as it may sound, even something for the second, more particularly in the case of the graver forms of idiocy. It is generally recognised that the State has the right to kill, but it is repugnant to every instinct of common justice and humanity to maintain that it has the right to mutilate. The degenerate child did not ask to be born. He is a responsibility and an encumbrance, and may possibly be a danger, but that is no reason why, of a man, we should make him nothing. Life under such conditions is not worth living. Better, far better, a merciful death than so hideous a fate.

Few physiologists will deny that there is an inseparable and deep-rooted connexion between the integrity of the generative functions and those of the mind. Alike mentally and physically, the eunuch is lazy, apathetic, and nerveless. Should he develop activities they are for the most part monstrous and abnormal. He is outside the pale of humanity; and the knowledge that he is not as other men so reacts upon his nature as to render him inhuman. Overpowered by despair and by the ever-present sense of degradation, he is either goaded into madness with Attis, or into fiendish atrocities with the diabolical Agha Muhammad. More commonly, however, he sinks into that condition of nullity which is the doom of the vast majority of his miserable brotherhood. The exceptions of Narses and Origen serve merely to emphasise the rule. And so also with minor degrees of sexual imperfection, such as those produced by vasectomy. I recall the case of a cryptorchid, which may serve as an illustration. The man was not impotent, though his sexual appetite was of the smallest. He belonged to the educated classes, but was one of the most unintellectual of mankind. He shunned general society; was a wretched conversationalist; read nothing except the newspaper; and was seemingly incapable of responding to any mental stimuli higher than those of present need or prospective amusement. He was entirely self-centred, lukewarm in his affections, without consideration for others, neglectful of business, and destitute of any serious object in life.

The madman in his lucid intervals, and the epileptic in the intervals of his epilepsy, may be persons of sound sense, or possibly even of genius. To take the first instances that occur to me, the poet Cowper and Charles and Mary Lamb were all subject to attacks of mental derangement. Once admit the principle of sterilisation for mental disease, and I echo the pertinent query of Dr. Robert Jones, Where are you going to draw the line? Had these persons been sterilised when they first showed signs of insanity they would almost certainly have been reduced to the average level of intelligence, if not beneath it. As none of them married or had issue posterity would have been none the better; but who shall dare to say that literature would have been none the worse? Before mutilating a child or an adolescent at the instance of some crack-brained exponent of eugenics, it might be well to pause and consider whether we are not abolishing a possible genius. It might be well also to remember that England is neither in Switzerland nor in Indiana, and that her system of jurisprudence differs somewhat from that of those enlightened quarters of the globe.

From the point of view of professional ethics I cannot too strongly express my opinion that all operations whose sole aim and object is the production of sterility are utterly indefensible. It is the duty of the practitioner to do that which is best for his patient individually, not that which is worst for his patient, even though it be supposed by some to be for the advantage of the race. The case of the degenerate is pitiable enough already. What right has he to render it more so? It is his duty to remember alike what is due to his patient and to himself. The surgeon is supposed to be a gentleman—a man not merely of humanity but of culture and refinement; and he owes it to himself so to support that character that the public may recognise and respect it. Surely it is nothing short of an insult to propose to such an one that he should degrade himself to the level of a sow-gelder or a Chinese knifer!

I am, Sir, yours faithfully,

BRYAN CHARLES WALLER, M.D., F.R.C.S. Edin.,
Sometime Lecturer on Pathology in the School of Medicine, Edinburgh.

Kirkby Lonsdale, August 15th, 1911.

To the Editor of THE LANCET.

SIR,—In my opinion the letters of Dr. Robert Jones and Dr. C. T. Ewart in THE LANCET of August 12th clearly and ably placed before your readers the two sides of the question whether a father who has an epileptic son has the right to have him sterilised to prevent the propagation of the epileptiform species, and would a surgeon be morally and legally justified in doing the operation. To my mind the question is purely a moral one, and its answer will solely depend upon the moral standard of the father and the surgeon, as well as the moral standard of the State to whose laws they are both subject. Hence, it will no doubt interest your readers if I state my views on the question raised as a father and a physician and surgeon who is a member of the Catholic Church.

If I had an epileptic son I would not as a Catholic have him sterilised to prevent the reproduction of epileptiform offspring. I cannot at present point to any specific Catholic dogma on the subject, for I presume the question has not been discussed by Catholic theologians, but I base my opinion on the spirit and letter of Catholic teaching in the following analogous case. If a Catholic husband should ask his spiritual adviser if he would be justified in using artificial means to prevent conception because his wife was in delicate health and she had been told by her medical attendant that if she had a child it might not survive its birth, or if it did survive it would be an unfit on account of inherited weakness either of disease or of constitution and would not live long, or were its life prolonged it would be a burden to the parents and to the State; the answer of the spiritual adviser would be that under no circumstances whatever, not even to prevent the reproduction of the unfit, was it lawful to use artificial means to prevent the propagation of the human race. The husband and wife would be counselled to practise continence until a healthy child could be born, and if the conditions were such that the birth of a healthy child was an impossibility, then they could either be always continent or bear the burden of a weak offspring, the former course being the one that they would be advised to adopt. From this answer it can be logically argued that a Catholic father would not be morally justified in having his epileptic son sterilised to prevent the reproduction of degenerate species. The course that the Catholic father would adopt would be to use every possible moral means to prevent his epileptic son from marrying, and the father's efforts in this direction would be earnestly and strenuously supported by the son's spiritual adviser. It will also be evident from the answer that a Catholic surgeon would

not be justified in doing the operation, just as no Catholic physician or surgeon is justified in conniving at the practice of race-suicide by telling a patient, who may consult him on the subject, how the thing is done.

From the point of view of a sociologist it seems to me that the crux of the question raised lies in the pertinent query of Dr. Robert Jones: What is to be the limit of sterilisation to prevent the reproduction of the unfit? If we sterilise to prevent the propagation of epilepsy and thus improve the race, why not sterilise to prevent the reproduction of the mentally degenerate and the physically defective, the child with inborn tendencies to all forms of wickedness and criminality, and the child with inherited weakness whether of disease or of constitution? I am afraid that if this were done we would have to sterilise the major part of the human race. Then who would be the final arbiter in sterilisation, and would the father, when it was found that one child was unfit, submit himself to be sterilised to prevent more unfits? It is to be noted that Dr. Ewart, either unwittingly or wittingly, did not allude to this vital point of the limitation of sterilisation.

There is just one other point I would wish to place before your readers, and it was no doubt in the mind of Dr. Robert Jones when he wrote that sterilisation would not possibly improve the moral and mental qualities of the race, for the presence of human weakness was a moral appeal to the strong and served a useful purpose in the moral development of any people. While I am aware of the difference between the prevention by physical means of the birth of the unfit for the good of the race and the destruction of the unfit by the same means and for the same object, there is a dangerously narrow border-line between the two, and transition from the one act to the other would be easy. The arguments that could be urged for the one act could be urged with equal logic and force for the other. To destroy the unfit for the physical good of the race would be a complete reversal of the hands of the clock of civilisation, for it would reduce man to the ethical level of the brute. In my opinion, the lion or the tiger, which seems to have no control over its vicious impulses and devours weaker animals for its own preservation and for the joys and pleasures of its life, would have as high an ethical standard as that of the man who would destroy the unfit for what would be practically his own ease and comfort, and to avoid the practice of self-denial and the control of his inherent selfish and lustful desires for the satiations of a luxurious life. As a matter of fact, the ethics of the brute would be higher than those of man, for in its case the question of self-preservation is involved in its destruction of weaker animals, and the brute does not kill or even acquiesce in the destruction of its own unfit, but, on the contrary, it will guard and protect its young, whether fit or unfit, even to the point of sacrificing its own life.

I cannot conclude without thanking Dr. Robert Jones for his luminous and closely reasoned letter. The value of his opinion lies in the fact that it is the opinion of a distinguished alienist whose sound judgment is based on mature experience in the observation and treatment of mental disease. His opinion on this question is, I am quite sure, the opinion of every Christian father and every Christian physician and surgeon in the civilised world.

I am, Sir, yours faithfully,

THOMAS COLVIN, M.D., M.S. Glasg., J.P.

Glasgow, August 25th, 1911.

THE CURIOUS HISTORY OF A SWALLOWED PIN.

To the Editor of THE LANCET.

SIR,—I was much interested in reading the case related by Dr. Wilfred Balgarnie in THE LANCET of August 19th, p. 500, under the above title. It reminded me of a somewhat similar circumstance which occurred during my practice in Paris towards 1862 or 1863, and I fancy that, being at that time your "own correspondent," I may have referred to it in one of my weekly letters.

In the Rue de Matignon, Faubourg St. Honoré, where I lived, I had a neighbour, a Hungarian, who was a working glover. One morning the glover's wife brought into my consulting-room a screaming baby boy of the crawling age—i.e., 18 months old. The mother, evidently in great anxiety, told me that whenever moved or carried about the poor baby began screaming until again replaced in its cradle. On the child being stripped I found it well nourished and undisturbed by palpation, excepting in one spot a little below the sternum. Here very slight pressure on one particular point induced a fit of screeching which indicated a definite localised trouble. On passing the finger very gently over the tender place I distinctly felt a point which was slightly movable and which was evidently the source of the pain. I at once made a slight incision through the integuments, when to my surprise a little black point protruded from the wound. This, with a pair of small forceps, I drew out very gently, and to my astonishment I withdrew a small bundle of about 2 inches long, quite black, which I ascertained to be a needle wrapped up in thread. This was at once recognised by the mother as a glover's needle which the child must have swallowed while crawling about the floor, and which had worked its way outwards through the coats of the stomach. The operation over, the child fell fast asleep and recovered in two or three days after parting with this dangerous encumbrance. My wife, who had taken possession of the child during the operation, perfectly remembers this incident which occurred about 50 years ago.

I am, Sir, yours faithfully,

Worthing, August 20th, 1911. I. D. CHEPMELL.

*** We do not see any reference to the episode in Dr. Chepmell's interesting letters while he was our valued correspondent in Paris. Dr. Balgarnie writes that the scar at the great curvature of the stomach was situated 1½ in. from the pylorus, and not 4½ in., as printed.—ED. L.

SOME POINTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Whilst enclosing a copy of my annual report, I should like to observe that the perplexities connected with the treatment of pulmonary tuberculosis seem to increase as the years roll on. Personally, I am inclined to think that there are so many differences of opinion amongst authorities because a large number of persons who treat this disease take no precautions to discover whether the disease is active or not. The only method of which I am aware for ascertaining whether the disease is still active or not is to take the rectal temperature before rising in the morning, and if it is not as low as 36·5° C. (97·7° F.) assume that the morbid processes are still progressing; in arriving at an estimate of the patient's condition very little attention should be given to the patient's remarks about improvement or otherwise, for, as a rule, when the disease is easily curable the subjective symptoms are not marked. From a careful study of the previous histories of these cases I have been forced to the conclusion that chronic fibroid phthisis is the product of exercise taken at a period when the temperature is slightly raised—that is to say, when the products of the tubercle bacillus are of low virulence. If the fever be greater than this, the subjective symptoms will also be considerable, and night sweats will usually be occurring; if exercise be persisted in, a chronic fibroid phthisis will not, as a rule, be produced, but a large amount of caseous material; these cases may either proceed to a galloping consumption, or the disease may become arrested, leaving the patient in a crippled condition, the amount of crippling being directly proportionate to the antecedent damage. Fibroid destruction of a lung, following upon pleurisy, would seem to be due to an irritant of low virulence acting over a long period. Now if it be granted that all so-called idiopathic pleurisies are tubercular, it is not fair to assume that all cases of pleurisy will develop into what is generally understood by the term pulmonary tuberculosis. I suppose a very large number of these cases go on to complete and natural cure. I would suggest, however, in cases of pleurisy of this kind, that the patients be kept in bed until their temperatures reach 36·5° C. (97·7° F.) before rising in the morning. This method would, I am sure, prevent the development of a large number of serious cases. Of course in the event of such treatment not being successful, recourse might then be made to tuberculin

or sanatorium treatment—or both—as the judgment of the practitioner might decide.

Compared with the temperature taken before rising, temperatures taken at other times in the day are comparatively unimportant. The first thing to be done, therefore, in treating a case suspected to be suffering from pulmonary tuberculosis, is to put the patient in bed and then find out the rectal temperature before rising in the morning. In April, 1909, I published an article on "Graduated Rest in the Treatment of Pulmonary Tuberculosis," in which I advocated the strict resting and seclusion of all early cases. I was not then referring to what are ordinarily understood by febrile cases, which have been rested in all properly conducted sanatoriums since the days of Dettweiler. The treatment by means of the production of an artificial pneumothorax all tends in the same direction, though I imagine that when possible it will be preferable for patients to lie quietly in bed, apart from their relatives, for a week or ten days, to, at some later period, going to the risk and trouble of an artificial pneumothorax, which may have to be kept in operation for a period of years.

I am afraid that at the present time there is a good deal of indiscriminate administration of tuberculin, and this is often done without taking a rectal temperature before rising in the morning. If such a temperature were taken the variations noted would surprise a good many who administer tuberculin without this precaution. I may say, in passing, that after very considerable experience I have never known a case of pulmonary tuberculosis do really well in which the rectal temperature before rising did not approximate to 36·5° C. (97·7° F.). Of course, I am quite aware that a considerable number of patients who have a temperature of this kind are by no means cured; these are, as a rule, chronic cases in which the disease has existed for some considerable time (often for years).

Furthermore, there is always some disadvantage in treating patients with the hair of the dog that bit them, insomuch that if benefit follows reactions after suitable doses, how long are we to continue giving these patients a little more of the disease, and how far are we justified in working up the disease to fresh activity? Latterly I have been administering tuberculin in such doses that no reaction is produced except, perhaps, at the seat of injection. As time only will show what effect this method will produce, I am unable to state further than that in some cases the appetite is improved and there is a more progressive gain in weight. I have no doubt that in the majority of us, any tubercle we may acquire is not ordinarily cured by means of a violent reaction. I have seen great benefit follow violent reactions due both to tuberculin and to the natural disease. Unfortunately, in both cases I have more often seen harm follow.

I have tried giving continuous inhalations of carbolic acid, but so far I have not been able to obtain the results sometimes claimed for this method of treatment. So far as I can gather, the first lot of successful cases published by Dr. Lees referred to early cases and not mixed infections; latterly I have noticed that this method has been claimed as being specially useful in mixed infections. I have seen very little evidence of this, but have found that a respirator worn without any drug being used produces benefit when cold east and north-east winds have caused irritation of the air-passages; in this case the inhaler acts as an extra piece of trachea or of mouth, as the case may be. Really incipient cases generally tend to improve markedly if they cease from their employment only.

I put forward tentatively the following propositions in the hope that they may be of assistance to others, who, like myself, are daily worried by the numerous cures put forward both by the profession and by the lay public. 1. That everyone in an industrial community, by the time he reaches 20 years, has suffered from tuberculosis. 2. That the majority of persons get well without symptoms—that is, without reactions. 3. That a proportion get well after well-marked symptoms—that is, after pronounced reactions. 4. That, relative to the whole number of cases, a few of the patients recover after being looked upon as hopeless. The enormous number of actual cases of this disease accounts for so many of this class of case cropping up. 5. That in early cases it is usually impossible to tell when activity has ceased unless a rectal temperature be taken before rising. 6. That the disease tends to cure itself. Upon this factor is founded the rationale of treatment by tuberculin. 7. That in treating tuberculosis of the lung the effect on surgical tuberculosis of tuberculin must not be too much given in evidence. 8. That from the onset of hæmoptysis or pleurisy years may elapse, during which time the patient may walk about either in perfect health or in apparent perfect health.

Early cases of pulmonary tuberculosis may be benefited by the judicious use of tuberculin, and many advanced cases may perhaps be prevented from occurring, but if the duration of the disease before many patients at present elect to come to a sanatorium be considered it will appear that a very considerable number of years must elapse before the precise value of this treatment can be ascertained. One thing, however, seems to me quite clear, and that is that no treatment can be considered as worth while which does not tend to produce a temperature of 36·5° C. (97·7° F.) before rising in the morning.

Finally, as a warning, I would remark that the restoration to permanent working capacity of patients of the kind that at present come to this sanatorium, using every method of treatment that has been suggested, is very difficult.

I am, Sir, yours faithfully,

EDWARD E. PREST.

Ayrshire Sanatorium, New Cumnock, August 21st, 1911.

THE SCIENTIFIC PRINCIPLES OF INHALATION.

To the Editor of THE LANCET.

SIR,—In the LANCET of May 21st, 1892, the Scientific Principles of Inhalation were submitted to your readers, and the state of knowledge on that subject was fairly considered. Dr. Baxter, in his report as medical officer of the Privy Council, had stated that "it was well-nigh impossible to obtain an atmosphere containing a given percentage of the vapour," and it seemed from his experiments upon the action of certain disinfectants on vaccine lymph that practically no effect was obtained by them in their action as vapours. As it seems probable that some attention is going to be given to this subject I venture to refer to the communication you were so good as to publish in THE LANCET nearly 20 years ago. The observations made by Dr. Piesse and Mr. Johnston were published in the *Medical Press and Circular* on June 11th, 1885. When I directed the attention of the late Sir Richard Quain to the very unsatisfactory class of agents described in the British Pharmacopœia under the general title of "Vapores" he decided that they must be excluded from the new edition which was near publication. Let us hope that the time has come when the therapeutic value of vapours when properly prepared and administered is going to be studied and turned to use in the treatment of a large class of maladies.

I am, Sir, yours faithfully,

August 25th, 1911. ROBERT LEE.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Death-rate and the Strikes.

THE deplorable state of affairs consequent on the strike, with the practical cessation of nearly all work for more than a fortnight, led to a considerable increase in the death-rate of the city, as reported at the meeting of the health committee held on August 24th. Owing to the strike of the corporation scavengers, the dirty condition of the streets and the accumulation of refuse from the ash-pits and middens became a public danger. The death-rate of the city for the preceding week was 27·1 per 1000, as compared with 16·5 per 1000 in the corresponding week of last year. Of 390 deaths, zymotic diseases claimed 285 victims, of whom 191 were under 12 months. The deaths in the corresponding week of last year from infantile diarrhœa were 27, as compared with 157 last week. Probably the hot summer with its prolonged drought was responsible in a measure for a proportion of this high death rate. The medical officer of health, in reply to the question of how Liverpool compared with other cities in England where strikes had occurred, replied that there was a very wide range in the death-rate, but he was afraid that the

greatest injury had been done where strikes and labour disturbances prevailed. The carriage of sterilised milk supplied by the corporation for the use of infants of the poorer class had been seriously interfered with. The city presented the appearance of a besieged city with its barricaded shop windows. This precaution was adopted as many shops, especially in the lower parts of the city, were looted by the hooliganism which disgraced the city. The strikers are acquitted of taking part in this ruffianly conduct.

English Cholera in Mid-Cheshire.

The Northwich urban and rural areas are suffering from an epidemic of English cholera, or summer diarrhœa, the medical officer of health estimating the cases at fully 500, chiefly children under 18 months. The deaths have numbered 50 The outbreak is attributed to the long spell of hot weather, with the attendant contamination of milk and other food-supplies and interference with drainage. The medical officer of health has advised the boiling of all milk consumed by children, and regards flies as a fruitful cause of spread of infection.

August 29th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENT.)

Serious Accident to a Bristol Surgeon.

Dr. H. G. Kyle, one of the surgeons to the Bristol General Hospital, met with a serious accident while travelling through Shropshire on a motor cycle. The exact reason for his fall is not known, but the resulting injuries to the head and right shoulder are very severe, and his condition gives cause for grave anxiety. Dr. Kyle has a wide circle of friends in Bristol, and they are receiving information daily from his relatives who are staying with him at the house to which he was taken after his fall.

A Plague of Crickets.

During the hot weather the Bristol health committee was confronted by an unusual problem. Robertson-road, Eastville, was for several weeks swarming with crickets. The centre of attraction appears to have been a heap of refuse deposited by the authorities at the neighbouring workhouse, but the houses in this and other streets were freely invaded by hosts of insects. Various insecticides were tried; carbolic acid and lime were ineffective, and petrol, which was more efficacious, was too costly for wholesale use. Fortunately, the end of the trouble came when the hot weather passed; but while it lasted the people of the district were put to very serious inconvenience.

The Bristol Guardians and Hospital Accommodation.

The Bristol board of guardians is at present much exercised as to the means of providing adequate hospital accommodation. A scheme for demolition of existing premises on a large scale with erection of a new building has been passed, but it is being opposed by a strong minority, who plead for a smaller and more economical change in view of the present uncertain state of Poor-law affairs. This difference of opinion has been productive of many debates, some of them more conspicuous for heat than light. There is no doubt that it is a very serious matter, for the scheme which has received the sanction of the majority is a costly one. It is an interesting fact that one part of the doomed premises at Fishponds was built in the eighteenth century as a prison, and was used for years for the incarceration of prisoners of war.

Medical Practitioners and Public Servants.

At the last meeting of the Bristol board of guardians a letter was read from the guardians of the Merthyr Tydvil Union enclosing a copy of a resolution adopted by them as follows:—

That this board, being of opinion that it is better to pay for the prevention of disease rather than for the cure of same, believes that the time has now arrived when the medical practitioners of this country should become public servants. That copies of this resolution be sent to the President of the Local Government Board, local Members of Parliament, and to all boards of guardians in the country.

The Bristol guardians, after a slight discussion, dropped the matter.

Rural and Urban School Children.

The school medical officer of Wilts (Dr. R. H. Bremridge), in his annual report for 1910, which has been recently issued, states that the rural children are superior to the urban children in every physical characteristic of which he had taken notes, the rural standard of cleanliness is better, and the advantage of the rural over the urban area in the matter of height and weight was demonstrated.

The Royal Albert Hospital, Devonport.

At a special meeting of the governors of the Royal Albert Hospital it was decided to realise stock value £1083 and to devote the proceeds to the general maintenance fund. It was stated that, under the most careful management, the expenditure had for many years exceeded the income by about £800 per annum, and the present adverse balance against the hospital was £2640.

The Water-supply of Ilsington (Devon).

A Local Government Board inquiry was recently held at Ilsington into an application of the Newton Abbot rural district council for sanction to borrow £4900 for the purpose of water-supply.

Spotted Fever in the West of England.

At the last meeting of the Holsworthy (Devon) rural district council the medical officer of health (Mr. W. G. Gray) reported eight additional cases of "spotted fever," with three deaths. He asked the council to provide shelters and isolation accommodation, but this was not granted, and the matter was adjourned for a fortnight. There is a feeling of great dissatisfaction at the attitude of the Holsworthy rural district council in not supporting their medical officer of health, whose action has been warmly commended by the Local Government Board inspector (Dr. R. J. Reece), and also by the medical officer of health of Devon (Mr. G. Adkins). The local press has made several strong comments upon the council, and the *Western Morning News* urges the interference of the Local Government Board. The Tavistock (Devon) rural district council, owing to two cases of spotted fever having occurred in its area, and acting upon the advice of its medical officer of health (Mr. C. C. Brodrick), decided to provide isolation accommodation for the district and to make the disease notifiable.

Sanitary Inspectors and the Local Government Board.

At the last meeting of the Redruth (Cornwall) rural district council it was reported that the Local Government Board had refused to sanction the appointment of a certain sanitary inspector for a portion of the district. The Local Government Board stated that its inspector (Dr. S. W. Wheaton) had informed the Board of the unsatisfactory state of the district, and it was not willing for such a state of things to continue. The Board therefore urged the council to appoint a qualified sanitary inspector for the whole district, and to give him an adequate salary.

Death of William Steer Riding, B.A. Lond., M.D. Edin., M.R.C.S Eng., L.S.A.

Dr. William Steer Riding died at his residence, "Stamlands," Buckerell, Devon, on August 19th, in his seventy-sixth year. Dr. Riding, who graduated as M.D. at Edinburgh University in 1857, had at one time an extensive practice in London, where he resided at Endsleigh-gardens, Euston-square. He retired from active work about 20 years ago and took up his residence at Buckerell, near Honiton. He was very popular in the district, and the poor have lost in him a good friend. He leaves a son and two daughters to mourn their loss.

August 29th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Consumption in Newport.

FOR several years past the Newport board of guardians has had special accommodation for consumptive patients. A large house, apart from the workhouse and in its own grounds, has been utilised for the special treatment of these cases, and by the erection of huts as many as 37 patients can be accommodated at one time. The corporation has erected a wooden pavilion in the grounds of the isolation hospital for the accommodation of ten patients, and in his annual report for 1910 the medical officer of health, Dr. J. Howard-Jones, states that during the year there were treated in this pavilion

102 patients. Unfortunately, as in previous years, the majority of the patients were in an advanced stage of the disease. Some had not sought advice until their chances of recovery had become imperilled, while others, though under medical treatment, had not been informed until a late period of the nature of their ailment. Notwithstanding this drawback, Dr. Howard-Jones considers that the results attained by the segregation of cases in an infectious stage fully justify the cost entailed. As a rule, each patient stays in the institution for one month; in exceptional cases for a longer period. On returning home they are encouraged to keep in touch with the medical officer of health. They are visited in their homes and are urged to carry out the lessons inculcated during their stay in the sanatorium.

The Nursing Arrangements in Dolgelly Workhouse.

At a recent meeting of the Dolgelly board of guardians Mr. Hugh Williams, Poor-law inspector of the Local Government Board, urged very strongly the appointment of a trained nurse for the workhouse infirmary. At present, he said, only about 20 per cent. of the workhouses of the country were unprovided with trained assistance. The rate of pauperism depended upon the way the Poor Laws were administered, and there was no doubt that if the amount of sickness could be reduced by proper nursing a considerable saving would be effected in the cost of relief. The medical officer, Mr. John Jones, endorsed the recommendation and stated that the patients then in the infirmary required careful and skilled attention. The proposal was opposed by several members of the board, apparently on financial grounds, though one guardian openly avowed that he had no faith in doctors or nurses, and stated, in all seriousness and as an unanswerable argument, that there were several cases in which patients had died after being nursed. In the end decision on the question was postponed for two months.

West Wales Joint Asylum.

The dispute which has been going on for many years past between the county authorities of Cardigan, Carmarthen, and Pembroke, with respect to certain charges connected with the asylum belonging to those bodies, has at last been brought to a satisfactory termination. Many improvements, including arrangements for proper classification, are now rendered possible, and suitable additions to the asylum buildings will lessen the existing overcrowded state of the institution, in which the number of inmates on March 31st last was 687. In his recently issued annual report the medical superintendent, Dr. John Richards, refers to the importance of keeping under surveillance patients discharged as recovered. He suggests that they should be medically supervised and, when necessary, monetarily assisted for several months after leaving the institution. One male patient died during 1910 at the age of 106. He had been an inmate of the asylum from the date of its opening in 1865.

The Rhondda Health Report.

The population of the Rhondda urban district at the last census was 152,798, an increase of 39,063 upon that recorded in 1901. There are now only 18 county boroughs and one urban district, that of Willesden, with populations exceeding that in the Rhondda valleys. In his annual report for 1910 the medical officer of health, Dr. J. D. Jenkins, refers at length to the infantile mortality, which has always been high in the district, averaging in the past ten years 178 per 1000 births. In 1909 it was 129 per 1000 and 136 in 1910. During these two years two health visitors have been employed in the district. It appears, however, that their work was restricted to one portion of the district in which the infantile mortality rate in 1910 was 142 per 1000, while in the remaining portion of about the same population the rate was only 130 per 1000. The death-rate from diarrhœa, which was 0·29 per 1000 in England and Wales in 1910, was 0·83 per 1000 in the Rhondda, and of those who died from this cause over 80 per cent. were under one year old. As the Rhondda is essentially a water-carriage locality, and as there is no storing of household refuse in the immediate vicinity of dwellings, it is necessary to seek for some cause of this prevalence of diarrhœa other than that which is to be found in the northern counties—namely, privies and dustbins. It appears, however, that although there is a daily removal of refuse from the dwellings in the Rhondda, it is carted to huge mounds at no great distance, and Dr. Jenkins states that these "tips" afford a suitable breeding-ground for flies, an excessive number being noticeable in the houses nearest to the accumulated refuse. He asserts that the abolition of the "tips" will be instrumental in reducing the death-rate in the locality concerned, and especially so amongst young children. There are no less than 200 loads of refuse to be dealt with daily, only about one-tenth of which is disposed of in the destructor erected in 1900. Power has been sought, however, to purchase land and to erect destructors in four different parts of the district, and also to use the existing tramways to convey the refuse to the destructors. The erection of these destructors is without doubt the most urgent matter claiming the attention of the council. The staff of six sanitary inspectors, which has not been augmented for 12 years, and which has only been increased by one since the time when the population of the district was half that of the present time, appears quite inadequate for the proper carrying out of the duties imposed by the Local Government Board. Dr. Jenkins states that among the subjects which have to be neglected owing to the insufficiency of his staff are the inspection of meat and food supplies, measures specially aimed at the prevention of pulmonary tuberculosis, inspection of the gathering grounds of the many different areas of water-supply, and the sanitary administration of workshops and workplaces.

August 29th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Proposed New Nursing Home for Edinburgh.

THE executive committee of the proposed new nursing home for Edinburgh has acquired a block of three houses in Chalmers-street, Edinburgh, as the site of the new home. Of the £10,000 required a sum of £8640 8*s.* 11*d.* has now been subscribed. The home, it is expected, will be self-supporting.

Voluntary Health Visitors of the City of Edinburgh.

The work of the voluntary health visitors in connexion with the Public Health Department of the city of Edinburgh continues to maintain the satisfactory level of efficiency which was reached in the first years after the initiation of the scheme. The medical officer of health, in his report for 1910, announces a reduction in the rate of infantile mortality from 113 in 1909 to 103 in 1910, and states: "There can be little doubt that, in addition to the general improved sanitary condition of the city, much of this result has been obtained through the sustained efforts on the part of the large body of voluntary lady health visitors who for some years past have dealt with this whole question in a manner which can only be characterised as thorough in every detail." The Notification of Births Act gives to the public health department knowledge of the birth of a child within 36 hours, and in the cases where notices come from homes where no paid medical man has been in attendance visitation of the infants is undertaken. As soon as possible after receipt of the notification the official lady health visitor pays an initial visit, and then passes on slips with the information to the secretaries of the voluntary visitors. The secretaries receive the notices each week, distribute the cases to the captains of the various areas, and the captains in turn distribute them to the individual visitors. The visitors are required to visit fortnightly—and much oftener in case of illness—while after each fortnightly visit a report of the condition of the child has to be made out on a printed form and given in to the public health department. In the end of 1910 there were 267 ladies engaged in the work and 1249 infants were under visitation. The total number visited during the year was 2395. During the winter of 1909–1910 three sets of five lectures were delivered to the visitors, the subjects being "Infant Life," by Dr. Beatrice Russell; "Infection," by Dr. John Thomson; and "Some Methods of Charity," by Mrs. George Kerr, honorary secretary of the City of Edinburgh Charity Organisation Society. The visitors attending the lectures were charged 2*s.* 6*d.* for each set, and this charge more than covered the expenses of the lectures, including the lecturers' fees. Voluntary health visiting, as carried on in Edinburgh, is a demonstration of how satisfactory and efficient such

work may be if well organised. The object the visitors have set before them is to reduce the rate of infantile mortality in Edinburgh to the lowest possible figure.

Glasgow Western Infirmary Extensions.

An important addition to the buildings of the Western Infirmary, Glasgow, is to be formally opened by Sir James Barr, on Oct. 13th. The addition comprises a clinical laboratory erected at a cost of £5000, given some time ago by an anonymous donor. The laboratory will be not only of great service educationally, but will, it is confidently hoped, prove of much assistance in the curative work of the infirmary. Its equipment has formed the subject of the fullest possible inquiry, including visits to several of the best-known continental hospitals. A further extension scheme is on foot for the hospital, and one which is urgently required. This scheme aims at the construction of a reception ward with operating theatres overhead. This building will fill up the gap between the main building and the new wing, and from the point of view of administration alone the linking-up of these buildings will be of considerable convenience. Apart from this consideration, a commodious reception-room is urgently needed. The sum aimed at to cover the expense of the further extensions is £80,000, and while a considerable proportion has already been subscribed, fully £20,000 more are required to complete the cost of the scheme.

Leanchoil Hospital, Forres.

At a recent meeting of the managers of the Leanchoil Hospital, Forres, it was intimated that a legacy of £1000, free of legacy duty, had been left by the late Mr. George Cunningham of Forres, to found a bed to be called "The George Cunningham Bed."

New Infirmary, Perth.

On the afternoon of Saturday, August 26th, in the presence of a distinguished and representative company, the memorial stone of the new infirmary for the county and city of Perth, which is in course of erection at Tullylumb, Perth, was laid by Mrs. C. A. Murrey, Taymount, wife of the chairman of the institution. In the new infirmary there will be 120 beds, and of the sum required, which is estimated at £36,190, £33,022 have been subscribed, leaving £3168 to be raised. It is also proposed to erect and endow a children's ward, as the city and county's memorial to the late King Edward, the cost estimated at £2000.

August 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Old Age Pensions in Ireland.

THE recent annual report of the Local Government Board on the working of old age pensions makes sad reading. From the date of the Act coming into operation until July 1st, 1911, the total number of appeals received by the Local Government Board actually numbered 49,190. It is deplorable to find, as pointed out in this report, a tendency on the part of almost every small landholder in Ireland, on reaching the age of 70 years, to transfer his farm to some member of his family and then claim a pension as a matter of course. The fact is, in Ireland the Old Age Pensions Act has totally undermined the independence of a large number of people, and to-day there are thousands in receipt of pensions in Ireland who neither need nor deserve them. Again, in this report it is shown that many representations from boards of guardians have been made to the Local Government Board, complaining of their being unable to recover any part of the cost of the maintenance of an old age pensioner who temporarily seeks medical relief in a workhouse infirmary, and urging that Section 6 of the Act should be amended so as to enable them to draw the pension during the pensioner's stay in the institution. It is clear from the report of the Local Government Board that the Old Age Pensions Act has raised problems in Ireland which will cause great trouble in the near future.

Death-rate of Dublin.

In the annual report of Sir Charles Cameron, medical officer of health of Dublin, the death-rate of Dublin is shown to be 10 per 1000 higher than the average of the great English cities, and practically double that of London. Moreover, it is high not only among the poorer classes, but among the professional and well-to-do middle-classes. The cause lies, doubtless, in the housing of the poor. There are 211 cases in which nine or more people are living in one room, nearly 4000 with six or more, and nearly 10,000 with four or more. It is obviously impossible to obtain health or decency under such conditions. The various housing schemes of Lord Iveagh, the Dublin corporation, and others have afforded little relief, since they cater for the artisan rather than for the labourer and the very poor. The city architect recently made the very proper suggestion that to cope with the housing question thoroughly all hope of making any scheme self-supporting must be abandoned. The return to the community must be looked for in the health of its citizens and not in money. The corporation, however, spends money lavishly at present in all its departments, and taxation is at its limit, so that it will not be easy to gain consent for an expensive housing scheme. In the meantime, much might be done by a rigid system of inspection of the tenement houses, with enforcement of the by-laws, where any default is shown.

Dispensary Medical Officers and the Insurance Bill.

A meeting of "dispensary doctors"—i.e., Poor-law district medical officers—was held in Dublin during the recent Public Health Congress, to consider the special menace to their interests by the National Insurance Bill. The proposal of the Irish Parliamentary Party—viz., to omit medical benefits from the scheme as applied to Ireland—is regarded as particularly dangerous to Poor-law medical officers. If sickness benefits are to be given without medical benefits the Health Committees will require medical certificates and other safeguards against malingering, and are likely to demand, as the Bill gives them power to do, such extra services connected therewith from the dispensary doctors. Resolutions were therefore passed that the Poor-law medical officers of each county should meet to discuss their position and prospects under the Bill, at a meeting to be held in Dublin early in October.

On August 17th a conference was held in the Engineers' Hall, Belfast, to which trade union and friendly society officials were invited, to make recommendations as to amendments necessary to render the Insurance Bill applicable to Ireland. The President of the Trades' Council occupied the chair at this conference, which was entirely composed of members of the Labour Party, as the invited representatives of the Friendly Societies were unable to attend. The meeting disclosed the opinions of the working classes, and the views were made public of a deputation from the Belfast Trades and Labour Council which had interviewed in London the Chancellor of the Exchequer and the Labour and Irish parties. The chairman said he had reason to reconsider the good opinion he originally formed as to the Bill, and he was coming to the conclusion that "all that was left of the fine scheme introduced in such glowing terms by Mr. Lloyd George—at any rate, so far as it applied to trades unionists in Ireland—was not worth fighting for. Further, he did not see why they should be expected to 'kow tow' to the Friendly Societies." A member of the deputation to London said that Mr. Redmond had told them that 75 per cent. of the people were against the medical benefits part of the Bill. The agricultural portions of the country were opposed to the medical benefits, which would be of value to only five counties in Ireland. When the Irish Party were asked if they could have that part of the Bill made applicable to Ulster alone they were told that that the matter would receive sympathetic consideration. Another speaker said Mr. Lloyd George told them he would be guided by the votes of the Irish Members, and that party was going to exclude Ireland from medical relief benefits and to maintain the present dispensary system in Ireland, though giving Englishmen the right to choose their own doctors—a somewhat strange attitude for the Irish Party to take. Finally, a resolution was put forward that Ireland should not be excluded from medical relief or unemployment benefit under the scheme, and that out-workers should not be excluded from the operation of the National Insurance measure; to which an amendment was offered "that while this meeting approves of certain of the privileges of the National Insurance scheme, it demands the withdrawal of the

present Bill as being unsuited to the workers." After a long discussion the conference, at which there was a large attendance, was adjourned until the next meeting of the Trades Council. On August 12th at a meeting in Thurles of the dispensary doctors of county Tipperary, resolutions were passed to the effect that if medical benefits were deleted, while sickness benefits were retained in the Insurance Bill as applied to Ireland, the dispensary doctors' medical work would be enormously increased without provision for proportionate remuneration. So far as Ireland is concerned, in dealing with the Insurance Bill next autumn Parliament may adopt one of three courses: (1) Decide that it will not apply to Ireland; (2) delete medical benefits; or (3) arrange that in Ireland the Bill be so altered as to make one part apply to the industrial centres and the other to the agricultural districts. Unquestionably the worst and most unworkable scheme would be the second.

Registration of Milk Purveyors.

At the Belfast summons court on August 21st a farmer in county Down, who daily brings milk into Belfast, was proceeded against for not being registered as a purveyor of milk under the Dairies, Cowsheds, and Milkshops Order, 1908. The defence put forward was that registration in Belfast was not required as this had been done in county Down; but the corporation, which prosecuted, contended that the registration of the vendor was required in the district in which the milk was sold—in this case Belfast. The corporation is rightly seeking to establish power of inspection over all milk-carts from which milk is sold in the city. Only about one-half of the dairymen residing outside the city who vend their milk in Belfast are registered with the corporation. The case was therefore a test one, and it is satisfactory to find that the magistrates convicted and also refused to state a case for the higher courts, although the legal adviser of the milk vendor said he would serve notice for a case.

Death of John Henry Harbison, M.B., B.Ch., B.A.O. Q.U.I.

Widespread regret is felt among the younger members of the medical profession in Belfast at the tragically sudden death of Dr. John Henry Harbison, demonstrator of physiology, in the Queen's University, Belfast. While on a visit to a brother in Liverpool he was attacked on August 12th with tonsillitis, to which he succumbed on August 14th. He was buried in Cookstown, county Tyrone, on August 16th. A native of Cookstown, Dr. Harbison received his early education at St. Patrick's Academy, Dungannon, and Blackrock College, Dublin. A distinguished intermediate exhibitioner, he entered Queen's College, Belfast, where he was a scholar, and graduated in 1910 as M.B. at the Queen's University, Belfast. He subsequently was house surgeon in the Mater Misericordiæ Hospital, and when his term of office there expired he was appointed demonstrator of physiology at Queen's College, Belfast—a post he held at the time of his decease. A man of exceptional ability, a hard worker, and with a very amiable character, Dr. Harbison was most popular with all who came in contact with him.

Death of Robert Chambers, L.R.C.P. Irel., L.R.C.S. Eng.

The death of Mr. Robert Chambers occurred at his residence, Westwood, Ravenhill Park, Belfast, on August 28th. Mr. Chambers, who was born in county Tyrone, studied in Dublin and Edinburgh. He settled in practice in London, where he was superintendent of the Marylebone Medical Mission, physician to the Church Army Training Homes and Shaftesbury Institution, and physician to the London Medical Mission. Mr. Chambers came to Belfast on his retirement from the active duties of his profession a couple of years ago. He was always deeply interested in religious work, and took a prominent part each year in the well-known Keswick Convention. He was devoted to floriculture, being an enthusiastic rose-grower. General sympathy is felt for his widow.

August 29th.

DEVON CHESS CHAMPIONSHIP.—Mr. Robert Dunstan, M.R.C.S., L.S.A., of Torquay, has won the Winter-Wood Cup, which will be presented to him at the annual meeting of the Devon County Chess Association.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Period of Congresses.

AUGUST is the month of congresses. France has had four during the past few weeks. The French Association for the Advancement of Science, one of the most important of scientific congresses, held its annual meeting at Dijon. Medical subjects constitute one of its sections, and one which seldom lacks interesting communications, especially from provincial savants. For instance, this year M. de Janicot, chief of the laboratory at the Lyons Faculty of Medicine, dealt with the teaching of puericulture, which, according to him, should be entrusted to female teachers. Dr. Ziffel, a professor of the Medical School at Dijon, insisted on the point that no child should be admitted into any school until after it had undergone a medical examination. In the section of anthropology Dr. Marcel Baudouin presented a general classification of the human osseous lesions of the neolithic age. Finally, in the section of medical electricity M. Weill, M. Vincent, and M. Barre of Paris presented a communication on Electrical Examination in Diseases of the Ear. The members of the Congress attended the exhibition of medical electricity open at Dijon during the Congress.

The French Congress of Stomatology was opened in Paris on July 31st at the Faculty of Medicine in the Grand Amphitheatre before a numerous attendance of French and foreign medical men. M. Landouzy, Dean of the Faculty of Medicine, delegate of the Minister of Public Instruction and Fine Arts, presided over the first session and delivered a presidential address that was highly appreciated. The principal communications presented were those of M. Tellier (Lyons), on Pyorrhœa Alveolaris; of M. Bezo (Paris), on Classifications in Orthodontia; of M. Cruet on the Unity of Accidents of Dentition; of M. Caillon (Lyons), on the General Principles of Bucco-dental Prophylaxis; of M. Hallopeau, on the Local Treatment of Syphilides of the Tongue; of M. Béal (Lille), on Tetaniform Accidents of Dental origin; and of M. Rousseau-Decelle, on the Influence of Bucco-dental Irritations on the Production and Evolution of Dermatoses. M. Chaminade (Bordeaux) discussed the conclusions to be drawn from a statistical examination of 1000 chloroform anæsthesias and 1500 anæsthesias with ethyl chloride. On August 3rd a closing banquet was held, at which a large number of medical men were present.

About the same period the Twenty-first Congress of Alienists and Neurologists of the French-speaking countries opened at the Hôtel de Ville, Amiens, under the presidency of Dr. Deny, physician to the Salpêtrière, with delegates from the Ministries of the Interior, of War, and of Marine, and some 15 representatives of medical societies. The mayor welcomed the members and Dr. Deny responded, while M. Granier, Inspector-General of the Administrative Services, and delegate of the Minister of the Interior, extended the good wishes of the Government to the Congress. The first session was almost entirely devoted to a debate on the report of Dr. Maillart, physician to the Salpêtrière, who discussed the different kinds of psychopathic pains. Dr. Paugniez (Amiens) communicated a series of observations on suggestion by beauty, an influence which, without abolishing the mentality of the subject, exercises an external authority, giving rise to an idea capable of awaking other ideas associated with it, and ending even by determining actions which, if left to itself, the will of the subject would be incapable of accomplishing. He cited in support of his theory the influence of Agnes Sorel over Charles VII. From the time of her appearance at Court Charles VII. rose to the demands of his high position, comported himself with the confidence of a man defended by a talisman, and every year marked a victory. When Agnes Sorel died in 1440 the King forthwith fell back into a life of idleness and debauchery. M. Courtellemont presented a long communication on tumours of the pituitary body, which was discussed by M. Laignet, M. Lavastine, M. Paul Sainton, M. Meige, and M. Dide. M. Dupré and M. Lagre read a paper on the relations existing between hysteria and

mythomania. M. Meige gave vent to some admirable remarks on the correction of functional troubles of speech. The value of the testimony of the insane in the courts was the subject of a very interesting communication by M. Lalaime, physician in chief of the Insane Asylum of Maréville, near Nancy, the paper evoking considerable discussion, in which many took part. This important session closed with a visit to the interesting museum of Picardy and ancient Amiens. It was decided that the next Congress should be held at Easter, 1912, at Tunis, under the presidency of Dr. Mabille (La Rochelle), and that of 1913 under the presidency of M. Arnaud.

Death of Professor Dieulafoy.

French science, and particularly medical science, has sustained a severe loss in the death of the eminent Professor Dieulafoy, Commander of the Legion of Honour, and a Member of the Academy of Medicine, who passed away somewhat suddenly on August 16th. He was born at Toulouse in 1839. He was a pupil of Trousseau, and had a distinguished career both as resident in the hospital and on various hospital staffs. After occupying the chair of Clinical Medicine at the Hôpital-Necker he proceeded in 1896 to the Hôtel-Dieu, where he became successor to Trousseau. In 1909 he was associated with the tuberculosis service at the Hôpital-Laennec. He published a very valuable number of works, among which must especially be mentioned his "Manuel de Pathologie Interne," which has been translated into nearly every language. As a practitioner he was highly talented, and it was he who popularised, in 1869, the aspiration treatment of pleurisy. To an extraordinary intellectual capacity he joined an open mind on all points. Not only a savant, he was also a man of letters and a devotee of the arts, and a collector of modern paintings. His fine character and kindly qualities endeared him not only to his professional colleagues, but to all with whom he came into association.

August 28th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Cholera Epidemic.

THE Marquess Incontri, a young and aspiring member of the Chamber of Deputies, has given notice of the following interpellation to be addressed, on the reopening of Parliament, to the Minister of the Interior:—

> To be informed as to the reasons for which silence has been maintained on the true state of public health throughout the kingdom—silence which gives warrant to the grave apprehension entertained in foreign countries, and which, concurrently with official communications not in harmony with the truth, prevents the people, in their ignorance, from putting in practice the elementary rules, hygienic and prophylactic, indicated by circumstances.

This announcement gives voice to the dissatisfaction shared by Italians at the reticence of the Government during the prevalence of a disease which has already assumed an epidemic character, thus leaving to municipal or communal initiative what ought to be official procedure emanating from headquarters. The interpellation cannot be made till November next when the Chamber meets, but it may, in the meantime, have the effect of bringing home to the Government the duty of frankness, or, to put it plainly, of that moral courage, which was so culpably wanting last year, when the public were kept in the dark as to the presence of cholera on the Adriatic seaboard and were only apprised of the danger when the disease had already effected a landing at the ports of the Two Sicilies. Much has been made, as a motive for this reticence, of the dread of scaring away the foreign visitor or "paying guest," and the association for promoting the influx of that source of revenue has been blamed for inspiring the Government with its "policy of silence." But such, I am credibly informed, is not the fact, any more than it is a fact that the interests of the Exhibition still open in the capital, and not too largely frequented, are similarly responsible.

The late summer and the early autumn are not the season when foreign visitors are expected, and the silence in question, this year as last year, may in truth be set down to the traditional supineness of Latin officialdom when confronted with such visitations. To such lengths has that ill-inspired tradition gone that it was recently announced by the telegraphic agency under Government control that at Leghorn, for example, not a single case of cholera had occurred when, according to the Marquess Incontri, who is in close touch with that seaport, "the disease had for weeks been numbering victims daily," when (still according to that authority) "in all the centres of Tuscany, great and small, the presence of cholera was a theme of general conversation," when, in fact, villas and palatial residences were being abandoned as early as the first days of July! Another significant fact is vouched for by the Tuscan Deputy. "A recent official circular requires every householder to report any cholera case within 24 hours of its occurrence, at the same time charging the medical man not to pronounce or to write the terrible word! The inevitable consequence of all this is the imbroglio in which Italy has been involved with other Powers, whose suspicions of her sanitary state have deepened into something like conviction of the sinister reality, causing trouble for her at their ports, with suspension of all business, commercial and other, notably in the Argentine and the United States. Her rivals, moreover, in catering for the "paying guest" have been only too eager to utilise this "atmosphere of doubt and dread"—hotel-keeping Switzerland, for example, flaunting announcements in its bureaux that "subscriptions are gratefully acknowledged here for the cholera-stricken Italian centres," while at the same time assuring the arrivals that the fruit and vegetables supplied at the table do not come from Italy.

In the towns where cholera has effected a foothold, the authorities, in the absence of direct Government intervention, are left to their own, not always well-inspired, initiative, having to act in isolation, not in harmony with the neighbouring centres, some of them having to depend on the medico-military service only, which has not always the means or the *matériel* for efficacious action. A notable exception to this haphazard procedure is afforded by Leghorn, where the disease has been so prevalent and the panic so great that 30,000 of the population—all, in fact, who had the means—abandoned the city, but where the municipality and those of the citizens who remained exerted themselves nobly, substituting at their own expense pure water from without for the notoriously defective supply hitherto available, till the Government has at length intervened with the subsidy of 15,000 francs in aid of their operations. This subsidy—none too liberal—has been supplemented by the Minister of Marine, who, in addition to the "acqua potabile" imported from Massa and the Maremma, has embarked at Naples, from the pure source of the Serino, 250 tons of water. Such and similar measures have already reduced the mortality at Leghorn considerably, with the result that the fugitives are beginning to return. Genoa, too, and the neighbouring towns are showing the Government an example of what non-official energy can do, although the local conditions in some of these are of the worst imaginable. At Sori, for example, the water-supply has been so bad that during the drought it has to be drawn from a well, the water of which poisoned no fewer than 20 of those who drank it, and as many as 15 died!

The truth is that it is only on occasions of epidemics like this that the majority of Italian communities awake to the insanitary conditions under which they are content to live, while the lessons then inculcated, though taken to heart at the time, are soon forgotten on the disappearance of the visitant. Poverty, too, comes in to embarrass the authorities and often to frustrate their action. At Florence, happily immune from the epidemic, a quantity of fruit was impounded by sanitary order and carted away to a retired spot in the Cascine (the "Bois de Boulogne" of the City of Flowers). But the moment the coast was clear a number of fruit vendors picked up the more "plausible" looking of the peaches, apricots, or apples, washed them in the Arno close by, and disposed of them again! The incident shows with what adverse forces the public hygiene of Italy has to struggle, and explains how ineffective is the fight she makes in such disastrous visitations as the present.

August 27th.

THE BARNSTAPLE (DEVON) BOARD OF GUARDIANS AND THE NORTH DEVON INFIRMARY.—At the last meeting of the Barnstaple board of guardians it was decided to give a donation of £25 to the funds of the North Devon Infirmary.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Precautions against Cholera.

ON account of the threatening epidemic of cholera the Minister of Internal Affairs has ordered that the county magistrates shall provide in every town and village adequate accommodation for any cases that may occur. Persons coming from localities known to be infected are to be medically examined, and if they present suspicious symptoms they will be isolated for at least a fortnight. Villages which cannot afford to erect the necessary buildings from local funds will be helped by the State. In the event of an outbreak the maintenance of the patients and the wages and salaries of the nursing and administrative staff will also be provided at the expense of the State. Circulars have been sent to medical men inquiring whether they will in case of need undertake the treatment of cholera patients for a fee of 20 kronen daily with provision for their families in case of their death from the disease. Last week Dr. Gyula Bölcs, Ministerial Secretary, reported to the Minister of Public Health that all precautions against a possible invasion of cholera have been duly taken in this country, and that the sanitary authorities were in perfect readiness to deal with any cases that may occur.

Protection against Mosquito Bites.

The medical editor of the *Pesti Hirlap* has contributed to that journal an interesting article on the hygiene of holiday-making, in the course of which he deals with the prevention of mosquito bites. He recommends in the first place strong-smelling preparations for the hands and face, especially oil of lavender, oil of lemon, carbolated vaselin, vinegar, and turpentine. There is also tinctura pyrethri rosei, which has a very agreeable odour, does not stain the hands, and retains its active properties for four or five hours. Another very reliable preparation is "zacherlin," which is manufactured in Vienna. It is used as follows: 2 ounces of the powder are stirred up with a pint of alcohol, and the mixture is allowed to stand for one or two hours, after which it is filtered through blotting-paper, and the solution is then ready. This tincture, according to the observations of many medical men in Abbazia, keeps off the mosquitoes for a whole night.

The Average Lifetime of Hungarian Women.

The detailed statistical results of the last census were published at the end of last month, and the figures have been discussed by various medical men from different points of view. A noted Hungarian gynæcologist has examined the data available for comparing the duration of life of men and women respectively, and finds that women live longer than men. The average lifetime of Hungarian women, according to the census taken in 1880, was 42·5 years, but according to the last census it is now 51 years. In some parts of Hungary the improvement is still greater. For instance, in the Szckely district in Transylvania the average lifetime of a woman is 59·2 years. According to this gynæcologist the longer lifetime of women is due to their working less than men. The data of the present census show that there are now far fewer hysterical and nervous women than in former years. Insanity has also decreased slightly. These favourable results are chiefly due to the general prosperity of the country. Wages in Hungary have almost doubled during the last 10 or 20 years owing to the flourishing condition of agriculture, trade, and manufactures.

August 14th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Small-pox and Vaccination in the Province of Quebec.

SMALL-POX during the past few months has been very prevalent in most parts of the Province of Quebec. According to Dr. J. A. Beaudry, chief inspector of the Provincial Board of Health, there are at the present time many thousands of cases of small-pox in various districts in Quebec. For a period of 12 years, the same authority states, small-pox has been present to a greater or less extent in the province. The disease during this time has not exhibited itself in the form of a continuous epidemic, but has existed since 1899, each year in an almost uninterrupted fashion from November up to the month of May. One reason why the disease has not been brought under control is that it has been of a mild, and perhaps of a somewhat abnormal, type. Consequently the condition has not been diagnosed until a large number of persons have been infected, and not infrequently medical men themselves have diagnosed as chicken-pox cases which have really been true small-pox. But of all the reasons which may account for the continued existence and spread of small-pox in Quebec the neglect of vaccination is the chief. The occurrence of several cases of small-pox in Montreal and neighbourhood a few weeks ago brought matters to a crisis, and the Board of Health of the Province of Quebec took action under the powers conferred by Article 3875 of the Quebec Public Health Act. It issued an order that, in view of the increasing prevalence of small-pox throughout North America, as well as in the Province of Quebec, each municipal council of the province shall avail itself within five days of the receipt of this notice of the powers conferred on municipalities by the aforesaid article of the Public Health Act and of those given by Article 608 of the Municipal Code to adopt and enforce the necessary by-laws. These by-laws are sufficiently drastic to ensure general vaccination throughout the Province of Quebec if properly enforced. Although there seemed to be a considerable amount of opposition to obligatory vaccination in Montreal Dr. Beaudry is of the opinion that the antivaccinationists are not strong in the city. As is often the case elsewhere, they make up in noise for what they lack in numbers. Vaccination has not been prosecuted in a sufficiently strenuous manner, because small-pox hitherto has not been of a type virulent enough to constitute an imminent public danger. Indeed, familiarity with the disease has aroused the proverbial contempt. The results of enforced general vaccination in the province of Quebec will be instructive.

Filtration Plant for Montreal.

It is a year since preliminary steps were taken to provide Montreal with a filtration plant in order to ensure a pure water-supply. At first investigations were made as to the possibility of procuring water from the Laurentian lakes. It was finally decided to use raw river water as it was found that both lake and river water would require filtering and that it would be cheaper to filter the river than lake water, mainly because the city has already a plant in working order for the distribution of river water, while in order to obtain a supply from the lakes it would have to go to heavy expense and would nevertheless be compelled to employ filtration. The cost of the construction of a filtration system is estimated at £320,000. The land required for the purpose has been bought at Verdun, and tenders for construction work have been offered by four firms.

August 19th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

City Owned Milk Stations of New York.

THE sum of £8000 has been appropriated this year by the city of New York for the maintenance of municipal milk stations, and the various milk-station organisations have formed an Association of Infants' Milk Stations. This association will avoid the duplication of effort and consequent waste of energy of former days, and afford a central office or clearing-house where close relations between the societies will be fostered, and whence information of value to each station and to the public will be disseminated. The Department of Health, which suggested this association, has admitted to it seven private organisations; in all 89 milk stations are represented. Up to now some 7000 infants have been regularly supplied with irreproachable milk. A physician is in attendance at each station, except where milk is sold by the glass at ½*d.*—less than cost—and gives free advice to mothers and prospective mothers. He is assisted by a nurse or matron, and visits are made to the homes of babies too sick to be brought to the station.

New York's Seaside Hospital for Babies.

Coney Island is said to be famed throughout Europe as a stupendously noisy and vulgar resort for New York's workers, and the idea of a home for sick babies amid such

surroundings is at first sight incongruous. The seaside hospital, however, is an immense success. It was formally opened on July 13th on land which, bought 30 years ago, is now worth £50,000. It stands ready for medical and surgical work, has diet-rooms, milk-rooms, irrigating-rooms, and all imaginable facilities required for treating the diseases of children, and a special fire-proof, isolated, fumigating plant for dealing with contagious disease. The building is constructed in such a manner that one section may be completely separated from the others, being independently heated and lighted, so that it may be run by itself if patients are not sufficiently numerous to fill a greater space. The hospital offers ideal conditions for the segregation and treatment of tuberculous cases, although not especially devised for that purpose. Accommodation is offered for 100 babies with their mothers. The hospital depends upon private charity, which, however, supports it bravely.

Industrial Welfare.

The American Iron and Steel Institute, one of the famous partners in the Steel "Trust," has begun an apparently serious attempt to revolutionise the condition of its labourers. Up to this time it has been the custom to work the men 14, and sometimes 24, hours a day, and to work for seven days in the week, relying upon the constant stream of immigration to keep the ranks filled. Now a beginning is made by ceasing work on Sunday and limiting the hours of daily toil to eight. A physician has been engaged to distribute literature among the 400,000 employees regarding the danger from the house-fly, the advantages of personal and domestic cleanliness, and other hygienic matters. It is believed that this movement will extend indefinitely, and will result in hospitals for those wounded in the course of their work, in the scientific regulation of drainage and so forth among the homes of the men, in the establishment of playgrounds and gymnasiums, and generally in the foundation of a state of unobtrusive paternalism on the part of the newly established "welfare committees."

Accident to Dr. G. G. Rambaud.

On August 2nd a high-powered car driven by Dr. Rambaud, director of the New York Pasteur Institute, and containing nine passengers, turned turtle, throwing out the occupants and injuring them all except a child of two years. Among the passengers was Mrs. Rambaud, formerly Mme. Gerville-Réache, the singer. Dr. Rambaud is at present in a Poughkeepsie hospital suffering from the effects of a perforated intestine, for which a laparotomy had to be done.

Cholera Scare Dissipated.

On August 4th the steamer *Madonna* reached New York from Providence, R.I., after remaining two days in quarantine under careful inspection with negative results. The *Madonna* came from Marseilles, Lisbon, and the Azores, and carried 63 steerage passengers. With this reassuring result the cholera scare may be said to be over, although there is some apprehension owing to the supposed presence of cholera-carriers in various parts of the country. Several supposed cases at the public hospitals turned out to be fright or hysteria, the relaxing effect of which upon the sphincters has been noted in previous scares.

Non-smokers' League.

The Non-smokers' Protective League of America, the latest organisation for the restraint of personal freedom, has been incorporated at Albany, N.Y. Its object is to prohibit the use of tobacco in all public places. One of the incorporators is Dr. Harvey W. Wiley, the Federal food and drug expert, who bids fair to forfeit much of his recently-earned popularity by this step. Many university presidents and professors appear in the list of incorporators.

A Diet Kitchen Association.

Special instruction for the "little mothers" who are in charge of young children is a feature of the summer work of the New York Kitchen Association and its nine branches. The physicians and nurses in charge give instruction in the preparation of milk, and similar matters, every morning to large audiences of the young guardians. On the recreation piers which jut out into the East and North (Hudson) rivers, other audiences of tenement house mothers with their children in their arms and clinging to their skirts listen to lectures on the construction of home-made fireless cookers, the preparation of ices without a freezer, and other hitherto undreamed-of mysteries. By these lectures it is hoped to attack the liquor problem at its root.

August 14th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Fouling of Water-supplies by Natives.

THE national habit of fouling and misusing the supplies of water in India is a matter of astonishment to all sanitarians who visit the country or are permanently engaged in sanitary work; not only do the people persist in their habits in spite of all warnings, but they claim for them a sacerdotal authority which, whether true or false, is none the less disastrous to public health. The sources furnishing drinking water are the rivers, lakes (natural and artificial), streams, tanks, and wells, and all these sources are fouled systematically; that most sacred river, the Ganges, is a vast sewer receiving the sewage of all the sewered towns on its banks, whether by underground or surface conduits, and also dead bodies more or less burnt according to the means of the survivors. The bodies of children are not burnt, and those of persons who have died from epidemic or contagious diseases are hurried by night to the river in order to avoid the attentions of the health inspector. The funeral dirge of the dead as the body is carried to the river may be heard in the small hours by people who sleep in hot weather on the flat roofs of houses. The resident engineer of Cawnpore city had occasion to visit Bhugwat Ghat, the most popular bathing place, on a public holiday. About 200 people of all ages and of both sexes were in the river, and a few yards above the ghat, and in the current flowing to the bathers, was a cholera corpse stranded on a small sandbank. The body had not been burnt, except on the lips with a hot ember, and it was in process of dissection by adjutant (scavenger) birds, which always begin their work by attacking the intestines, the contents of which were carried among the bathers. The latter all washed their mouths and drank of the water, and many carried home pots filled with it for domestic consumption. Others would walk home in their wet clothes even on cold mornings. All this is done in obedience to religious injunction. Hindus have a curious and widespread belief that flowing water purifies itself. The engineer above mentioned found a dhobi washing clothes in the Ganges on a convenient sandbank a few yards below the outfall of a Cawnpore sewer. The reason the man gave for choosing this spot was that the bank was convenient for drying, and that running water purifies itself. The engineer had occasion to inquire how far the sewage of the city could be traced down stream, using samples from above the sewers for comparison. Traces of sewage were found 18 miles below Cawnpore, although at the time only a small proportion of the sewage reached the river. Streams are fouled by every village they pass. The banks close to the stream are used as a public latrine, so that the people may make the special ablution that they say their religion prescribes. Contagion of various kinds may thus pass from village to village. A serious epidemic is generally followed by a pilgrimage to some shrine situated near some tank, river, or spring, and here the national habits come into play and are the cause of much anxiety and hard work among the public health and public work officials, who, to succeed, must combine much diplomacy with their science. There is nothing the Hindu is more jealous of than what he calls his religious customs.

Danger of Open Wells and Tanks.

Public wells are fouled continually from the time they are opened for use until the sickness of the users calls for cleansing. Popular tradition is again against the Hindu, for he believes that all drinking-water should "see the sun" which improves its quality, so his well is kept open; birds build in its crevices and trees grow by its edge, whose leaves drop into the water and decay. Fish and turtles are often put into the well with a view to improve the water, and as each user has his own rope and vessel, which, when not in use, are stored on the ground, the chances of contamination are numerous. It never occurs to the people that as the best water comes from the dark strata at the bottom of a new well, sunlight should not be admitted, and yet at the present time the corporation of Bombay meets with strong opposition from certain of the wealthy but half-educated citizens against the closing of wells, based upon religious grounds that ignore all reason and argument. In Bombay wells have been kept open with the certain risk of fouling, and with disastrous

results. The breeding of mosquitoes and the increase of malarial fever is greatest in the most densely populated wards of the city, where many of the old wells sunk in dwelling houses before the construction of the waterworks in 1859 are still in use. These wells are in a shaft common to every storey of the old houses, so that each flat can draw its own water. Such a well must, of course be kept open, and it furnishes a perfect breeding place for mosquitoes. Bombay has waterworks supplying at the rate of 32 gallons per head per day to the town, but, owing to lax control, the people have been bred in habits of wastefulness, so that the supply is never equal to the demand. Three-fourths of the population, belonging to the coolie class, never use more than 7½ gallons per day, but they will waste ten times that quantity if allowed. Waste has brought about an intermittent supply and the use of roof tanks for the storage of water. These tanks are closed and furnished with ball-cocks and lids. The admirable report on the causes of malaria in Bombay, recently prepared for the Government by Dr. C A. Bentley, has directed the attention of some of the citizens to their own premises. Many of them found that the lids of their roof tanks had been opened by the servants that the water might "see the sun," and the contents were found to be swarming with mosquito larvæ. This explained why the upper storeys, whose rents were highest, were infested with mosquitoes, while the lower rooms were comparatively free. Many villages and small communities depend for their water-supply on tanks, many of which, although their level may vary, are never dry at any season, and as each season's growth of water plants is followed by a deposit at the bottom of dead vegetation which is never cleaned out, impurities accumulate year by year. In addition there are the dejecta of fish and birds to be added, so that in spite of constant exposure to the sun the tank water is never pure. In the reservoirs of waterworks impurities chiefly of a vegetable kind accumulate. The new Vehar reservoir of Bombay was full in 1859, and was opened in 1860. In May, 1865, owing to deficient rainfall, the working level fell to 44 feet on the water tower gauge. The supply was at that time discoloured, thickened with vegetable matter, and offensive to taste and smell. The deaths registered in that month were 100 per cent. above the average. Forty-four feet of water had already been rendered impure by a very minute weed, one of the confervoid algæ, which in clear water seems to thrive at various depths, and on decaying gives off sulphuretted hydrogen. All permanent open bodies of water in India are invaded by plants, fish, birds, and crocodiles, and in many places the destruction of animal life in municipal reservoirs is strongly objected to on religious grounds by members of the municipal council. The choice of sources of supply for municipal waterworks has been rendered very difficult, for unless the catchment area is in a very sparsely populated district it is open to contamination. This often involves a long and expensive lead for the water.

Methods for Purifying Water.

India is a country in which the purification of supplies of potable water should be effected by chemical means rather than by the open sand filter; but here again popular apprehensions are on the lookout for "defilement," and modern systems, although in successful use in several places—notably at Betmangala, the source of supply of the Kolar gold-fields, where sulphate of alumina has practically abolished cholera—are objected to. The treatment of impure water at waterworks has been a good deal facilitated in America by an adaptation of the Venturi meter, by means of which the corrective, in liquid form, is introduced into the raw water main without the aid of a pump, and at a rate governed by the rate of flow, so that the proportion of corrective in relation to volume of water remains constant. This system is said to arrest deposits on the inner surface of the main, and the precipitate may be separated either in a settling tank or in one of the well-known pressure filters forming part of the main. When a natural head is available this arrangement offers a very cheap combination for a supply of drinking water. The popular idea regarding filtering sand was curiously illustrated in the municipal council of Cawnpore. A deputation of councillors waited on the construction engineer of the waterworks and informed him that, if possible, they would like the filtering sand to be taken from the Ganges as it contained particles that looked like silver, which made the water "more digestive." "Here," replied the engineer, "is a sample of sand straight from the river, and there is a second sample after 27 per cent. of mud has been washed out of it. You may now see the silvery particles with a lens; they are simply mica, which has no chemical affinity for water, but as the sand when cleansed is of a quality suited for filters it will be used to prepare the river water for your use." This explanation did not affect the popular belief, though the deputation returned to the municipal council with a satisfactory report. Among the schemes of primary education that at present are so much discussed in the Indian press there is no subject more deserving of attention than that of drinking-water and the care that should be taken to preserve it from fouling. If properly presented in primary schools it would certainly interest the pupils and would convey to them truths that would be of immediate and lifelong use.

Nastin B in Leprosy.

A report on Experiments with Nastin B on Leprosy, by Major S. Anderson, I.M.S., and Major L. Rogers, I.M.S., with notes by Colonel G. F. A. Harris, I.M.S., has just been issued in Calcutta. The report deals with the trial of the remedy at the Gobra Leper Asylum and the asylum at Purulia. The following are Major Anderson's conclusions: 1. All the cases treated improved in general health and gained in weight. 2. There was usually a marked local reaction in the nodules, or lepromata, and the general reaction was marked in many cases. In the nodular and mixed variety the commencement of improvement in a particular area was signalled by tingling or creeping sensations in the part. Treatment with intervals of rest is necessary; each case must be treated on its merits; and those patients who were most tolerant of nastin, and in whom no reaction occurred, undoubtedly showed the most improvement. 3 The improvement in the anæsthesia patches was generally marked; "all the cases showed an improvement in this respect." 4 Major Anderson's temperature charts show the action of the nastin. It is important to note that the injection of nastin was well borne so long as the air temperature did not exceed 100° F. He therefore recommends its use preferably in cold weather. He concludes by stating that "the nastin B treatment constitutes a real advance, and whilst it undoubtedly aborts the leprous processes in the same way as mercurials do in syphilis, and just as in syphilis one cannot say that the cure is permanent, so the same applies to nastin in leprosy." He considers nastin useful for prophylaxis and can immunise a patient so that he shall be no longer a danger to the community.

Malaria in Bombay.

Dr. C. A. Bentley, after investigating for two years the incidence of malaria in Bombay, has issued a valuable report. It shows an appalling prevalence of the disease, which is estimated at an annual pecuniary loss of 13 lakhs. He makes it clear that the island naturally is not very malarious, but that it is the highly developed portion of the island which is chiefly affected. Figures show that 75 per cent. of the breeding places of the anopheles are the wells and cisterns in and about houses. The Government of Bombay in a resolution says: (1) Measures should be directed against all mosquitoes, but the suppression or reduction of the species of anopheles that carry the disease must first be aimed at; (2) the measures must be so contrived and directed as to bring about not merely a mitigation of the disease, but the eradication of autochthonous malaria from the city; (3) the more rapidly the measures are carried into effect the greater will be the certainty of their complete success; (4) the main sources of infection are at present localised, but failing effective measures they may spread throughout the island. The responsibility for carrying into operation these measures devolves upon the municipal corporation of Bombay, and the Governor in Council trusts that the corporation will address itself to the task with energy and carry through the operations to success without delay. Dr. Bentley shows that, for an annual expenditure that may vary between two and five lakhs, Bombay could be completely freed from mosquitoes. The cost of measures directed against the malaria-carrier alone would not be much more than one lakh annually for the less infected wards, and the three worst infected wards could be adequately dealt with for half a lakh a year. The use of quinine as a prophylactic must not be neglected. It is to be trusted that the corporation will give early effect to this report.

August 8th.

Obituary.

GEORGE FIELDING BLANDFORD, M.A., M.D. OXON., F.R.C.P. LOND.,

LATE LECTURER ON PSYCHOLOGICAL MEDICINE AT ST. GEORGE'S HOSPITAL.

Dr. George Fielding Blandford, who died at his home in Tunbridge Wells on August 17th, was born on March 7th, 1829, at Hindon, Wiltshire, where his father, George Blandford, was a medical practitioner. He received his early education at Tonbridge School and went to Rugby, during the headmastership of Dr. Arnold, in 1841. Among those who entered Rugby in the same term were the late Professor F. J. A. Hort of Cambridge and Senator W. H. Waddington, Prime Minister of France under M. Grévy. In 1848 he matriculated at Wadham College, Oxford, where he took his B.A. degree in 1852, and at once entered on the study of medicine at St. George's Hospital. After proceeding to the M.A. degree in 1854 he qualified as L.S.A. in 1857, took the M.B. of Oxford in the same year, and became M.R.C.S. in 1858. In 1860 he was admitted a Member of the Royal College of Physicians of London. In 1867 he proceeded to the M.D. degree at Oxford, and in 1869 was elected a Fellow of the Royal College of Physicians.

Early in his professional career Dr. Blandford went for a short time to St. Luke's Hospital, Old-street, where he became acquainted with the late Dr. A. J. Sutherland, physician to the hospital and owner of the private asylum for male patients then known as Blacklands House, Chelsea, but later removed to Tooting under the name of Newlands House. Dr. Blandford went as resident medical officer to Blacklands House, an appointment at first intended to be merely temporary; but it was probably this appointment that determined his ultimate life work. In 1863 he entered on private practice, first in Clarges-street, but subsequently removing to Grosvenor-street, and then to Wimpole-street. He continued his connexion with Blacklands House (and its successor Newlands House) as visiting physician, and became physician also to Otto House, Kensington, a similar institution, under the same proprietorship, for ladies. These appointments he held until his retirement in 1909, so that his connexion with these institutions remained unbroken for about half a century. From 1874 to about 1895 Dr. Blandford was the principal proprietor of, and visiting physician to, Munster House Asylum at Fulham. This was ultimately closed and converted into a building estate, in consequence of the change in its surroundings by the extension of London making it no longer suitable for an asylum.

It will thus be seen how closely and importantly identified through his long career as a consultant physician Dr. Blandford was associated with psychological medicine, but he never allowed devotion to specialism to narrow his interests. While he was for many years lecturer on psychological medicine to St. George's Hospital Medical School, he served on the council of the Royal College of Physicians in 1887–8–9. In 1887 he attended the International Medical Congress at Washington, U.S.A., where he delivered the Address on Medicine on "The Treatment of Insane Patients." This address had been prepared for delivery to the Section on Mental Diseases, and he was altogether taken by surprise on finding that an address intended for an assembly of specialists was to be delivered before the Congress as a whole, but no one was more qualified than he to show how the developments and ramifications of a special subject must affect medicine generally. Dr. Blandford was a Fellow of the Royal Society of Medicine and had been vice-president of the Royal Medico-Chirurgical Society. He was also a past president of the Medico-Psychological Association of Great Britain and Ireland, and was president in 1894 of the Psychological Section of the British Medical Association, when he delivered an address on the "Prevention of Insanity." This address will be found in our columns and was recognised as an important pronouncement upon the development of neurotic affections attributable to the greater demands made by the requirements of modern life on the nervous system. The lecturer demonstrated that the exigencies of a complex civilisation, growing daily more complex, might result in the deterioration or exaggeration of certain faculties with a disturbance or complete overthrow of their proper balance, and urged that every effort should be made by attention to the important factor of heredity to prevent neuroses from becoming accentuated and intensified. Dr. Blandford stated that he had long been of opinion that insanity could be prevented chiefly by limiting the propagation of affected persons, and broadly gave it as his opinion that no man or woman should marry who has had an attack of insanity. From his personal observation he was inclined to adopt the view that the taint was transmitted through the female rather than through the male. He concluded his eloquent address by insisting upon the care that should be taken in the physical and mental nurture of children. At the time of his death he was president of the Society for the Relief of Widows and Orphans of Medical Men. In 1895 Dr. Blandford delivered the Lumleian lectures on "The Diagnosis, Prognosis, and Prophylaxis of Insanity" before the Royal College of Physicians of London. These lectures we published in full in THE LANCET. While the lecturer's discussion of insanity invaded the highest provinces of physiology, his remarks upon the tyranny of the examination system, which were received by his learned audience with uncompromising approbation, formed a most important part of the course. His words were not a sweeping indictment of modern educational methods in general, for he was mainly alluding to cases where there existed some predisposition to nervous breakdown. But he warned the College that while even the normal students are frequently overtried by the tests which the examination system may lay upon their intelligence, their temper, and their self restraint, to those who are mentally unstable such tests are positively dangerous. The gist of his advice was that where deficiency or instability was noted by parents or by medical advisers the optimistic view that the child may grow out of "it" must not be too readily followed. The words in which he delivered his message are as weighty to-day as they were then.

Of his contributions to medical literature, his text-book on "Insanity and its Treatment" passed through four English editions, the first in 1871, the last in 1892. An American edition also was published in Philadelphia in 1871, and in Germany a German translation by Dr. H. Kornfeldt. The value of this text-book was recognised on its first appearance, the practical parts of the volume being in particular written in a manner which made them very useful to busy practitioners. Dr. Blandford supplied a series of clear sketches of the actual varieties of insanity met with in practice which were at once more accurate and more comprehensive than any which had previously appeared in English manuals; while with regard to treatment, especially in relation to the all-important matter of feeding, he afforded useful guidance. His directions for the medical man in regard to legal complications which must arise in lunacy practice were admirable, as were his directions of the process of examining suspected lunatics.

He was also the author of the article, "Insanity," in Quain's Dictionary of Medicine; of those on the "Prevention of Insanity" and the "Prognosis of Insanity" in Tuke's Dictionary of Psychological Medicine; and of that on "Insanity" in the "Twentieth Century Practice of Medicine." He contributed also various lectures and papers on kindred subjects to our columns, the *Medical Times and Gazette*, *St. George's Hospital Reports*, the *Journal of Mental Science*, and the *Fortnightly Review*. In all his writings the same blend of academic learning and practical good sense, to which we have alluded above, was apparent. He was at one time also a contributor to the *Cornhill Magazine*, but many years ago he ceased contributing to general literature, which was considered by many a pity, as his classical education gave a cultivated turn to his tastes, and he had considerable literary gifts. His chief relaxation was sketching, which he took up somewhat late in life. In books, pictures, prints, and other objects of art he found continual pleasure, and he had the collectors' spirit which, though never indulged by him to an inordinate extent, found an outlet at different periods in accumulating old books and bindings, "Cruikshankiana," prints, etchings, and in particular a considerable collection of books and views relating to old London. He parted with these, however, in the autumn of 1909, when he retired from practice and went to Tunbridge Wells to spend the remainder

of his days. Dr. Blandford had been a member of the Athenæum for very many years.

When young, Dr. Blandford was active and athletic, accustomed to riding from his earliest years, a good cricketer, playing in both his school and college elevens, a footballer, and an oarsman. He took also an early part in the Volunteer movement, belonging for several years to the 2nd (South) Middlesex Regiment. But with the increase of professional work active occupations were given up, and for many years before his death he had led a quiet and sedentary life, which was, in fact, more and more forced upon him by rheumatism. Except for this condition, which had troubled him for years, though without incapacitating him, Dr. Blandford enjoyed remarkably good health from childhood up to the time of his last illness, which began in June last with severe general rheumatism, rendering him quite helpless, and which was complicated later by broncho-pneumonia and cardiac failure. He slowly improved after the first severe attack, and the week before his death was able to leave his bed, but he was sorely tried by the hot weather, so that his strength gave out and further cardiac attacks took place. The end came suddenly and unexpectedly.

Dr. Blandford married in 1864 Louisa, only daughter of the late Rev. George Holloway, by whom he had two sons and two daughters. His widow and all his children survive him.

Dr. Thomas Buzzard writes: "An uninterrupted friendship of some 48 years has been broken by the death of Fielding Blandford, with whom I became acquainted when he was resident medical officer at Blacklands House, Chelsea, and later was for long years more intimately associated, especially when, after his marriage, he lived in Grosvenor-street, a few doors from my house. A wise physician, eminently qualified by his quiet composure of manner and excellent judgment, to give most reassuring counsel in the branch of the profession which he distinguished, Blandford possessed besides qualities which endeared him to a large circle of friends. Perhaps a distinguishing quality in his practice as an alienist physician was his practicality. He appeared to know intuitively what were the best steps to be taken in the management of difficult and troublesome cases. Fully alive to, and regardful of, the progress of scientific medicine, to which he made no mean contributions, he was no less interested in art and music and literature. He originated, when in Grosvenor-street, a Shakespeare reading club, which used to meet periodically—mostly at his house—and which was a source of great pleasure during many years to my own and other families. The Grosvenor Musical Society, too, a gathering of amateur musicians which met alternately at the members' houses, was another institution of interest in which he took delight, and in which he was intimately associated with many now deceased whose names will be long remembered—the late Dr. Anstie, Sir J. Burdon-Sanderson, Sir J. Russell Reynolds, Lord Herschell (then a young barrister), Dr. C Bland Radcliffe, and others. In art Blandford took great interest. He was an early admirer of Whistler's work, of which, long before that artist attained celebrity, he acquired many specimens in the form of etchings. His delight, too, was in water-colour paintings, and he never failed to bring back from his travels in holiday time many sketches by his own brush. Blandford was a man upon whose sound judgment one could always rely—a staunch friend, genial in his nature and eminently companionable, as free from 'fads' as he ever was from any excitement in manner, so that his memory will always be associated, I think, in the recollection of those who enjoyed his friendship, with the idea of one who was always welcome, was never tedious, and who somehow brought with him an atmosphere of good fellowship, hopefulness, and repose."

FRANK PIERCE FOSTER, M.D. NEW YORK.

Dr. Frank P. Foster, for 31 years editor of the *New York Medical Journal* and *doyen* of the medical journalistic profession in America, died at Chadwick, N.J., on August 13th. Having suffered for the last three years, especially during 1911, from cancer of the throat, death came as a relief. Dr. Foster was born in Concord, N H., on Nov. 26th, 1841, of old New England stock, his mother being a niece of Daniel Webster, and received a thorough education at the public school of his native town. In the curriculum of the schools of New Hampshire at that time were included such studies as Latin and Greek; English was also taught thoroughly; and here Dr. Foster laid the foundation of his considerable philological knowledge. At the age of about 15 years he became a pupil of Dr. Lyman Gage, a physician of more than local celebrity, who introduced him to the study of botany, anatomy, and physiology. Thus prepared he entered the medical school of Harvard in 1857, taking his M.D. degree, however, in the College of Physicians and Surgeons, New York, in 1862. He then became an interne at the New York Hospital, where he remained for two years. He next joined as ship's surgeon a Pacific mail steamer, making a voyage through the Straits of Magellan to San Francisco. This left much time on his hands, of which he made good use by studying German, thus laying the foundation of that knowledge of the German language and literature which was subsequently so extended that in 1900 he was selected to edit, with Dr. E. Althaus, a revised edition of Adler's German and English Dictionary, which appeared in 1902. Returning *viâ* Panama in 1864, he became a contract surgeon in the United States Army, which position he held until the close of the Civil War, being for some time stationed in Baltimore. In 1865 he settled in New York, where he subsequently resided. At first he practised general medicine, but later took up as specialties dermatology, and afterwards obstetrics and gynæcology; an ingenious method of extracting the fœtus after transverse presentation now bears his name. In 1871 he introduced the manufacture of vaccine into America under the auspices of the New York Dispensary. Two years later, in 1873, he sojourned for half a year in London. Soon after his return to New York he was offered the chair of obstetrics at Yale University, which, however, he declined. During the "seventies" he held the position of librarian of the New York Hospital, a position eminently suited to his scholastic tastes.

On Jan. 1st, 1880, Dr. Foster assumed the editorship of the *New York Medical Journal*, founded in New York in 1865 by the late Surgeon-General William A. Hammond, United States Army. The *Journal* was then a monthly publication, as it had been since its foundation, and was so continued for three years, but in 1883 it became a weekly medical journal, which it has since continued to be. In July, 1900, the proprietorship of the *Journal* passed from D. Appleton and Company to the A. R. Elliott Publishing Company. In 1902 the *Journal* absorbed the *Philadelphia Medical Journal* and in 1906 the *Medical News*. In the early "eighties" Dr. Foster became editor of the well-known Encyclopædic Medical Dictionary which bears his name. It took 12 years to prepare and publish four massive volumes, and the work has been translated into seven languages. He was also the editor of a "Reference Handbook of Practical Therapeutics," in two volumes, and was on the editorial staff of the Standard Dictionary. Dr. Foster's knowledge of languages, both ancient and modern, was widely recognised during all these years. In the use of the English language he was conservative, preferring that our tongue should be left to the natural processes of evolution and not urged forcibly into novel paths by enthusiastic doctrinaires. When the American Medical Association decided upon a revision of the medical nomenclature Dr. Foster was chosen chairman of the commission and wrote the reports presented in 1909, 1910, and 1911. His editorial contributions to the *New York Medical Journal* were naturally very numerous, always excelling in their style and the correctness of their English; they referred to all branches of medicine as well as to other subjects of obvious interest to his readers. Under his wise and well-planned guidance the *Journal* acquired a leading place in American medical journalism.

Dr. Foster was also one of the 100 honorary members of the Medical Reserve Corps, United States Army, for his activities were varied and untiring. He was a strenuous supporter of the Academy of Medicine at the earliest times, when the meetings were held in the small chapel of the University of the City of New York, then situated in University-place, facing Washington-square. He also took an active part in the "code fight" in the Medical Society of the State of New York. He was a member of the Dermatological Society, which he helped to found, and of which, in later years, he became an honorary member.

Charitable in his judgment of others, willing to assist and help his friends, gladly giving from his great store of

knowledge, a master of the pen, he will be gratefully remembered by everyone who had the good fortune to become associated with him.

Mr. Kenneth W. Millican writes: "May I be permitted, as a former colleague of Dr. Foster on the *New York Medical Journal*, to add a few words of appreciation to the foregoing obituary notice? My acquaintance with Dr. Foster began at a meeting of the Mississippi Valley Medical Association at Louisville, Ky., in 1897, which resulted in his making me the offer early in 1898 to become associate editor with him of the *New York Medical Journal*, which was gladly accepted, the association continuing until 1904. I remember well the qualities as they emerged under my observation that made Dr. Foster such an admirable editor. I was first struck by his patience and gentleness when dealing with the results of inexperience in the work of the journal. He was never irritated at errors, nor did he content himself with merely pointing out the thing that was wrong and giving instruction for future guidance, but in the most patient manner he expounded the broad principles of journalism underlying the point in question. The next point was his devotion to accuracy, particularly in regard to references and to making detailed acknowledgment of anything taken from any other periodical or work. This, as he constantly insisted, was due, not only to oneself, lest one inadvertently made oneself responsible for the errors of others, and to the readers, that they might be able to fulfil the golden rule to 'verify references,' but even more to the author, who was entitled to the full credit for his work, and to the journal which was equally entitled to credit for giving it publicity. His carefulness in avoiding expressions in his own writings that might cause pain to others, and insisting on the elimination of such expressions from contributed matter, was, I am sure, widely appreciated throughout the medical profession of America. A 'pen dipped in gall' was to him an abomination. As time went on, one learnt further to appreciate his breadth of view, which led him on more than one occasion, in which subsequent events justified his judgment, to deprecate premature enthusiasm in the acceptance of novel discoveries or views, no matter how great the authority of those by whom they were sponsored. Still later one became impressed with his wide judgment of personalities in the medical profession, not only of America, but of Europe. He seemed to take a mental measure of the character and capacities of every medical man, writer or practitioner, who came into national or international prominence, and one which, so far as I was able to check it through personal acquaintance with the men in question, was nearly always correct. In like manner his estimate of the various medical periodicals, not only American but European, was keen and discriminating. I never knew him to resent honest criticism or to allow himself to be guided by bias or personal interest into unfair criticism of others. As to his scholarship, while it was undoubtedly wide, it was shown not so much in the detail he was able to carry in his memory as in his remarkable capacity for knowing instantly where to turn for such authentic information as existed on any conceivable subject, medical or otherwise, that might incidentally crop up. Dr. Foster was universally liked and respected, and he will be sincerely mourned throughout the medical profession of America."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Otto Simon, chief surgeon of the Carlsruhe Hospital, from septic poisoning.—Dr. Albert Schinzinger, formerly extraordinary professor of surgery in Freiburg, aged 84 years. His published papers dealt chiefly with fractures and dislocations.—Dr. Paul Ziegler, *privat-docent* of surgery, in Munich.—Dr. E. Schwachten, of Berlin, chief railway surgeon of the Prussian and Hessian system.—Dr. A. Breglia, *privat-docent* of anatomy in the University of Naples.—Dr. W. Bailey, formerly professor of materia medica and therapeutics in the University of Louisville.—Dr. Henri Nicolas, formerly surgeon to the Marseilles Hospitals.—Dr. Mario Panizza, *privat-docent* of Medical Pathology in the University of Rome.—Dr. E. A. Lewis, formerly professor of anatomy in Long Island Medical College Hospital, Brooklyn.—Dr. Rava, professor of ophthalmology in the Sassari Medical School.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in August the following candidates passed in the subjects indicated:—

Surgery.—A. E. L. Devonald (Sections I. and II.), St. George's Hospital; E. M. E. Hall (Section II.), Royal Free Hospital; G. W. B. James (Sections I. and II.), St. Mary's Hospital; J. S. H. Lewis (Section II.), University College Hospital; G. S. Richardson (Section I.), Leeds; and R. M. Wingent (Section II.), Guy's Hospital.

Medicine.—E. E. Allen (Section I.), Royal Free Hospital; G. W. B. James (Sections I. and II.), St. Mary's Hospital; R. Lamort, Bordeaux; F. G. Norbury (Section II.), Glasgow; and W. H. Watson (Section II.), Guy's Hospital.

Forensic Medicine.—A. E. L. Devonald, St. George's Hospital; G. W. B. James, St. Mary's Hospital; J. S. H. Lewis, University College Hospital; P. J. Montgomery, Middlesex Hospital; and W. H. Vincent, St. Mary's Hospital.

Midwifery.—L. K. Edmeades, Guy's Hospital; A. Fordham, University College Hospital; G. W. B. James, St. Mary's Hospital; and C. W. Jenner, London Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—A. E. L. Devonald, E. M. E. Hall, G. W. B. James, J. S. H. Lewis, and W. H. Watson.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amiens:* Dr. Braillon has been appointed Professor of Clinical Medicine in succession to Dr. Bernard. Dr. Courtellement has been appointed Professor of Medical Pathology.—*Amsterdam:* Dr. F. S. Meijers has been recognised as *privat-docent* of Forensic Psychiatry.—*Angers:* Dr. Jurlais has been appointed Professor of Physiology.—*Basle:* Dr. Rudolf Stähelin of Berlin has been appointed Professor of Clinical Medicine in succession to Dr. D. Gerhardt.—*Budapest:* Dr. Körösi has been recognised as *privat-docent* of the Physiological Effect of Foods.—*Buenos Aires:* Dr. Marcelo Viñas has been appointed to the chair of Clinical Surgery.—*Florence:* Dr. Carlo Comba of Bologna has been appointed to the chair of Pædiatry, in succession to Dr. G. Mya, deceased.—*Genoa:* Dr. Augusto Ducrey of Pisa has been appointed to the chair of Dermatology, in succession to the late Dr. G. Profeta. Dr. Giuseppe Lanza of Palermo has been recognised as *privat-docent* of Pædiatry.—*Göttingen:* Dr. Reichenbach of Bonn has been appointed Professor of Hygiene and Director of the Hygiene Institute in succession to Professor E. von Esmarch, who is retiring.—*Heidelberg:* Dr. W. Gross has been recognised as *privat-docent* of Pathological Anatomy.—*Iurieff (Dorpat):* Dr. Liutkevich has been appointed Professor of Ophthalmology.—*Königsberg:* Dr. Harry Scholtz has been recognised as *privat-docent* of Medicine and Dr. W. Telemann as *privat-docent* of Medicine.—*Lemberg:* Dr. Julius Marischler, *privat-docent* of Medicine, has been granted the title of Extraordinary Professor, and Dr. Victor Felix Reis has been recognised as *privat-docent* of Ophthalmology.—*Modena:* Dr. Giuseppe Zagari of Sassari has been appointed to the chair of Clinical Medicine.—*Naples:* Dr. Aurelio Giovine has been recognised as *privat-docent* of Medical Pathology.—*New York:* Dr. John J. McPhee has been appointed to the chair of Neurology in the Post-Graduate School and Hospital.—*Padua:* Dr. Antonio Berti has been recognised as *privat-docent* of Physiology.—*Pavia:* Dr. Enrico Rossi of Naples has been recognised as *privat-docent* of Psychiatry.—*Poitiers:* Dr. Morichau-Beauchant has been appointed Professor of Medical Pathology in succession to the late Dr. Brossard.—*Rheims:* Dr. Bagnéris, *agrégé*, has been appointed Professor of Physics in succession to Dr. Chevy.—*Rome:* Dr. Giuseppe Noccioli has been recognised as *privat-docent* of Midwifery and Gynæcology. *Siena:* Dr. Antonio D'Ormea has been recognised as *privat-docent* of Psychiatry.—*St. Petersburg:* Dr. Redlish has been appointed Professor of Midwifery and Gynæcology in the Military Medical Academy, in succession to Dr. Rein.—*Vienna:* Dr. E. Pribram has been recognised as *privat-docent* of General and Experimental Pathology.

THE ROYAL SANITARY INSTITUTE.—The fifty-second course of lectures and demonstrations for sanitary officers which are held under the auspices of the Royal Sanitary Institute will commence on Monday, Sept. 18th, and will close on Friday, Dec. 1st. The lectures are for the most part given on Mondays, Wednesdays, and Fridays, but

an occasional lecture will be delivered on a Tuesday or a Thursday. The course is divided into two parts. The first part will consist of six lectures dealing with elementary physics and chemistry in relation to water, soil, air, ventilation, and meteorology. The second part will deal with meat and food inspection, including the taking of samples of water, food, and drugs for analysis. Among the lecturers will be Mr. A. Wellesley Harris, medical officer of health of Lewisham; Dr. E. Petronell Manby, medical inspector to the Local Government Board; Dr. J. Priestley, medical officer of health of Lambeth; and Dr. E. J. Steegmann. The inspections and demonstrations will be held mostly on Tuesday, Wednesday, and Saturday afternoons in September, October, and November, and will include visits to sewage works, disinfecting stations, municipal lodging-houses, dairies, and so forth. The lecture hour is 7 P.M. and the fee for the complete course is £3 3*s*. For the first part a charge of £2 12*s*. 6*d*. is made and for the second part £1 1*s*. Commencing on Oct. 6th, at 7 P.M., a course of lectures to assist school teachers and other students entering for examinations in hygiene in its bearing on school life, and for women health visitors and school nurses, will be held at the Royal Sanitary Institute and Parkes Museum. The lecturers will include Dr. Marion Hunter-Vaughan, Professor H. R. Kenwood, Dr. A. B. Kingsford, Dr. Eric Pritchard, and Dr. C. J. Thomas. The course will consist of 19 lectures and demonstrations and the fee is £1 1*s*. A course of practical training for meat inspectors will commence on Oct. 13th at 7 P.M. Full particulars of all these lectures can be obtained from the secretary of the institute, 90, Buckingham Palace-road, London, S.W.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE: DEPARTMENT OF APPLIED STATISTICS.—Application for admission to this department should be addressed to Professor Karl Pearson, University College, Gower-street, London, W.C. Professor Pearson, F.R.S., and Dr. David Heron, M.A., D.Sc., will meet students on Monday, Oct. 2nd, between the hours of 10 A.M. and 1 P.M. and 4 P.M. to 6 P.M. Lectures are given by Professor Pearson and Dr. Heron and laboratory work may be carried on in the Galton laboratory for national eugenics and in the biometric laboratory, which are both open daily from 9.30 to 5.30. A course of public lectures will also be given in the second term, full particulars of which will be announced later. Dr. Heron's lectures are given on Wednesdays and practical classes on Mondays between the hours of 4 P.M. and 5 P.M. on both days (fee: session, £6 6*s*.; term, £2 12*s*. 6*d*.) and consist of an introductory course on Statistics for those intending to take up social, medical, or eugenic problems. Professor Pearson's lectures are given on Tuesdays and Thursdays at 4 P.M. (fee: session, £6 6*s*.; term, £2 12*s*. 6*d*.), and are upon the General Theory of Statistics. This course lasts through the session, and students attending it are supposed to have had a preliminary training in mathematics. The course will discuss the whole modern theory of statistics, and illustrate its application to biometric and eugenic problems. Except under special conditions, students should be attending at the same time one or other of the laboratories for practical work. They will be taught on actual data to make statistical measurements and to calculate the various types of statistical coefficients; they will be shown the use of tables, mechanical calculators, and integrating mechanisms. The practical work will be performed on two days a week (fee: session, £3 8*s*.; term, £2 12*s*. 6*d*.). A fee, however, of £12 12*s*. per session admits to the laboratories on all days and to all lectures, as well as to the use of the library and material in the archives. Also students who come to the laboratories sufficiently trained to carry on research work of their own are admitted to the laboratories at a charge of £3 3*s*. per term, and are assisted in their investigations with material, instruments, and advice. The Galton Eugenics Laboratory contains a growing library on topics connected with eugenics, including Sir Francis Galton's own books; stored material bearing on social, physical, and hereditary conditions, including Sir Francis Galton's own anthropometric data; a collection of anthropometric and other instruments, chiefly from the Galton bequest; and an interesting historical collection of Galton portraits and other Galtoniana. There is a fine bronze bust of Sir Francis Galton by Sir George Frampton, R.A. The assistants in this laboratory are: David Heron, M.A., D.Sc., Galton research fellow; Ethel M. Elderton, Galton research scholar; Amy Barrington, computer; and Kathleen V. Ryley, assistant in pedigree-drafting. The biometric laboratory, which is assisted by a grant from the Worshipful Company of Drapers, possesses a good collection of calculating machines, integrating mechanisms, moment-finders, as well as a large series of statistical models, diagrams, and other apparatus; craniometric, anthropometric, and measuring instruments; microscopes, cameras, &c.; and a large collection of biometric and statistical memoirs. The assistants in this laboratory are: Julia Bell, M.A., Herbert G. Soper, M.A., Eveline Y. Thomson; and honorary assistant, P. F. Everitt, B.Sc., Benington student (in craniometry and anthropometry). The honorary secretary is H. Gertrude Jones.

Parliamentary Intelligence.[1]

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 16TH.

Schools and Epidemics.

Mr. R. GWYNNE asked the President of the Board of Education whether his attention had been called to the spread of infectious disease, resulting in some cases in numerous deaths, consequent upon the delay in closing schools after an outbreak of disease; and whether he would consider the advisability of reverting to the former system, under which local managers were empowered to close the school upon the advice of a qualified medical practitioner.—Mr. RUNCIMAN said in reply: No such case has been brought to my notice. I shall be glad to make inquiries about any case to which the honourable Member will refer me. The answer to the last part of the question is in the negative.

Phthisis in the West of Scotland.

Mr. MACPHERSON asked the Lord Advocate whether Dr. Dittmar, Dr. Dewar, and Dr. McVail, medical inspectors of the Local Government Board, had now completed their investigations into the extent to which phthisis existed among the industrial communities in the West of Scotland; and, if so, when that report would be presented to Parliament.—Mr. URE answered: I understand that reports have been received in regard to certain localities and are now under consideration. It would be premature to make any announcement as to publication.

Post Office Medical Officers.

Sir DAVID BRYNMOR-JONES asked the President of the Board of Education whether it was the usual practice of the Board of Education to nominate for the purpose of the Elementary School Teachers (Superannuation) Act, 1898, and rules, the medical officers employed by the Post Office; and, if so, on what ground was this practice adopted.—Mr. RUNCIMAN wrote in reply: Yes; the medical officers employed by the Post Office are selected with a view to work of a character similar to that which is required of doctors nominated for the purpose of the Elementary School Teachers (Superannuation) Act, 1898. They are also conveniently distributed over the country. For these reasons it has been the usual practice of the Board, with the concurrence of the Post Office, to nominate them for the duties in question.

THURSDAY, AUGUST 17TH.

Alleged Cure for Consumption.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether Dr. Kaye, medical officer of health to the West Riding county council, was requested by him to visit a maggot farm and inquire there into the alleged cure for consumption resulting from the inhalation of the substances from maggots found in putrefying meat; and, if so, what was the result of such inquiry.—Mr. BURNS replied: I have made no such request to Dr. Kaye.

Mr. BATHURST: Is the right honourable gentleman aware that it has been repeatedly stated at meetings of local authorities that he made that request?—Mr. BURNS: Yes, and I have just as repeatedly contradicted it.

Ambulance Arrangements at the Coronation.

Colonel YATE asked the Secretary of State for the Home Department whether, in view of the fact that the ambulance arrangements at the Coronation were made by the police, he would state how many members of voluntary aid detachments of the Red Cross Society did duty at the Coronation and how many members of the St. John Ambulance Brigade.—Mr. CHURCHILL replied: 2142 members of the St. John Ambulance Brigade did duty on June 22nd. The Red Cross Society offered its services, but the offer was subsequently withdrawn, as it was found impossible to ensure the attendance of a sufficient number of detachments with the requisite uniform. In consequence no members of the voluntary aid detachments of the Red Cross Society did duty.

Preserved Milk.

Mr. MOUNT asked the President of the Local Government Board whether his attention had been called to the fact that 19,000 cases of preserved mik arrived in the Port of London on Tuesday and Wednesday last; whether such milk was produced under restrictions and conditions similar to those imposed upon dairy farmers in England; and whether any tests had been made recently as to the amount of butter-fat contained in such milk, and, if so, with what result.—Mr. BURNS wrote in reply: I understand that 9000 cases of preserved milk arrived in the Port of London on Tuesday and Wednesday of last week. Examinations made during the six months ending June 30th showed that the samples tested of condensed milk made from whole milk contained an average

[1] These notes were omitted from THE LANCET last week, the issue of August 26th being the Students' Number.

of 9·76 per cent. of fat, and had been prepared from milk containing at least 3 per cent. of butter-fat. The samples of whole-milk powders contained on the average 30·1 per cent. of fat, and had been made from milk containing over 3 per cent. of butter-fat. There is no evidence to show that the sources of these imported supplies are less satisfactory from a sanitary point of view than those of home-produced milk.

FRIDAY, AUGUST 18TH.

The Nutritive Value of Bread.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether, in view of the opinion expressed by Dr. J. M. Hamill in his recently published report to the Board on the nutritive value of different varieties of bread to the effect that, in the case of poor persons whose food consisted principally of bread, it was important to recognise the fact that a loaf made from households or stone-ground or standard flour possessed more available nutrient material and energy value than one made from pure white flour, he proposed to take any and, if any, what steps to bring this fact to the notice of working men and their wives throughout the country.—Mr. BURNS answered: Copies of Dr. Hamill's report have been sent to the press and will also no doubt be shortly in the hands of medical officers. I have no reason to suppose that sufficient publicity will not be secured by these means for the conclusions arrived at.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, London.

National Association for the Prevention of Consumption and Other Forms of Tuberculosis. Transactions of the Annual Conference at Caxton Hall, Westminster, July 19th to 21st, 1911. Price 2*s.* 6*d.* net.

CHURCHILL, J. AND A., London.

The Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P. Ninth edition. Price 18*s.* net.

CURRIE, JOHN, 16, Teviot-place, Edinburgh.

Queer Patients. By M. Oston, M.D. Price 3*s.* 6*d.* net.

FISCHER, GUSTAV, Jena.

Die akuten Vergiftungen. Ein Vademecum für die ärztliche Praxis. Von Friederich Kanngiesser, Dr. med. et phil., Toxikologe an der Universität Neuchâtel. Price M.1.

Handbuch der pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle, Universität Bern, und Dr. A. von Wassermann, Universität Berlin. Zweite vermehrte Auflage. Erste (Probe-) Lieferung. Price M.2.50. Zweite Lieferung (Bd. I., Bogen 6-15). Price M.5.

Lehrbuch der Therapie innerer Krankheiten. Für Aerzte und Studierende. In zwei Bänden. I. Band. Allgemeine Therapie innerer Krankheiten. Herausgegeben von Dr. Paul Krause und Dr. Carl Garrè. Price M.11.50; bound, M.12.50.

Die Anwendung des Salvarsan (Dioxydiamidoarsenobenzol) in der ärztlichen Praxis. Eine Studie aus der Praxis für die Praxis. Von Sanitätsrat Dr. Richard Lenzmann, Prakt. Arzt und Oberarzt am Diakonenkrankenhause zu Duisburg. Price M.4.

Sammlung anatomischer und physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Trendelenburg. Heft 15. (Zweiter Band, Heft 2.) Blutkörperchen und Wanderzellen. Von Prof. Dr. Franz Weidenreich in Strassburg. Price M.1.60.

Die Bedeutung der Magenradiologie für die Chirurgie. Von Privatdozent Dr. Paul Clairmont, Assistenten der I. Chirurgischen Klinik, und Dr. Martin Haudek, Assistenten des Röntgenlaboratoriums. Price M.2.80.

Handbuch der Gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Einundzwanzigste Lieferung. Price M.4.50.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

The Goulstonian Lectures on the Sensibility of the Alimentary Canal. Delivered at the Royal College of Physicians on March 14th, 16th, and 21st, 1911. By Arthur F. Hertz, M.A., M.D. Oxon., F.R.C.P. Price 5*s.* net.

HILL, WALTER, London.

The Holidays: Where to Stay and What to See. Price 1*s.*, or post free 1*s.* 6*d.*

HIRSCHWALD, AUGUST, Berlin.

Grundriss der Zoologie und vergleichenden Anatomie für Studierende der Medizin und Veterinärmedizin. (Zugleich Repetitorium für Studierende der Naturwissenschaften.) Von Alexander Brandt, Dr. der Medizin, Dr. der Zoologie, o. Professor der Universität Charkow. Price M.14.

IMPRENTA Y PAPELERÍA LA UNIVERSAL DE RUIZ Y CA, Habana.

Actas y Trabajos del Segundo Congreso Médico Nacional, Habana, Febrero 24–28 de 1911. Price not stated.

KEENER, GEORGE, AND CO., 16A, Red Lion-square, London.

Medical Guide and Monograph Series. Pediatrics. Aphorisms, Observations, and Precepts on the Science and Art of Pediatrics. By John Zahorsky, A.B., M.D., Clinical Professor of Pediatrics, Medical Department, Washington University, St. Louis. With an Introduction by E. W. Saunders, M.D., Emeritus Professor of Diseases of Children and Clinical Midwifery, Medical Department, Washington University, St. Louis. Price 10*s.* 6*d.* net.

KING, P. S., AND SON, Orchard House, Westminster, London, S.W.

Camping for Boys. By J. H. Whitehouse, M.P., Honorary Warden of the Secondary Schoolboys' Camp. Price 1*s.* net.

The National Association for Women's Lodging-Homes. Report of the Proceedings of the National Conference on Lodging-House Accommodation for Women, held in Guildhall, London, on Wednesday, 17th May, 1911, under the Presidency of the Right Honourable the Lord Mayor and Her Grace the Duchess of Marlborough. Price 6*d.* net; post free 7*d.*

LEONARD, W. M., 101, Tremont-street, Boston, U.S.A.

One Hundred Surgical Problems. The Experiences of Daily Practice Dissected and Explained. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery, Harvard Medical School. Price $3.

LIBRAIRIE DIEMER; FINCK ET BAYLÆNDER, Successeurs, Rue Kamel, Cairo.

Mémoires présentés à l'Institut Egyptien et publiés sous les Auspices de S. A. Abbas II., Khédive d'Égypte. Tome VI.-Fascicule III. Histological Studies on Egyptian Mummies. By Marc Armand Ruffer. Price not stated.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

Essentials of Medicine. A Text-book of Medicine for Students beginning a Medical Course, for Nurses, and for all others interested in the Care of the Sick. By Charles Phillips Emerson, M.D., late Resident Physician, the Johns Hopkins Hospital. Second edition, revised. Price 8*s.* 6*d.* net.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Twenty-first Series, 1911. Volumes I. and II. Price 35*s.* net per annum (4 volumes).

MACDOUGALL, ALEXANDER, 70, Mitchell-street, Glasgow.

Transactions of the Glasgow Obstetrical and Gynæcological Society. Volume VII. Sessions 1908–1909, 1909–1910. Price not stated.

MASSON ET CIE, Paris.

Supplément aux Annales des Maladies des Organes Génito-Urinaires, 1882–1911. Recueil de Mémoires d'Urologie Médicale et Chirurgicale. Préface de M. F. Guyon. Publiés par MM. F. Widal, Pousson, Legueu, Carlier, Rafin, Bazy, Marion, Desnos, Michon, J. Janet, Jeanbrau, Heitz-Boyer. Juillet, 1911. Price not stated.

METHUEN AND CO., LIMITED, London.

The Real Cause of Stammering and its Permanent Cure. A Treatise on Psycho-Analytical Lines. By Alfred Appelt, Principal of the Institute for Stammerers, Goldington, Bedford. Price 3*s.* 6*d.* net.

MITTLER, ERNST SIEGFRIED UND SOHN, Kochstrasse, 68–71, Berlin, S.W. 68.

Medizinal-Berichte über die Deutschen Schutzgebiete, Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen, Marshall-Inseln, Marianen und Samoa, für das Jahr 1909–10. Herausgegeben vom Reichs-Kolonialamt. Price, paper, M.10; bound, M.11.

MÜLLER UND STEINICKE, RUDOLPH, München.

Die Ursachen der Glykurie. Ihre Verhütung und Behandlung. Von Dr. Franz Rosenberger, München. Price M.7.60.

PANDIT KRIPARAM SARMA, 8, Nandi Bagan Lane, Salkea, Howrah, India.

Leprosy and its Treatment. By Pandit Kripárám Sarmá. Third edition. Price not stated.

PULMAN, GEORGE, AND SONS, LIMITED, Thayer-street, Manchester-square, London, W.

Instructions in the Use of the Catheter, especially written for Male Nurses. By a Surgeon. Price 1*s.*

RAGGED SCHOOL UNION AND SHAFTESBURY SOCIETY, 32, John-street, Theobald's-road, London, W.C.

A Gate Beautiful: The Story of the Ragged School Union and Shaftesbury Society. 1910–1911. Price 6*d.*

REBMAN, LIMITED, London.

Principles of Anatomy. The Abdomen Proper. Described and Illustrated by Texts and Plates. Accompanied by 14 Plates, each 14½ in. by 10 in., with special frame for same.) Price 42*s.* net, complete.

Refraction and Visual Acuity. By Kenneth Scott, M.D., C.M., F.R.C.S. Edin. Price 6*s.* net.

RICHARDS, GRANT, LIMITED, 7, Carlton-street, London.

The Birds of the British Islands. By Charles Stonham. C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland, F.Z.S. In Twenty Parts. Parts XIX. and XX. July, 1911. Price 7*s.* 6*d.* net each part.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Spirochætes. A Review of Recent Work with Some Original Observations. By W. Cecil Bosanquet, M.A., M.D., F.R.C.P. Lond., Formerly Fellow of New College, Oxford. Price 12*s.* net.

SELL, CHARLES H., 168, Fleet-street, London, E.C.

Low's Handbook to the Charities of London. 1911. (76th Year of Publication.) Price 1*s.*

SIMPKIN, MARSHALL, AND CO., London. MENZIES, JOHN, AND CO., Edinburgh. MURRAY, ALEXANDER, Aberdeen.

The Complete Text-book of Physical Exercises. With 204 Illustrations, and Music. Specially adapted for the Use of Public Elementary Schools. By Isabel Murray, Certificated Physical Instructor and Lecturer and Demonstrator on the Effects of Physical Training on Health in Aberdeen, Edinburgh, and Glasgow. Price 3*s.* 6*d.* net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London.

The Grouse in Health and in Disease. Being the Final Report of the Committee of Inquiry on Grouse Disease. In two Volumes. Price not stated.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, London, W.

Year Book of the Society of Tropical Medicine and Hygiene. Session 1911–1912. Price not stated.

TÖPELMANN, ALFRED (VORMALS J. RICKER), VERLAG VON, Giessen.
Zur Historischen Biologie der Krankheitserreger; Materialien, Studien und Abhandlungen. Gemeinsam mit V. Fossel, Graz; T. v. Györy, Budapest; W. His, Berlin. Herausgegeben von Karl Sudhoff, Leipzig, und Georg Sticker, Bonn. 3 Heft. Grafton Elliot Smith und Marc Armand Ruffer: Pott'sche Krankheit an einer Aegyptischer Mumie aus der Zeit der 21. Dynastie (um 1000 v. Chr.). Mit zwei Tafeln. Vorausgeschickt ist eine Skizze von Karl Sudhoff: Zur Einführung und Orientierung. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BRIERCLIFFE, R., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.
BUCKLEY, J. P., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Manchester Royal Infirmary.
BURGESS, ROBERT, B.C., M.B. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for Tiverton (Devon) by the Tiverton Board of Guardians.
CARRUTHERS, WALTER D., M.B., Ch.B. Birm., has been appointed Medical Officer of Health of the Whittington and Newbold Urban District, Derbyshire.
COCKER, J. F., M.B., Ch.B. Vict., has been appointed a Senior House Surgeon at the Manchester Royal Infirmary.
COOK, ALEXANDER, M.D. Glasg., has been appointed Medical Officer of Heath for the Annfield Plain Urban District, Durham.
CORMAC, H. DOVE, M.B., M.S. Madras, has been appointed Senior Assistant Medical Officer at the Cheshire County Asylum, Parkside, Macclesfield.
DUPRÉ, W. H., has been appointed House Surgeon at the Kent and Canterbury Hospital.
FAGAN, JOSEPH P., L.K.Q.C.P., L.R.C.S. Irel. (Deputy Principal Medical Officer), has been appointed Principal Medical Officer of Northern Nigeria.
GOW, J., M.B., Ch.B. Vict., has been appointed a Senior House Surgeon at the Manchester Royal Infirmary.
GREY, E., M.B., Ch.B. Vict., has been appointed a Junior House Surgeon at the Manchester Royal Infirmary.
HOLMES, A. H., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.
HOSEGOOD, SAMUEL, M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Swinton District of the county of Lancaster.
HUNTER, C. STEWART, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of the Borough of Carnoustie.
HUTCHINSON, R. C., M.B., Ch.B. Vict., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.
LEVY, A., M.D., C.M. McGill Univ., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Central London Ophthalmic Hospital.
MANNING, HERBERT CAMPBELL, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer of Health of the County of Dorset.
MAY, Miss M., M.B., Ch.B. Vict., has been appointed Clinical Assistant at the Manchester Royal Infirmary.
MORITZ, M., M.B., Ch.B. Vict., has been appointed a Junior House Surgeon at the Manchester Royal Infirmary.
NEW, J. SHERWOOD, M.B., B.S. Lond., has been appointed Assistant Lecturer in the Department of Hygiene and Public Health at University College, London.
PARKIN, GEORGE G., M.B., Ch.B. Vict., has been appointed Second Assistant Medical Officer at the Cheshire County Asylum, Parkside, Macclesfield.
PETRIE, GAVIN E., M.B., Ch.B. Aberd., has been appointed Third Assistant Medical Officer at the Cheshire County Asylum, Parkside, Macclesfield.
ROBINSON, JOHN E., M.B., B.S. Lond., has been appointed Medical Officer of Health of the County of Dorset.
SAWDON, G. E., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.
SNEATH, W. A., M.B., Ch.B. Vict., has been appointed a Junior House Surgeon at the Manchester Royal Infirmary.
STEWART, GEORGE IRVINE THOMPSON, M.B., C.M., D.P.H. Aberd., F.R.C.S. Eng., has been appointed Medical Officer of Health for the County of East Suffolk.
STIRLING, WILLIAM, Jun., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer at the Barnes Convalescent Hospital of the Manchester Royal Infirmary.
STUART, FRANCIS W., M.B., Ch.B. Aberd., has been appointed Senior House Surgeon at the Coventry and Warwickshire Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.
BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board and residence.
BIRMINGHAM, QUEEN'S HOSPITAL.—One House Physician and One Obstetric and Ophthalmic House Surgeon, for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
BRADFORD ROYAL INFIRMARY.—Two House Surgeons; also House Physician; all unmarried. Salary in each case £100 per annum, with board, residence, and washing.
BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, attendance, &c.
BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £80, with board, residence, &c.
BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.
CARLISLE DISPENSARY.—Resident Medical Officer. Salary £150, with apartments.
CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.
COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.
COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.
CROSSLEY SANATORIUM, Delamere Forest, Cheshire.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.
DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £125 per annum. Also Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum. With board, apartments, laundry, &c., in each case.
DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with full board and residence.
DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.
FLINTSHIRE EDUCATION COMMITTEE.—Assistant to County Medical Officer of Health and School Medical Officer. Salary £250 per annum.
GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.
GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry. Also Two House Physicians, one for six months, the other for eight months; and Two House Surgeons, one for four months, the other for six months. Salary in each case at rate of £40 per annum, with board, lodging, and laundry.
GREENWICH UNION INFIRMARY AND WORKHOUSE.—Junior Assistant Medical Officer. Salary £100 per annum, with apartments, rations, and washing.
HASTINGS, EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing. Also Assistant House Surgeon. Salary at rate of £50 per annum, with rooms, board, and washing.
HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.
LEEDS GENERAL INFIRMARY.—House Physician for six months. Board, residence, and washing provided.
LEICESTER INFIRMARY.—House Physician. Salary at rate of £100 per annum, with board, lodging, and washing.
LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.
LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.
LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.
LIVERPOOL, UNIVERSITY OF.—Chair of Pathology. Salary not less than £600 per annum.
MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.
MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Salary £100 per annum. Also Resident Medical Officer for six months. Salary £40.
MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.
MANCHESTER WORKHOUSE INFIRMARY, Crumpsall.—Visiting Surgeon. Salary £150 per annum.
MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.
MULLINGAR DISTRICT LUNATIC ASYLUM.—Resident Assistant Medical Officer, unmarried. Salary £112 10s. per annum.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Honorary Assistant Surgeon.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.
NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.
PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.
PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.
POSTAL SERVICE.—Medical Officer for the Shepherd's Bush Postal Sub-District, Loftus-road, Shepherd's Bush. Salary £35 per annum. Also Medical Officer for the West Kensington Postal Sub-District Blythe-road, West Kensington. Salary £68 per annum.
PRESTON ROYAL INFIRMARY.—Senior House Surgeon, unmarried, for six months. Salary £80 per annum, with board, residence, and washing.
ROCHDALE INFIRMARY.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House

Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon, each for six months. Salaries at rate of £50 per annum, with board and residence.

ST. PANCRAS (SOUTH) INFIRMARY AND WORKHOUSE.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer. Salary at rate of £150 per annum with residential allowances.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician for six months. Salary £80 per annum, with board, residence, and laundry.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Fourth Assistant Resident Medical Officer. Salary £120 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WINDSOR, KING EDWARD VII. HOSPITAL.—House Surgeon, unmarried. Salary £130 per annum, with residence, board, laundry, and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Act at Biggleswade, in the county of Bedfordshire; and at Overton, in the county of Flintshire.

Births, Marriages, and Deaths.

BIRTHS.

BADCOCK.—On August 25th, at Croxted-road, Dulwich, S.E., the wife of C. Halford Badcock, M.R.C.S., of a daughter.

WALDO.—On August 24th, at Lansdowne-road, Holland Park, W., the wife of Frederick Joseph Waldo, M.D., Barrister-at-Law, of a daughter.

WATSON.—On August 30th, at 2, Ripon-road, Harrogate, the wife of William Bertram Watson, M.D., of a daughter.

MARRIAGES.

BROWN—POTTER.—On August 26th, at St. Mary's Church, Shortlands, Captain Henry Coddington Brown, I.M.S., 47th Sikhs, to Gladys Mary, daughter of the late W. Furniss Potter.

GLANVILLE—HOME.—On August 23rd, at the Parish Church, Emsworth, Hants, Llewellyn Stanley Howard Glanville, M.D., to Dorothy Helena, daughter of the late Charles G. Home.

HIGSON—TYLER.—On August 24th, at St. Mary's, Prittlewell, William Davies Higson, M.B., D.P.H., to Mildred Barlow, daughter of John Stephen Tyler.

DEATHS.

BROWNE-WEBBER.—On June 20th, at Managua, Nicaragua, Central America, Francis C. Browne-Webber, M.D., aged 56 years.

DAVISON.—At West House, Hunstanton, suddenly, on Sunday, August 27th, Herbert Davison, Physician and Surgeon, late of Gosberton, Lincs.

INCE.—On August 23rd, at Montague House, Swanley, Kent, Surgeon-Major John Ince, M.D., I.M.S., aged 81 years.

MANTELL.—On August 22nd, at The Elms, Bathampton, Bath, Dr. A. A. Mantell, formerly Surgeon-Major in the Indian Army, aged 80 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN ASHANTI.

ACCORDING to the report for 1910 prepared by the Acting Chief Commissioner (Mr. A. J. Philbrick) the average daily number of Europeans resident in Ashanti during the year was 258 (officials 57, missionaries 5, other non-officials 193, women 3). One official and four non-officials died, or 1·86 per cent. There are European hospitals at Coomassie (the largest town, which has a population of about 19,000) and Obuasi, and native hospitals at Coomassie, Obuasi, Sunyani, and Kintampo, while at the latter place a fly-proof building has been erected for dealing with cases of sleeping sickness. There were between 80 and 90 known cases of sleeping sickness during the year. This disease is principally prevalent in the Western Province and round Krachi. Fifteen cases were treated with atoxyl injections at Coomassie. A small special isolation hospital for the treatment of this disease is being built. Dr. Kinghorn completed his tour, and has contributed a valuable and lengthy report on this subject, which will be published. He states: "Over the whole of the Western Province sleeping sickness and tsetse flies, more particularly Glossina palpalis, are common, and both are most frequent in the semi-forest country comprising the Gaman, Berekum, and Wenchi districts. The disease appears to exist in a chronic endemic form, except possibly in the area mentioned above, though it is impossible to say it is here becoming 'epidemic.'" Mr. G. J. W. Keigwin was also stationed at Krachi on special duty connected with sleeping sickness. Small-pox was prevalent throughout Ashanti, outbreaks being reported from all parts. The provincial medical officer attributes a good deal of it to the old-established Ashanti custom of inoculating healthy persons direct from those suffering from the disease. A large amount of lymph vaccination was successfully performed (2881 vaccinations in Coomassie alone), and the outbreak is being well kept under. Medical officers were stationed at Coomassie, Obuasi, Sunyani, Kintampo, and Krachi, and a nursing sister was in charge of the Coomassie Hospital throughout the year. The report gives details of the measures being taken to improve sanitation, and the Commissioner states that during his recent tours he found a most gratifying desire on the part of the native chiefs to have their villages better laid out. The supply of clean drinking water still presents a serious difficulty. The vast majority of villages depend for their supply on running streams, which often diminish to stagnant pools for weeks together in the dry season. This water is used for all purposes, personal ablutions and the washing of clothes invariably taking place in the stream itself. In some cases the Commissioner found the water supplied for his use to be so defiled as to be useless, even after boiling and filtration. Steps are being taken to remedy this state of things.

A HOLIDAY GUIDE-BOOK.

A VERY useful guide for holiday seekers is "The Holidays: Where to Stay and What to See," published by Walter Hill, 66, Southampton-row, London, price 1*s.*, post free 1*s.* 6*d.* It contains in one volume the guides to hotels, boarding-houses, and apartments of the Midland, London and North-Western, Great Northern, Great Eastern, Great Western, and Great Central Railways. These guides contain a brief account of the principal holiday resorts on the respective routes, with numerous photographs, an alphabetical list of towns with the names, description, accommodation, terms, and so forth, of the various hotels, boarding-houses, and apartment houses. Southern Ireland, the Isle of Man, the Channel Islands, and Brittany are included. There are many railway maps, lists of golf links, and much other interesting information.

EXHIBITION OF A BABY IN AN INCUBATOR.

AT a recent inquest in the Hackney Coroner's Court upon a girl child, 7 months of age, who had died from exhaustion following diarrhœa, it was elicited that a few days after the child was born, when she was recognised as being delicate and unlikely to live, the mother had been induced to allow her to be exhibited in an incubator at the "World's Fair" at Islington. The mother stated that the infant was at the "World's Fair" for a fortnight, and that the care she there received seemed to have done her good, but that after being returned to her parent she soon became as sickly as before. From the fact that the death of the child was followed by an inquest the inference may be drawn that having received her back from the exhibitors the mother did not consider it worth while to obtain medical advice with regard to her. Otherwise a certificate of the cause of death would have been forthcoming. Here it may be observed that the mother stated at the inquest that she was paid 10*s.* a week for lending a suitable baby for exhibition, and the question may well be asked whether such exhibitions should be permitted. Ethically, the exhibition itself, if held purely for gain and for no other purpose, must be held to be indecent and undesirable

for many reasons. It could, however, hardly be interfered with legally on any ground of cruelty to a child, which might be regarded as temporarily in better surroundings than those of its home. The element of pecuniary profit to the mother seems the worst feature of the case, as it excludes the suggestion that benefit to the child was the sole object of the arrangement made.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

To the Editor of THE LANCET.

SIR,—The exceptional and long-continued hot weather is specially trying to those who have to work in large cities. The fortunate minority of Londoners who are able to get away for a real holiday—say, a whole month—will surely wish that a large proportion of their hard-worked fellow-citizens should have at least a week. Few Londoners work so hard as the women and girls, some of them mere children, employed in factories. Their average working day is nine to ten hours. The Factory Girls' Country Holiday Fund provides for these workers one precious week or fortnight of fresh air. The girls themselves begin months beforehand saving a few pence each week towards their holiday, but they cannot possibly pay the whole cost out of wages varying from 3*s.* to 14*s.* a week. We have already sent away over 4000, and hundreds more are waiting to go, but our funds are now exhausted and contributions are most urgently needed.

May we conclude by quoting from a letter received from one of these working girls:—"My friend Lizzie would like to go also as she has never been away, and the change would do her good, because she is subject to faints, and she works in a room with fifteen gas rings alight, which makes it very hot, so a change of air would be very welcome." Subscriptions and donations will be thankfully received by the chairman of the executive committee, the Rev. E. Canney, St. Peter's Rectory, Saffron-hill, London, E.C., or by the honorary secretary, Miss Paget, 28, Campden Hill-square, W.

We are, Sir, yours faithfully,

BEATRICE B. TEMPLE. NORFOLK.
LOUISE CREIGHTON. SAMUEL A. BARNETT.
WILLIAM R. GOWERS, M.D. ARTHUR B. RENDEL.
HAVERSHAM. FRANK LLOYD.

St. Peter's Rectory, Saffron-hill, London, E.C., August 26th, 1911.

PRISM BINOCULARS.

Messrs. Leitz of Oxford House, Oxford-street, W., have issued a new list of prism binoculars which contains illustrated descriptions of several new models, including a glass giving a magnification of × 4 mounted as a theatre glass; one with a magnification of × 8 with an enlarged field of view and extra stereoscopic effect; one with a magnification of × 10; and another with a magnification of × 12. The catalogue also includes a useful note on the choice of a field-glass, together with information on the optics of the subject. The name of the firm is a sufficient guarantee for the high degree of accuracy which the manufacture of prism field-glasses requires, and the improvement in glass-grinding machinery and the introduction of new metal alloys have made it possible for Messrs. Leitz to produce prism binoculars highly efficient in power and moderate in price.

A USEFUL COMPENDIUM OF NEWER DRUGS.

FOR those physicians who understand German Riedel's Berichte will prove of service as a guide to the progress that is taking place in regard to new laboratory products and other remedies. It consists of four parts, in the first of which are described the investigations and analytical work done in the laboratories of the J. D. Riedel Co.; in the second the pharmaco-therapeutic progress of 1910 is described; the third is a mentor for the names, composition, qualities, and uses of the newer remedies, specialities, and technica products; while the last gives a list of the special preparations of the firm. A tabular appendix gives the specific gravities of a large number of liquids contained in the last German Pharmacopœia. The alphabetical order is followed throughout the work, thus making reference easy, while the detailed information as to doses and uses of the various preparations is reinforced by ample references to the literature. Those of our readers who may desire a copy should apply to the J. D. Riedel Co., 54, Cannon-street, London, E.C.

Annoyed must be perfectly certain of his facts before making the complaint. For example, he must not state that the druggist had not a certain preparation in stock unless he can prove it. But if he is sure of his ground, he is advised to complain to the Pharmaceutical Society who would certainly recognise that such proceedings are wrong and would, we believe, remonstrate with their member.

R.N. (*? Portsmouth*).—Our correspondent has not enclosed for our private information his name and address with his interesting letter.

G. C. W.—As far as the medical profession is concerned it seems to us that the course advocated is now too late.

Assistant Physician.—Very good, but, alas, it has appeared before.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for September, 1911:—

April-October.—Rome Exhibition (United Italy's Jubilee).
,, 29th-Oct. 26th (Turin).—International Exhibition.
May 3rd-Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th-Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th-Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th-October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th-Oct. 31st (London).—Earl's Court Exhibition.
August 28th-Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
,, 30th-Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th-Sept. 6th (Portsmouth).—British Association.
Sept. 2nd-9th (London).—Bakers' and Confectioners' Exhibition.
,, 4th-9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th-7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th-11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th-13th (Vienna).—German Urological Society.
,, 11th-13th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th-16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th-15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th-23rd (Sydney).—Australasian Medical Congress.
,, 18th-23rd (Paris).—International Conferences of Genetics.
,, 23rd-Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th-30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th-28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th-30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th-30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September (Genoa).—International Exhibition Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
,, (Manchester).—Second Conference of the British Hospitals Association.
September-November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.
MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.
TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.
THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.
FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (9th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 30th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 24	29·82	S.E.	...	115	75	60	62	66	Cloudy
,, 25	29·84	S.W.	...	123	75	59	61	64	Cloudy
,, 26	30·02	S.W.	...	121	75	58	59	63	Fine
,, 27	30·01	S.W.	...	104	73	58	60	64	Cloudy
,, 28	29·92	S.W.	...	129	75	62	64	67	Cloudy
,, 29	30·04	W.	0·06	126	75	58	60	63	Fine
,, 30	30·19	W.	...	116	73	58	57	60	Fine

The following journals, magazines, &c., have been received:—Cleveland Medical Journal, Nederlandsch Tijdschrift voor Geneeskunde, British Journal of Dental Science, Review of Neurology and Psychiatry, Harper's Monthly Magazine, Indian Medical Gazette, Indian Medical Record, Australasian Medical Gazette, Journal of Nervous and Mental Disease, Century Magazine, Archives of Internal Medicine, British Journal of Dermatology, East Galway Democrat, Wimbledon and District Gazette, Surrey Comet, Referee.

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An Address

ON

SURGICAL GASTRIC DISORDERS, THEIR TREATMENT AND RESULTS.

Delivered before the Blackburn Medical Society

BY E. STANMORE BISHOP, F.R.C.S. ENG.,

SURGEON, ANCOATS HOSPITAL AND JEWISH MEMORIAL HOSPITAL, MANCHESTER; PRESIDENT, MANCHESTER MEDICAL SOCIETY.

MR. PRESIDENT AND GENTLEMEN,—The word "dyspeptic" connotes not merely some defect in the ordinary process of digestion, but also a gloomy outlook on life, whilst "eupeptic" is synonymous with all that is happy, light-hearted, and gay. Such a correlation of ideas suggests a very close relationship, and emphasises to us, as medical men, the importance of a close study of all anomalies of the alimentary tract, and especially those which affect the primary segments, the stomach and duodenum. It is not merely life, but the *joie de vivre*, that which makes life worth living, which is more readily influenced by them than by diseases of almost any other organ.

Until the last 30 years the treatment of such diseases has been almost exclusively the province of the physician, gastro-enterostomy, the operation which has done so much to show the efficiency of surgical means, being first performed in 1881. Before this, surgical effort had been mainly directed against cancer of the stomach, and, as the surgeon was then usually called in only in the later and more hopeless stages of that disease, with extremely unsatisfactory results. But rapidly increasing experience from that time showed that there were many comparatively benign and some immediately dangerous states in which surgery could render important service, cutting short what had previously been believed to be essentially chronic disease, preventing in many cases what had been considered inevitable results, and rescuing from imminent death patients who in earlier times would have been perforce left to a painful but unavoidably fatal issue. It is to those conditions that I ask your attention.

Surgical procedures are to-day utilised in six distinct phases of gastric and duodenal disease:—(1) Perforation of gastric or duodenal ulcers; (2) acute or chronic gastric or duodenal ulcer during its course before perforation; (3) gastrectasia due to pyloric obstruction consequent upon cicatrisation of ulcers at or near the pylorus; (4) hour-glass stomach (bilocular, trilocular, &c.) also due to cicatrisation of ulcers in other parts of the stomach; (5) adhesions around old lesions dragging upon or compressing portions of the upper digestive tract; and (6) gastric carcinoma.

In the consideration of these various conditions I do not propose to make any feature of statistics, which are dry, uninteresting, and often misleading, since cases, although grouped under one name, very often resemble one another in but little else, but briefly to indicate their several points, followed by one or two illustrative cases, and to suggest the conclusions which they appear to indicate.

ACUTE ULCERS.

And first as to perforation of gastric or duodenal ulcers. With very short warning in the way of some discomfort after meals for a few weeks, the subject of this cataclysmic occurrence is suddenly struck down by intense pain in or near the epigastrium, which gradually subsides, or is cut short by morphia. Very soon, however, the pain returns, spreads over the umbilical region, or, if duodenal, down the right side of the abdomen, becoming more and more diffused over the entire area, and accompanied by rigidity at first of the upper recti, later of all the abdominal muscles. If left still longer rigidity disappears, peristalsis ceases, the abdomen becomes rapidly distended, and in the majority of cases, unless relieved by surgical means, death follows. I shall, however, later narrate a case in which undoubted perforation of the stomach occurred, as proved by an operation ten months after, which recovered sufficiently for the man to resume work under purely medical treatment.

Illustrative Cases.

At present I offer for your consideration two cases which illustrate, the one gastric, the other duodenal, perforation:—

CASE 1.—A man, aged 37, was admitted to Ancoats Hospital in March, 1909. On the morning of admission he considered himself in fairly good health; afterwards he admitted to one week's sensation of some pain after food, later to some hazy "few weeks." He ate a good breakfast at 7.15 A.M., and felt no pain after it. He continued at business until 5.30 P.M., having dined at mid-day off stewed steak and potatoes. He was washing himself previous to departure when something was felt to give way suddenly in the epigastrium. No immediate pain was felt, but there was a sensation of rapidly increasing weakness. As he walked with difficulty down a long room he became faint and short of breath. Half an hour later severe pain began in the upper abdomen, which became steadily worse until, he said, it amounted to agony one and a half hours later. He vomited once; the fluid rejected contained food, but no blood. Morphine was injected; relieved by this he was able to be removed to the hospital.

On examination there, great tenderness, increased by pressure, was found over the entire epigastric region, and there was rigidity of both upper recti, the lower segments being still supple. His temperature had fallen to 96·8° F., his pulse to 66, but his respiration was quickened to 36. He was not at that time in any great pain

The abdomen was opened five hours after the initial lesion. When the peritoneum was divided, gastric contents at once escaped and poured out in great quantity. When sufficient had been removed by sponges the stomach was drawn forward and a round punched-out opening was found surrounded by an area presenting a whitened, bleached appearance which faded away gradually into the normal colour of the stomach wall; the tissues were not thickened or indurated. The opening was closed by two superposed purse-string sutures, and after drainage had been arranged for the abdomen was closed.

This is an almost typical picture of the perforation of a gastric ulcer; and that of a duodenal is similar with some few modifications.

CASE 2.—A young girl, aged 19, was at work as a mule-tenter, when suddenly without any warning, about 4 P.M., she was attacked by violent pain in the epigastrium, bringing her to the ground. After a few minutes it became less intense, at the same time sinking to the umbilical level. After resting about half an hour she *walked* some 150 yards to the hospital. When examined the pain was so much less that she could with difficulty be induced to remain, but as both upper recti, and especially the right, were found to be rigid and there was general tenderness all over the epigastrium a diagnosis of perforated duodenal ulcer was made. The abdomen was opened four hours after the first appearance of pain and a pinhole perforation was found on the anterior duodenal wall from which fluid was issuing. The opening was closed and the patient recovered. Later, inquiry elicited a history of mild epigastric pain lasting for a month or two, beginning an hour after food and relieved by vomiting or by taking more food.

I requested my house surgeon, Mr. G. N. Braham, to write to as many as possible of these cases in order to obtain final results, and the reply from this one, I think, merits reproduction. She writes: "I am pleased to let you know that ..... since I have been improving in health I am going on the adventurous errand of going to be married. I now make a special thanks on behalf of my intended husband for the good you done to me so that we can be linked in wedlock." (Jan. 24th, 1911.)

Diagnosis.

The very short history in both these cases will be noticed, which no after inquiry during convalescence could shake; the sudden onset, in both some hours after food had been taken. These cases have been chosen mainly because they illustrate the two forms that onset may take, not at all as characteristic of any difference between the two *positions* of the ulcer, since in both the first symptom occurred some time after food, and the objective signs were much the same—but in order to show that occasionally pain is not the initial symptom. The first symptom in the first case was not pain—that did not become marked for at least half an hour—but there was a definite sensation of something having given way and this was followed—before the pain—by a sensation of increasing weakness.

On admission, in both cases the initial pain had much decreased—in the one case after a hypodermic injection of morphia, but without it in the other. Both patients were somewhat surprised at being told that an immediate operation was necessary. This is not uncommon, and a medical man seeing them for the first time during this period might easily be misled as to the gravity of their condition. The points of importance, those upon which the diagnosis was based, however, were the conjunction of three signs, and especially the presence of a fourth. The three conjoined signs were: low temperature, rapid pulse, and increased rapidity—and shallowness—of respiration. These alone with the history might simply mean shock, due to unusually severe colic, renal, biliary, or intestinal, or to some mental or other cause unknown. The presence of the fourth, rigidity of the upper recti, was, however, conclusive. This rigidity was marked, local, and persistent.

Value of Abdominal Rigidity as an Early Sign.

Perhaps I may be excused if I enlarge a little upon the importance of this sign in connexion with the vitally important early diagnosis, since it has been received with incredulity by some writers and a sort of contemptuous indifference by others. It is said by some to depend on "peritonism," a term of which no satisfactory definition has ever been given; in every case in which it occurs, however, it has marked the first stage of what will, if left alone, ultimately develop into undoubted peritonitis, and it therefore seems far more reasonable to consider it as marking the incipient stage of that inflammation.

For many years I have suggested the analogy between inflammation of this great serous cavity and that of other serous cavities, such as those of the joints. In acute inflammation of a joint the first and automatic sign is rigidity of the muscles which move that joint; this is recognised by the fixation of the bones acted upon by these muscles, and is known as Hilton's sign, since it was first described by that surgeon in his famous, though I fear now somewhat forgotten, book, "Rest and Pain."

The eye is another joint subject to the same law, and is peculiarly interesting, since it is, so to speak, split open naturally, so that we can see for ourselves the various changes taking place in it during the progress of the morbid state. Here, too, the first effect is the automatic contraction of the muscles entering into its composition, the orbiculares palpebrarum.

In inflammation of the abdominal serous cavity the first sign is similarly rigidity of the muscles acting upon the tissues which form the abdominal joint,[1] but in this case the rigidity of the external muscles themselves is the most easily recognisable; if the inflammation is general, all the muscles are affected; if partial, only those muscles or portions of muscles which are in connexion with the patch of inflamed peritoneum.

(Ordinarily we speak of each rectus muscle as a single muscle; but above the umbilicus each is really divided into three, not including the portion below this point. There seems reason to think that under pathological conditions each segment may act individually and as a distinct muscle.)

I have said that if the inflammation is general all the muscles are affected, and that does not mean merely those of the abdominal wall. It includes also the muscular coats of the intestines themselves. As a necessary consequence the normal movements of these muscles, peristalsis, ceases also, and therefore in the majority of cases there is, coincidently, obstinate constipation. But such coincident action naturally presupposes an antecedently perfect mechanism, and therefore this rigidity is most marked in these acute cases where perforation suddenly brings direct irritation to bear upon a previously healthy peritoneum. This automatic rigidity, the first and most trustworthy sign of acute peritonitis, does not, however, last very long, for the intestinal tube, especially the portion near the ileo-cæcal valve, contains a multitude of organisms, harmless enough in health, but which, when the conditions under which they exist in the body are materially altered, as they are in inflammatory states, become lethal and form poisons which derange that mechanism. Such derangement will result in the loss of rigidity and the occurrence of diarrhœa. The sign, therefore, is not, and cannot be, of long duration—it is not seen at all in chronic inflammations—but in the early stages of acute peritonitis it is always present and is to be entirely relied upon. Conversely, its absence is equally sound proof that acute peritonitis is not present. It must, however, be genuine rigidity and not the merely protective contraction due to fear of rough handling or the contact of a cold hand; such contraction will disappear rapidly if the examiner's hand is warm—and gentle; true rigidity will not.

Incidentally this symptom may be trusted to differentiate between colic of all kinds and peritonitis. In colic the irritant material, though its presence may be associated with quite as much pain, does not come in contact with the peritoneum, and therefore no actual rigidity is produced; in acute peritonitis there is actual contact between the irritating material, whatever it may be, and the peritoneal membrane, and rigidity is the result. This was well illustrated in a case sent to the hospital some few months since by an extremely smart practitioner who, however, has not yet shaken himself free of the old teaching as to peritonitis; curiously enough, his view was shared by a "medical" consultant whom he had called in before bringing his patient, as he did, in his own motor several miles for immediate operation. The history given was that the day before the patient, a woman, had been attacked by severe pain and vomiting, which had continued during the night and had been associated with constipation. During the journey she had another severe paroxysm of pain, and her medical attendant felt certain, as he told me, that she had commencing peritonitis. On examination, however, the abdomen was flaccid and no rigidity could anywhere be found. Depending upon the absence of this sign, though its significance was confirmed by the character of the pulse and the appearance of the face, but mainly upon this, the reliability of which I have so often verified, operation was decided against, and four or five days later the patient returned home well. In these days, when the necessity of early diagnosis is so much and so advisedly insisted upon, there is, perhaps, a risk of seeing "peritonitis" too frequently, and it is well to have a symptom, upon the presence or absence of which one can safely depend, to settle this question, especially as it is in these sudden acute cases that it appears most automatically.

CHRONIC ULCERS.

So much for acute ulceration. These cases are, however, rare as compared with those of the chronic type, which are of supreme interest at the present time. Here are specimens of some of the most usual forms seen. The points worth note are—

Various Types.

1. The *terracing* of these ulcers (Fig. 1). It is now generally believed that a chronic ulcer commences by the detachment of the mucosa over a small area from the nutritive tissues below by some material, gumma, tubercle, or simple clot produced by the rupture of a blood-vessel, which separates it from its ordinary blood-supply. The mucosa so detached necroses and is cast off as a slough or is digested, thus opening the way for gastric juice to act upon the unprotected tissues beneath. These may later become to some extent protected by the abundant mucus

FIG. 1.

Terraced chronic gastric ulcer.

[1] The word "joint" is usually associated with the presence of bone and cartilage, but these are by no means essential elements. The essentials of a joint are, first, two surfaces capable of movement upon each other; secondly, a lining membrane secreting a fluid which renders such movement easy and painless; thirdly, muscles capable of actuating such movement; and, fourthly, a reflex nerve arc, through which afferent impulses coming from these surfaces pass to a spinal centre and excite efferent impulses actuating the muscles which bring about such movement. The abdominal cavity is precisely such a "joint."

FIG. 2.

Peritoneal aspect of a perforated chronic gastric ulcer.

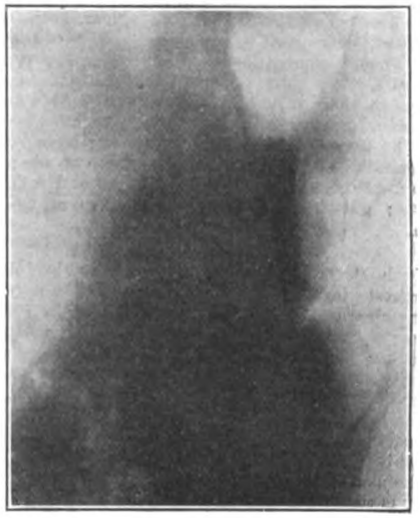
FIG. 3.

Mucous aspect of same ulcer as in Fig 2.

FIG. 4.

"Saddle" ulcer, with perforation in right-hand corner.

FIG. 5.



X-Ray photograph of dilated atonic stomach. Note the air chamber above. The fundus, which is not well shown, but which could be clearly seen in the negative, lies immediately above the pubis.

FIG. 6.

Atonic dilated stomach due to carcinoma of the pylorus. The gastric wall was so thin in parts as to show the black background through.

FIG. 7.

Recurrent ulcer after excision and reunion of walls. Note position of the (originally) external thread. (By courtesy of Dr. Andrewes, St. Bartholomew's Hospital.)

secreted by the sympathetically irritated glands around, or, as Katzenstein has shown, by the production of an increasing antiferment which neutralises the action of the pepsin present. Whatever be the reason, the digesting agent appears to act with less and less ease as it penetrates more deeply, and the ulcer sides are therefore not cleanly cut, but descend in steps which are well shown in this and other cases.

2. The peritoneal coat resists most strongly and may be extensively bared before it yields at some small point, as in Fig. 2.

3. Frequently during the process some small vessel is eaten into and copious hæmatemesis may be the result, or if perforation also occurs the abdomen may be full of blood mixed with gastric contents.

4. The greatly contrasted extent of the lesion consequent upon this within and without the stomach is well seen in the photograph of the same ulcer seen from the interior of the stomach (Fig. 3).

5. The peculiar shape affected by ulcers along the lesser curvature. These are specially suggestive of hæmorrhagic origin. As is well known, the coronary artery running along this curvature gives off numerous branches which run at right angles to it. If one of these gave way and a clot were formed, it also would lie in the same direction, would be of greatest volume near the origin of the vessel, and taper outwards towards its extremity. Fig. 4 shows such an ulcer extending outwards on both anterior and posterior walls from a common centre in the lesser curvature. Such an ulcer has been called a "saddle" ulcer, both from its shape and because it seems to bestride this edge of the stomach.

6. Though single ulcers are, at least in my own experience, the rule, they may be multiple. In such a case various stages in their formation may be studied on the same preparation. An ulcer which has only reached an early stage may be unrecognisable from without; were surgical interference limited to excision or inversion of the more marked lesion, the other would still enlarge and might later perforate; gastro-enterostomy alone favours the healing of both.

Previous History.

Much stress has been laid, and justly laid, upon the anamnesis in the question of diagnosis, but patients differ in the clearness of their statements and in their power of giving a correct or even connected story; much tact and great patience are often required, therefore, as well as a definite idea on the part of the examiner as to the relative value of the various points which he may elicit. Some confusion has arisen because it has been difficult to separate the essential symptoms from those dependent upon later changes, but this is gradually disappearing.

The usual history of a patient possessing a chronic gastric ulcer is that of a series of attacks of epigastric pain coming on at a more or less definite time after food. The patient may be of either sex. Usually the age at which a medical man is consulted is that of middle or advanced life, and the impression patients usually apparently wish to convey is that the history of their complaint is but a short one. On more careful inquiry, however, it will be found that they are only speaking of their last attack, which may have been somewhat more severe than those previously experienced; they will, if pressed, admit that for years they have suffered from discomfort after food with periods between of perfect freedom—a freedom in some cases so complete that it is difficult for them to realise that any connexion exists. No satisfactory explanation has yet been given for these periods of freedom from active symptoms, unless it is to be found in Bolton's experiments on dogs, and to be coincident with actual healing of ulcers situated in regions where their cicatrisation does not interfere with free evacuation through the pylorus. Bolton produced actual gastric ulcers and showed that when once the sloughing stage was complete and the slough had separated, so long as there was no obstacle to free evacuation of the stomach contents, there was a natural tendency for such ulcers not merely to heal, but for their bases to become covered once more with normal mucosa in which normal gastric glands were again present. If, however, they involved the pylorus, and consequently attempts at cicatrisation tended to obstruct that orifice, healing did not take place. These intermissions are an integral fact in the diagnosis; the same symptoms in a person of middle or advanced life, with no history of previous isolated attacks, are far more suggestive of commencing carcinoma than they would be were such a history obtainable.

Picture of Attacks.

The descriptions given of such attacks vary necessarily. Not only will an ulcer on the lesser curvature produce a different picture from that of one at or near the pylorus, but in the same case there will be differences at different times owing to the presence or absence of adhesions around. In the earlier attacks such adhesions will not be present; in later ones they are frequently to be found, uniting the stomach to liver, pancreas, omentum, gall-bladder, or transverse colon, and, by the drag exerted by their contraction upon these, adding new and non-essential symptoms which may overshadow those characteristic of the gastric lesion.

The characteristic picture, that of the earlier attacks, is the following. There is epigastric discomfort, weight, sense of distension, sometimes actual pain, occurring at a more or less definite time after the taking of food, usually from three-quarters of an hour to two hours after. This serves to distinguish between gastric ulcer and cholelithiasis, in which condition also the taking of food may induce discomfort, but in this latter, malaise arises during the actual meal, which is in consequence often left unfinished. In addition, breathlessness, even asthma after or towards the end of a meal is not uncommon in conjunction with the cholecystitis accompanying biliary calculi; unless adhesions exist between the gall-bladder and the stomach, this does not seem to occur in gastric ulcer.

In gastric ulcer there is freedom from pain directly after food; this is perhaps the time when the patient is most comfortable. The appetite for food is not impaired, thus distinguishing from gastric catarrh or succurrhœa. There is a good appetite, though often enough, warned by previous experience of its later effects, the patient has conceived the idea that certain articles of diet are more harmful than others, or that a full meal is productive of more pain than a restricted one, and he will in consequence eat but a small amount at any one time and carefully avoid certain kinds of food, thus giving the impression that his appetite is at fault.

The time at which pain or discomfort will come on after food will vary with the position of the ulcer; it will occur earlier if the lesion is in the cardiac area, later if near the pylorus. Indeed, when situated at this point, it is almost impossible to differentiate from duodenal ulcer by this test of time alone. It was believed that duodenal pain was felt at, and after, the moment when, digestion having reached a certain point, the pylorus opened and the acid gastric contents were allowed to pass, but Hertz showed by means of the Roentgen rays that food had already been passing into the duodenum for some time before the duodenal pain began. Such pain, therefore, must depend rather upon the degree of acridity of the material passing than upon its mere contact. So far as time is concerned, a safer point upon which to rely for the diagnosis of duodenal ulcer is the occurrence of early morning pain; pain, that is, which wakens its victim and is best allayed by the taking of food, biscuits or thin bread-and-butter. This appears to be characteristic of duodenal irritation and is not observed in the purely gastric variety. It may, however, occur in simple duodenal catarrh.

The ultimate diagnosis between such cases will be made after careful tests of gastric contents and of fæces, remembering especially those for occult blood. Radiographic observations are also of much utility, since they throw light upon the motility, tone, and irritability of the gastric or duodenal walls, the patency or otherwise of the pylorus, and the prospects of success after operation.

Progress of the Ulceration.

The further progress of such ulceration appears to lie in one of four directions: either towards healing, if the pylorus is open, and the patient is placed under efficient medical direction, or towards late perforation on the one hand and gastrectasia following contraction of the scar, if near the pylorus, or bilocular stomach, if the scar is farther away, on the other. The fourth is the imminent danger of carcinoma implanted upon such a scar, the most distressing result of all. And this danger of carcinoma is by no means rare. Sonnischen found 14 per cent. of 156 cases of gastric cancer examined post mortem in the Pathological Institute at Kiel undoubtedly

developed from ulcer, whilst in a second series Klausa found 26 per cent. Stich declares that ulcer carcinoma constitutes 30 per cent. of gastric cancer. Mayo found 54 per cent. of the cases of gastric cancer at Rochester in which both the clinical history and pathological examination made it certain that they had originated in ulceration, whilst Robson reports no less than 59·3 per cent. of his cases of cancer as giving a previous history of chronic ulcer.

Healing of an ulcer may occur, and probably does occur, in all prolonged cases from time to time. The characteristic intervals between the several attacks are distinctly suggestive of this, but such healing is not necessarily followed by cessation of the symptoms. The following case, to which I have already referred, is evidence of this :—

CASE 3.—The patient, a male, aged 59, was admitted in November, 1907. For two years this man had suffered from epigastric pain two hours after food with occasional vomiting. Several times the vomitus had contained material like coffee-grounds. Twelve months previous to admission a very sudden and severe attack of abdominal pain came on some little time after his return to work from dinner. He became collapsed and remained in that state for some hours. He was taken home, kept in bed, and treated medically. After several weeks' illness he recovered sufficiently to do some work, but was never well. At the time of admission he said that he felt most comfortable in the morning, though he had no appetite for breakfast. Two hours after dinner, which he enjoyed, a feeling of distension with dull aching pain was felt and lasted all the afternoon.

The abdomen was opened. On the anterior wall of the stomach was a thickened, puckered area, with the appearance of scar tissue. To the centre of this a patch of omentum was firmly adherent. The posterior no-loop operation was done and recovery was rapid and perfect; there was no further pain, distension, eructations, or vomiting. He writes now, more than three years later :—"I am in splendidhealth, never better in my life. I have never had any return of the vomiting or the slightest pain after eating, and can eat anything without having to suffer the slightest discomfort and can eat a supper and have a good night's sleep after—a thing I could not do for years before the operation. *Now* life is worth living, *before* the operation it was one long misery ..... so you will see from the above that I have derived immense benefit, and if it had not been for it I feel sure I should not have been here to-day."

Late perforation of a chronic ulcer will sometimes be found. In such cases there is frequently some leakage for a while before the full yielding of the gastric wall. If the ulcer be situated anteriorly, and the amount lost at any one time be small, around the point of exit adhesions may form, aided by the efforts of that policeman of the peritoneal cavity, the omentum, which, as in the last case, may close it again, but the escaped fluid may also induce slight pelvic peritonitis, otherwise not to be accounted for. Last year Dr. A. W. W. Lea of Manchester recorded three such cases in women, and I have myself seen four which appeared only explicable on some such hypothesis. If the lesion is on the upper or posterior surface, subhepatic or subdiaphragmatic abscess may be produced. In other cases when the opening is large practically the same symptoms may be seen as in the perforation of acute ulcers, but the history obtainable is a far longer one, and will probably include large losses of blood by vomiting.

Advantages of Gastro-enterostomy done at First Operation.

The treatment by immediate laparotomy followed by closure of the gap is, of course, obvious. Mere closure may at the time be all that is practicable. The state of such patients is such that surgical interference must be reduced to the minimum which is at the moment sufficient. But, if possible, gastro-enterostomy should also be done at the same time. If possible, because closure of the ulcer, if it is to be effective, may interfere so greatly should the ulcer be in the pyloric area—the most probable area—with the onward passage of food that acute dilatation and death may follow rapidly, or should the patient escape this his vitality may be so reduced by the abstention of food by the mouth or by the alternative vomiting produced by the attempt to take it that he may not be able to bear any future interference.

Such a case was seen in conjunction with my friend, Dr. T. B. Riddall of Longsight, in April last year. The patient, a male, 56 years of age, gave a long history of stomach ulcer, culminating, on the morning he was seen, in sudden perforation. Without delay he was removed to a surgical home and laparotomy performed about 12 hours after. A widely open gap was found in the pyloric area, through which much material had passed, and the peritoneum was pretty full; this took a little time to remove, which, added to the time expended in careful suture, seemed to be as much as he was fit to bear. The abdomen was therefore closed, and the gastro-enterostomy, which was evidently required, postponed until a later date. Rectal feeding, with proctoclysis was at once started, but after three days the rectum became irritable and refused to retain anything. Tentative feeding by the mouth was substituted, but this gave much discomfort, only relieved by vomiting, which still further exhausted the patient; it was evident after a day or two that food could not pass through the much constricted pylorus, and that, unless another exit was provided, the patient would die from starvation. Up to this time, but for the difficulty of alimentation, progress had been satisfactory; there was no peritonitis; respiration, pulse, and temperature were all normal, and there seemed no reason to think that he would die, if we could but feed him. On the seventh day, therefore, gastro-enterostomy was done. The peritoneum was healthy; indeed, it was curious to see how quickly, after so much irritation, it had returned to a normal condition; but although food was now taken and retained, the shock of the second operation was too great, and he died 24 hours later from pure asthenia.

Gastrectasia.

Gastrectasia is not an uncommon result of pyloric contraction due to the scarring of an ulcer in this region Here is an X ray photo (Fig. 5) of such a dilated and atonic stomach. Above, the usual air-chamber is clearly seen, immediately below the diaphragm, whilst the fundus reaches almost to the pubic arch. Also an ordinary photograph (Fig. 6) of a portion of a dilated stomach, in which the extreme tenuity of its walls sometimes attained may be appreciated. In this case cancer had followed ulceration and the obstruction had been prolonged, and such an amount of thinning is unusual, but it is not seldom approached. The most important consideration which these two illustrations demonstrate is that a stomach which shows signs of dilatation should not be left too long, since any operative interference would be useless in such cases. The tone of the gastric walls, once lost, does not appear to be regained, and operation, however well planned and carried out, would necessarily fail.

Bilocular Stomach.

Bilocular stomach is the result of contraction of the scar of an ulcer seated astride the lesser curvature—a rather favourite site for a chronic ulcer. I have shown a well-marked specimen of this. As this ulcer heals it pulls the greater curvature nearer and nearer to the lesser at its own plane until the cavity may be almost divided into two pouches, connected only by a narrow tube lying just below the lesser curvature. The symptoms produced by this condition are well known; I merely wish to draw attention to the help rendered by radiography in adding certitude to the suspicions aroused by them. The patient was a woman, 33 years of age, and had complained of intermittent attacks of vomiting for eight years, with pain coming on at various periods after food. Radiography demonstrated most clearly the separation of the stomach into two pouches. She was operated upon in January, 1909, both gastro-gastrostomy and gastro-enterostomy being done. She writes now: "Just at first, after leaving hospital, I used to have often returns of the sickness, but for the last twelve months I feel better than I have ever done in all my life. I am now feeling strong and well and eat most things in reason. ..... I returned to my work in May after the operation, and with the exception of a week for a bad cold and a few days through being run down, I have not had a day off since; before I could never keep up more than three months at a time."

But X ray photographs sometimes suggest bilocular stomach when such a condition does not really exist. Such an appearance is usually due to spasm of the transverse band which marks off the cardiac from the pyloric area and may be due to an ulcer on the lesser curvature, but is strongly suggestive of appendicular disease which by reflex action may produce symptoms very difficult to distinguish from those due to gastric or duodenal ulceration. Besides such X ray appearances, perhaps the most useful guide is to be found in the fact that vomiting in the cases of gastric lesion always gives relief, whilst it has no effect in those in which the lesion is appendicular. I have lately published two cases referred to me as cases of gastric ulcer, in which, on operation, no sign of any lesion could be found in either stomach or duodenum, but in both of which well-marked appendicular chronic inflammation was present. Moynihan

was the first, I believe, to note this fact, and has himself given details of several instances.

Results of Operation.

It is, however, in cases of gastric or duodenal ulcer, before dilatation to any marked extent, or the implantation of cancer has complicated matters, that the best results from operation are obtained. Curiously enough, it appears to be an advantage if the lesion is situated, as it so often is, in or near the pylorus, and that opening is becoming obstructed by scarring. The most brilliant results are seen in such cases, so much so, that certain operators have advocated and practised the closure of this orifice by suture or ligature in cases where the ulcer was in a different situation. Frequently with a pyloric or duodenal ulcer inversion or excision of the diseased area will result in practical occlusion of the normal passage. That does not matter if gastro-enterostomy is done, as the new stoma prevents any accumulation of contents, but I doubt if an artificially produced occlusion is indicated. Mucous surfaces will never adhere, however closely they are opposed, and sutures or ligatures in the intestinal tract tend invariably to make their way into the lumen of the gut to which they are applied. This was known as early as the days of Travers, but some believed that this tendency was attributable to the septic character of the sutures then used, and that it would not occur if the suture were sterile.

I am able, by the courtesy of Dr. F. W. Andrewes, of St. Bartholomew's Hospital, to show a photograph (Fig. 7) taken after excision of a chronic ulcer in which the internal suture—of gut—has disappeared and the outer suture—of aseptic silk—has slowly worked through in the classic fashion until it now, knot and all, is lying almost loose in the interior of the stomach. This figure is very instructive for other reasons. It shows the uselessness of catgut for the mucosal surface. The edges of the mucous membrane at the line of union have parted, the gut having been digested too soon, and contact of the gastric juice with the deeper layers has thus been permitted, in consequence of which a second ulcer has been produced by its action. It also gives some data as to the time required for the formation of such an ulcer, since three months elapsed between the time of excision and the post-mortem examination at which this was found, but above all I think it shows the uselessness of applying any ligature to the pylorus, the effect of which can only last as long as the ligature exerts its mechanical pressure outside the gut.

One reason for this proposed closure of the pylorus is the fact that the contents of all tubes in the body tend to make their way, if they possibly can, through the natural channel in preference to any artificial opening; whilst any spasm or temporary constriction of such a channel, if it can obtain rest for a time, tends to pass away. A good illustration of this is seen after perineal section for urethral stricture; at first all urine escapes through the new opening, but later, even if nothing is done in the way of dilatation, the stricture dilates, the spasm which has accentuated it passes away, and urine in larger and larger quantity comes through the urethra, less and less by the artificial opening, even though this is apparently the more easy and direct route. This appears to be a natural law, and obtains also with the artificial stoma produced by gastro-enterostomy. Those who look upon this operation as only of use if it can be made permanent naturally wish to prevent this, though they fail, and I think are bound to fail, for the reasons stated. But that does not diminish the usefulness of, nor the necessity for, the operation. In those cases of organic stricture at the pylorus, where the necessity for a permanent opening exists, the new stoma will remain open; in those where the constriction is temporary, due to spasm produced by an ulcer at a distance from this valve, but equally requiring relief at the time, the natural passage will again become free, and the stoma possibly close, but this will not happen until the ulcer has healed and the irritation caused by its presence has disappeared. A tracing on the radiographic screen taken six months after the operation shows that food is once more passing through the pylorus, though still some finds its way through the new stoma.

The "Modern" Operation of Gastro-enterostomy.

The reputation of gastro-enterostomy as now performed has suffered greatly from the results of the earlier attempts which were bound to be tentative. At first performed as a means of relief in a case of gastric cancer where excision was impossible, the earliest method was essentially crude and experimental. A loop of jejunum was brought up over the transverse colon and united to the anterior gastric wall. Crude as this expedient was, it gave great relief in that case and was repeated in many others, but it was speedily recognised as possessing many and serious drawbacks. Chief amongst these was "vicious circle vomiting." The loop of intestine fixed was long, and when distended with contents, heavy, and kinking of the gut almost always followed, if the patient lived long enough, at or near the site of union. Such kinking delayed the onward passage of material in the afferent limb, which consequently became distended and dilated. When peristalsis at last overcame the obstruction, so great a rush of fluid occurred that the stomach was flooded by jejunal contents, which it at once rejected through the mouth, and the last state of the patient was worse than the first. The loop of small gut also pressed upon the transverse colon and painful griping was added to the patient's sufferings. Von Hacker eliminated the long loop by his posterior method, in which the first part of the jejunum was united to the posterior gastric wall, but at that time and for long afterwards it was believed that one essential to success was that the peristaltic wave in both stomach and intestine should pass in the same direction. In order that this might be the case it was necessary that the jejunum should be turned upon itself, thus forming a loop in the afferent limb. A frequent result was that a kink was again formed with the consequent dilatation of the proximal gut and the reappearance of "vicious circle" vomiting. Various modifications were tried, the loop being attached more and more widely to the stomach, but all with much the same result. It was not until the Mayos of Rochester, U.S.A., demonstrated that isotonic peristalsis was not necessary that the present "no loop" posterior operation was perfected and "vicious circle" vomiting became a thing of the past.

The results of this, the "modern" operation, are all that could be desired. Pain and vomiting cease from the time of operation, the patient rapidly regains the power of taking the requisite amount of food and of digesting it, digestion now apparently taking place in the intestine, and consequently weight and strength are with fair rapidity restored. It is, however, of importance to note that in those in which the precedent pyloric obstruction has produced an appreciable loss of tone and motility in the gastric walls the full extent of the benefit to be derived from the operation may not be seen for some months. The case already mentioned of bilocular stomach is an instance of this, and I have seen many others in which the same fact has been noted, but in the majority the improvement is immediate and very striking. Here are two reports chosen from a great many:—"I have a constant feeling of thankfulness to be so healthy and strong. It is worth anything to be restored to good health. There has been nothing whatever to report in my condition that is unfavourable; I have not once been sick, however slightly, but am certainly stouter, and my appetite keeps always normal." This was the case of a man who almost died from hæmatemesis a few months before operation. "I must tell you that I am in the very best of health. I have not since the operation had *any* return of vomiting; the pains that I had previous to the operation have completely gone, and I am glad to say that all food agrees with me. I have been back at my work as a school teacher for three years without having a day's break through illness of any description. Previous to the operation I had been away from school six months, being unable to take any food. I am sure I cannot give you any better satisfaction than to tell you that I have since studied for and passed my final examination as a certificated teacher without any effect on my general health." But this patient had to wait three months before any marked improvement in her general condition was observable.

Behaviour of the New Stoma.

Finally, it has been a source of great interest to watch by means of the radiographic screen the behaviour of the new stoma as time goes on in those cases where it remains permanent. At first the food passes through at once. It is difficult to obtain such observations earlier than the eighth day, the patient not being in a fit condition to bear the exposure, but tracings show that at this time the food does not remain in the stomach any appreciable time but passes at once into the jejunum. Three months after,

whilst some passes at once, as soon as the intestine has received a certain quantity, presumably as much as it can at the time digest, the stoma closes temporarily and no more is allowed to enter; a clear space becomes visible between the food retained in the stomach and that in the jejunum. In a little while the stoma again opens and more escapes. This was at one time believed to indicate the formation of a new sphincter around the artificial opening, but is now believed to be due to reflex contraction of the muscular fibre of the gastric wall in response to stimuli received from the loaded jejunum.

There are, of course, many more points of interest in connexion with these operations and their results, but time will not permit of further enlargement upon them. Sufficient has perhaps been said to show the importance of the subject, the satisfactory results obtainable, and the necessity for ready—and early—diagnosis of the conditions remediable by them.

WILL NATIONAL HEALTH INSURANCE ENSURE NATIONAL HEALTH?

BY ERNEST J. SCHUSTER, LL.D.

(A) *Introduction.*

THE declared object of the National Insurance Bill is not merely the furnishing of help, making it possible for persons disabled by disease to take the necessary steps for the removal of such disease and to tide over the time during which their earnings are suspended, but also to bring about a general improvement in the hygienic conditions of the country. National health insurance is in this way intended, in a certain measure, to ensure national health. I propose in this paper to deal exclusively with this aspect of the Government scheme. The Bill proposes to improve the health of the country: (1) by measures regulating the general conditions of public health; and (2) by measures affecting the insured persons individually.

(B) *Proposals Intended to affect the General Hygienic Conditions of the Country.*

1. *Summary.*—Among the proposals intended to affect the general conditions the following require special mention: (*a*) the power conferred on the Insurance Commissioners to apply certain funds "for the purposes of research"; (*b*) the power conferred by Section 17 on any approved society or local health committee to grant subscriptions and donations for certain purposes concerning public health; (*c*) the rules contained in Section 44 (1) which make it the duty of each local health committee to inquire as to the special hygienic needs of the locality placed into its charge; (*d*) the rules contained in Section 46 as to the holding of inquiries in the event of there being excessive sickness in any locality; (*e*) the reference contained in Section 47 to the Exchequer grant for the construction of sanatoriums; (*f*) the inclusion among the "additional benefits" enumerated in the second part of the Fourth Schedule, under which additional benefits granted under the rules contained in the Bill may include "the building or leasing of premises suitable for convalescent homes and the maintenance of such homes." I have mentioned these various rules in the order in which they appear in the Bill, and will now try to analyse them in a more connected manner.

2. *Proposals as to sanatoriums fund.*—The million and a half of money which is to be applied in respect of sanatoriums has in reality no connexion whatever with the proposed scheme of insurance. The section dealing with it simply says that if Parliament grants a sum of money for the purpose in question the Local Government Board, with the sanction of the Treasury, may apply the fund so granted in any manner that may seem expedient; certain powers are conferred on such county councils as may receive any part of the fund; and the Local Government Board is authorised to form joint committees or joint boards for the purpose of facilitating coöperation between several county councils; but this is all the Bill contains on the subject.[1] The local health committees to be created under the Bill have nothing to do with the administration of this fund, and there is no provision in the Bill relating to the destination of the sanatoriums constructed at the expense of the fund, except that they are to be used for the treatment of tuberculosis or such other diseases as the Local Government Board, with the approval of the Treasury, may appoint.

The Bill does not give a right to any particular class of persons, whether insured under the Bill or not, to be received in any such sanatorium, nor is it clear from its terms whether the county council or other authority by whom a sanatorium is constructed will also be entrusted with the duty to manage and maintain it. It seems that all these matters are entirely left to the discretion of the Local Government Board, and under these circumstances it is quite impossible to say whether the large sum which is to be taken out of the public funds will be spent in a manner ensuring the kind of accommodation and management which can be of use in the fight against tuberculosis. There is no magic in the word "sanatorium." Not every building called by that name is a fit place for the reception of consumptives, and, moreover, the treatment of the patients is as important as the construction and the site of the building. It is important that on all these matters the authorities to whom the management of the funds is entrusted should have the most competent advice, and that they should not be tied down to any preconceived notion in favour of any particular method; but nothing has been done to ensure these objects.

The provisions of the Bill do not enable any authority to compel the patients to submit to sanatorium treatment. In Germany the experience on this subject has not been entirely satisfactory. In a circular letter issued by the Imperial Insurance Office on April 17th, 1909 (A.N. 1909, pp. 487, 488), it is stated that tuberculous patients are frequently disinclined to seek admittance in a sanatorium, and that the patients who seek admittance very frequently leave the institution after a very short sojourn, as they are frightened by the symptoms of their fellow-patients and by the cases of death occurring among them. If sanatorium treatment is confined to the treatment of the early stages of the disease, and to curable cases, such experiences may possibly be avoided; but these are matters requiring a great deal of care and discrimination, and it is by no means certain that the authorities entrusted with the management of the sanatorium funds are likely to exercise such care and discrimination to the desired extent. In Germany the institutions by which the insurance against invalidity is administered, though applying the sanatorium treatment as much as possible, have begun to think of other methods to be used in the struggle against consumption. They have begun to support the voluntary dispensaries which provide for the prevention of infection or which assist treatment in the early stages of the disease, and may supply the medical examination of the relatives of patients. Moreover, they use part of their funds in loans for the erection of healthy dwellings for workmen, and for other purposes preventing the spread of disease. The fact that there are 41 such institutions, each of which has a considerable amount of freedom in respect of the disposal and investment of its funds, is much more favourable to the adoption of discriminating methods than the excessive centralisation which characterises the British scheme.

3. *Proposal as to convalescent homes.*—The building or leasing of premises suitable for convalescent homes and the maintenance of such homes is mentioned as one of the additional benefits to which members of societies who have come under a scheme providing for additional benefits may become entitled pursuant to Section 8 (1) (*f*). A right to such additional benefits may arise in any case in which a friendly society applies its accumulated funds in a manner sanctioned by the Commissioners in accordance with Section 55, or in the case of any actuarial surplus being found to exist on the triennial valuation of the assets and liabilities of any approved society. As there are numerous other "additional benefits" which may be provided by any such scheme, and most of them are of more direct and immediate benefit to the individual members, it is highly improbable that the power to use funds for the object in question will ever be exercised; if it were to be exercised there would be a little more scope for originality and variety than in the case of the application of the sanatorium fund, were it not for the necessity of the Commissioners' approval, which in all probability would

[1] The proposal as to the grant for the erection of sanatoriums is quite unconnected with the provision of the "sanatorium benefit" referred to later.

be made dependent on the observation of a cut-and-dried set of rules. In this connexion it may be remarked that the Bill does not confer any right to convalescent treatment or any power to apply funds for such treatment (except that by way of additional benefit allowances of money may during convalescence be made to members). The German sickness insurance law enables any of the autonomous sick funds to pass rules entitling any insured person to be received in a convalescent home for any period not exceeding a year after the termination of his illness (Section 21 [3a] of the statute at present in force, Section 202 of the new law).

4. *Proposal as to support of hospitals and district nurses* — An approved society may, under the provisions of the Bill, become entitled to certain windfalls, which are to be applied in such manner "as may be prescribed." These windfalls include: (*a*) the contributions paid by employers for persons remaining uninsured on the ground of irregularity of employment or of their becoming employed after attaining the age of 65 (Section 4 [5]); (*b*) the contributions forfeited on the ground of non-payment of arrears (Section 10 [1]). Out of the funds so provided an approved society or local health committee may grant subscriptions or donations to hospitals or other charitable institutions, or for the support of district nurses, and also appoint nurses for the purpose of visiting and nursing insured persons (Section 17 as amended in Committee). Here, again, we have provisions which may be applied usefully, but the prospect of this being done is somewhat remote, as the accrual of funds in the manner described depends greatly on accidental circumstances, and as, moreover, it is very doubtful to what extent the approved societies and health committees will make use of the power thus given to them. It is a great pity that the Bill does not provide in a more definite manner for the support of hospitals and district nurses. The public will, rightly or wrongly, conclude that provision for sickness has to a large extent been taken over by the State, and it will probably take a long time before it will be realised how very imperfectly this has been done. In the meantime, a large part of the flow of charitable funds from private sources will be interrupted.

Another matter connected with hospitals and nursing also requires notice. The hospitals in Germany receive a great deal of support as a consequence of the rules which enable a sick fund to compel a member in certain specified events to substitute treatment in a hospital for medical benefit and sick pay (see Sickness Insurance Law at present in force, Sections 7. 20; New Law, Section 199), and which enabled the invalidity insurance institutions to apply hospital treatment in the case of patients likely to come under their charge (Present Invalidity Insurance Law, Section 18; New Law, sections 1253. 1254). The expenditure for these purposes during the year 1909 amounted as regards the sick funds to over £2,000,000 and as regards the invalidity insurance institutions to over £1 000,000. There is no provision in the British Insurance Bill other than the very limited authorisation contained in the amended Section 12 (2) (*c*) empowering an approved society to substitute hospital treatment for the other benefits, or enabling them to place patients under treatment for the sake of helping them to escape permanent invalidity. This removes a valuable method by which on one side the general health might be improved, whilst on the other hand a good source of income would be secured to the hospitals.

5. *Commissioners' research fund.*—Under Section 15 (2) each local health committee is to receive a Treasury grant amounting to 1*d.* in respect of each insured person residing in the area of such health committee for the purposes of being applied towards the administration of the sanatorium benefit, but the Commissioners are entitled to intercept such part of the aggregate sum payable in this manner to the health committees as they wish to retain "for purposes of research." Here, as in other cases a most undesirable uncertainty is created. The Commissioners will either have to curtail the amount applicable for sanatorium benefit, the sufficiency of which is in any case uncertain, or their power to use part of the Treasury grant for purposes of research will be entirely nugatory. Assuming that they exercise the power, the vagueness of the expression "purposes of research" will put them into a most unenviable position, as they will be inundated with proposals for the testing of innumerable inventions or theories.

6 *Health committees' powers of investigation and instruction.* —The local health committees, in addition to their duties as regards the administration of the sanatorium and medical benefits in respect of all insured persons and the administration of all benefits in respect of the deposit contributors, have a number of general duties, partly in competition with the existing local authorities. One of these duties consists in a general consideration of the needs of their respective areas with regard to "all questions of public health." As in the case of the above-mentioned "purposes of research," the indefinite nature of this expression allows our imagination to wander over a wide field, but before speculating on the questions, which may be suggested as fit subjects of investigation, we are bound to think of the more practical problem as to the method of raising the funds which would be necessary if any such inquiry is to be efficient; for without the assistance of experts an aimless wandering over the field of public hygiene will be useless, and it is hardly likely that experts will be found who will supply their knowledge without remuneration. The only funds available for the "general purposes" of the health committees are those derived from the sick pay of inmates of hospitals and sanatoriums who have no dependents and on behalf of whom no payment is made to the institution of which they are inmates (see Section 12 [2]), but these will probably not go very far. The medical officer of health for the particular area may, if he feels disposed and if he is requested to do so, attend the meeting of the committee and give his advice, but he will as a general rule not be able to spare much time for this purpose, and his unaided advice will in most cases be hardly sufficient. The health committee is also to make provision for the giving of lectures and the publication of information on questions relating to health; but here again we ask: How are the funds to be provided? And another question occurs: Will the health committees be so constituted as to make them proper agencies for the collection and distribution of scientific knowledge? Each of these committees is to consist—(*a*) of elected members being as to one-third representatives of the county council or borough council, as to another third representatives of the members of approved societies, and as to the last third of representatives of deposit contributors; and (*b*) of members appointed by the Commissioners, the number of which must, however, not exceed one fourth of the elected members. The elected members, many of whom will be necessarily persons of inferior education, will therefore form the majority. If the sole duties of these committees were connected with the administration of benefits their constitution could not be objected to, but as authorities on the subject of hygiene these bodies will not meet with sufficient confidence on the part of the general public.

7. *Inquiries in cases of excessive sickness.*—The power given by Section 46 to any approved society and to any health committee to bring about an inquiry in cases of excessive sickness due to the conditions or nature of employment, or to bad housing, or insanitary conditions, or to defective or contaminated water-supply, or to the disregard of any provisions contained in any Factory Act or Public Health Act is important, and may have satisfactory results, as there seems to be no doubt that at the present time the authorities who are entrusted with the superintendence of the matters in question are not sufficiently watchful. An inquiry instituted under the Bill may result in an order compelling the employer or the authority whose neglect has caused the excessive sickness to compensate the society or committee injured by such neglect for the additional outlay. It is obvious that the power to institute such inquiries will have to be exercised with caution, more particularly where a private employer is charged with neglect, but there is no reason to assume that the authorities with whom the decision will rest will be wanting in such caution. In any case the clause of the Bill dealing with this matter deals with a definite matter in a definite manner, while the other provisions connected with the regulation of public health to which I have referred have been shown to be of so uncertain a character that it is impossible to make any forecast as regards the effect which they are likely to have.

(C) *Provisions Relating to the Insured Individuals.*

1. *Administration of sickness benefit.*—If by any general scheme of compulsory insurance a state of things could be brought about under which efficient medical treatment could

be secured in all cases in which any person belonging to the poorer classes is in want of such treatment, one would be inclined to overlook many of the disadvantages attaching to the other parts of such a scheme, inasmuch as the benefit to the race which would follow would be so important as to make one inclined to pay almost any price for such a result. It is from this point of view that the question as to the position of the medical profession in its relation to the insurance becomes interesting to every member of the general community. The question whether or not the masses of the population are likely to receive efficient medical treatment under the State Insurance Scheme does not merely concern the medical profession, it concerns everyone who values the progress and well-being of his country. But efficient medical treatment cannot be secured unless a position be given to medical men making it reasonably certain that long years and large sums of money expended for the purpose of acquiring knowledge and experience and obtaining the use of a skilled eye and a skilled hand will not be spent in vain, that the "*res angusta domi*" will not unduly hamper the mental freedom, that the individual practitioner will not be so overtaxed by the number of cases coming under his care that he has to do scamped work and retains neither time nor mental energy for following the progress of medical science. Efficient medical treatment is not secured if the man who trims his sails to the wind, the man who wins his post by sacrificing his intellectual independence, the man who regulates his conduct by the requirements of those who have a voice in his selection—if, in short, the man of inferior moral character has a better chance of employment than one who follows his course without fear or favour. The German experiences have, I think, shown that any scheme under which the selection of medical men depends on popularly elected bodies is likely to favour the inferior man, but I must confess that the system of free choice of doctors (which has been adopted in the amended Section 14 (2)) seems to me as objectionable as the contract system. The system of free choice like the contract system gives the best chance to the worst man. The same type of man who, under the contract system, would have curried favour with the contracting committees will under the system of free choice curry favour with his patients, and as the whole claim to benefits under the insurance will depend on the medical certificate, it is not difficult to see how such favour will be obtained. If the medical benefit were to be restricted to persons whose total income does not exceed £100 the evils of either system would be reduced, because in that case there would be so much scope left for practice outside of the insurance scheme that employment under the scheme would cease to be an urgent necessity, but, even so, the position would in my opinion be unsatisfactory. If the insurance against temporary sickness is retained at all, the better way would be to dispense with the medical benefit altogether and to increase the sick pay, but so that the society or the committee administering the relief shall have power to refuse the sick pay if the patient is not under proper medical treatment, power being also given to require the patient to receive treatment and maintenance in a hospital in lieu of sick pay.

In connexion with the same question it must also be borne in mind that, as the Bill stands, large classes of the population are without the medical benefit, more particularly all children, all married women who are not in the regular service of an employer, all deposit contributors who have exhausted their deposit, all workers who work for their own account or for occasional employers, and are unable or unwilling to come under the unsatisfactory conditions of voluntary insurance, all insured persons who, through unemployment or other causes, have been unable to keep up their contributions during 26 weeks in each year of insurance, and all persons who have no regular employer, and cannot be admitted to an approved society. Some of these excluded classes live under the worst conditions, and the fact that their medical treatment is not secured would alone seriously interfere with the effect produced on the public health by the more efficient medical care to be received by the insured persons. I do not say that any scheme can be devised by which such efficient care could be secured for the whole population, but it is necessary to call attention to the marked insufficiency in this respect of the Government scheme, so as to show that voluntary effort will be required as much as ever. To help in the furtherance and organisation of such voluntary effort, under the guidance of those who are marked out as trustworthy leaders in the fight against disease, is the duty of every public-spirited man or woman.

2. *Sanatorium benefit.*—I have referred to the proposed grant for the erection of sanatoriums among the proposed measures regulating the general conditions of public health. As I am now dealing with the measures affecting the insured persons individually, I must say a word about the "sanatorium benefit" which is to be administered by the health committees. As I have already pointed out, the sufficiency of the fund allowed for this benefit is uncertain. When the sum coming out of the insurance funds (1*s.* 3*d.* for each person residing in the particular area) and the Government grant (one penny for each such person, less such amount as may be retained "for purposes of research") have been exhausted in any year, no farther sanatorium benefit can be provided. In so far as the fund is sufficient, the local health committee may make arrangements for placing an insured person in a sanatorium if they consider his case as suitable for sanatorium treatment (see Section 15). There is nothing to compel an insured person to accept sanatorium treatment if he is disinclined to submit to it, and inasmuch as an inmate of a sanatorium who has no dependents is (by virtue of Section 12 [1, 2]) deprived of sick pay, such a patient may well prefer sick pay to sanatorium treatment.

There remains the further question as to the nature of the sanatorium treatment to be applied. As I have said before, there is no magic in the word "sanatorium," and there are now many institutions called "sanatoriums" who do not supply the proper treatment required for the cure or alleviation of tuberculosis. As I need not explain to this audience, the patients suffering from tuberculosis belong to various classes, for each of which another kind of treatment is required. Is there any guarantee that the appropriate private treatment will be supplied? Is there a guarantee in cases in which, owing to the limited amount of the funds, a selection has to be made, that the most suitable cases will be selected? Having regard to the composition of the health committees to which I have already referred, the answer to these questions is very doubtful. Here, again, voluntary effort must step in to call attention to suitable cases, to supplement the funds in case they are deficient, to criticise the administration where it is faulty, to enlighten the population as to the precautions to be taken and as to the advantage of submitting to treatment when it is wanted and obtainable in a suitable form. Unless such voluntary effort assists the State scheme, the State scheme will be worse than useless. Such voluntary effort will also, as regards sanatorium benefit, be required for the assistance of the numerous classes excluded from the insurance to which I have alluded with reference to the medical benefit.

(D) *Concluding Observations.*

I think I have shown that both as regards the measures affecting the general health and those affecting the insured persons individually the provisions of the Bill are insufficient to secure the fulfilment of the far-reaching hopes which have been held out by its author and its more enthusiastic supporters, and above all that the voluntary agencies which have hitherto been active in the fight against disease will be as necessary as they were before. It would be a disastrous result of the legislation for compulsory insurance if the efforts of these voluntary agencies were to be relaxed, or if they did not continue to receive the unstinted support of the public.

"FIRST AID" ON THE ROAD.—Although scarcely three months have elapsed since "first aid" outfits were issued to the patrols of the Automobile Association and Motor Union and the men were required to qualify for "first aid" certificates, nearly 100 cases have already been reported by the patrols of services rendered to all classes of road users. Twelve cases of injuries by motor-cars were dealt with and over 40 cases of injuries to cyclists and motor cyclists. At Thornhaugh, on the Great North Road, recently a patrol went down a well to rescue a child who had fallen in. Although overcome by the foul gases he eventually recovered the child's body. The patrols have also relieved sufferers from wasp stings, machinery accidents, gun and gunpowder explosions, and a patrol who witnessed the fall of an aeroplane near the Coventry road was able to render prompt assistance to the injured aviator.

LYMPHATISM OCCURRING IN THE EAST.

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I SUPPOSE that it is now generally accepted that the persistence and growth of the thymus gland beyond the three-year limit, together with an undue development of the lymphatic tissue of other parts of the body, are signs that the owner thereof is so constituted that he or she is more than ordinarily liable to sudden death upon only very slight provocation. Hitherto it has been chiefly in connexion with deaths under anæsthetics that serious attention has been paid to the condition of the thymus and lymphoid tissue as of importance in deciding the cause of death, but if the danger of taking an exaggerated view of this undecided factor lymphatism is to be avoided, it is clearly of importance that some wider notice of its occurrence in deaths from other causes should be recorded. The fact that we did occasionally meet with the state among natives of Eastern countries was first brought to our notice by a case in August last year, and since then we have paid particular attention to the lymphatic development in the subjects who have been examined in the post-mortem rooms here.

Our observations extend from May 4th, 1910, to March 5th, 1911. During these ten months 585 bodies have passed through our hands; 20 of these have been so decomposed that a proper examination has been impossible, so that our observations must be taken as applying to 565 examinations.

CASE 1.—The first case which came to our notice and drew our attention to the condition as existing among the native community of the East was that of a Mahomedan girl, aged 3 years, whose body was brought by the police, having been recovered from a tank in the compound of a mosque. The history given by the relatives was to the effect that the child had been playing upon the edge of the tank and had been seen to fall in, the body being recovered about one hour later. There was no reason to doubt the correctness of this history. A post-mortem examination was held about five hours after the recovery of the body. The child was a well-developed rather stout little girl; decomposition was beginning; there was a little frothy mucus about the nostrils, but not more than is frequently seen in bodies which are commencing to decompose, nor was the mucus of that peculiar fine type so characteristic of death by drowning. None of the other external signs of drowning were present. In the internal organs no evidence of drowning could be found; the lungs were dry, and there was no water in either pleural cavities or stomach. The absence of all reliable evidence in the body of the known cause of death perplexed us not a little, and it was not until the examination of the intestine was taking place that any thought of lymphatism was entertained. Upon examining the small intestine the peculiarly prominent, raised, and corrugated appearance of Peyer's patches at once attracted attention, and upon re-examining the abdominal cavity the mesenteric glands were found to be all markedly enlarged, but discrete, and in no way suggestive of tubercular infection; it was then that the idea of lymphatism was first considered. As soon as looked for, there was no difficulty in finding the thymus; its weight when dissected out was 21 grammes. The inguinal, axillary, and cervical glands were moderately enlarged, and were discrete and of a pale pink colour; they were easily palpable through the skin. The tonsils were of fair size, but were not particularly enlarged, but the lymphoid tissue at the back of the tongue was very prominent. The organs of the body appeared to be in a healthy state, and there were no bruises about the head or other part of the body to suggest that in the act of falling the child had sustained injury such as to render her unconscious before immersion in the water.

This case has been dwelt on in detail because it was the first time that our attention was attracted to the condition of lymphatism as likely to be met with out here, and also in order that it may be understood that in this case, at any rate, too nice a care in observation was not responsible for the diagnosis. At this time our knowledge of such a condition was, practically speaking, restricted to the conception of its existence as an aid to anæsthetists in distress, for we had not then had the opportunity of reading the debate upon the subject which took place in May at the Royal Society of Medicine. After the experience of this case we have been taking particular note of the undue persistence of the thymus gland, and of any extraordinary development of the lymphatic tissue of the subjects of examinations, and have met with well-marked signs of lymphatism in 15 further cases. The cases are as follows:—

CASE 2.—A well-built, well-nourished Hindu male, aged 17 years. The supposed cause of death was drowning, but the history was unreliable. No obvious cause of death discovered; signs of drowning absent.

CASE 3.—A Zerbaddi woman, aged 25 years and well developed. The cause of death was hæmorrhage and shock from 18 large incised wounds, more than one of which would have been sufficient to cause death.

CASE 4.—A Chinese male, aged 19 years, a moderately well-developed youth. Death was supposed to have been caused by a fall from a tree from a height of about 20 feet, and the history was quite reliable, as there were several eye-witnesses of the accident. At the post-mortem examination no external injury was detected, and internally the only sign of injury was a shallow tear in the right lobe of the liver. There was no intra-abdominal hæmorrhage, and no obvious cause of death could be discovered; according to the bystanders this had been instantaneous.

CASE 5.—A well-nourished Zerbaddi male, aged 18 years; body picked up at the railway station. No history of illness or accident procurable. At the post-mortem examination the only sign of disease was a small patch of hæmorrhagic inflammatory consolidation at the upper part of the left lower lobe of the lung. In appearance this was suggestive of an infection with the bacillus pestis, but only pneumococci were discovered.

CASE 6.—A well-developed, well-nourished Chinese male, aged 50 years. The supposed cause of death was drowning, and the history was apparently reliable. Post-mortem examination did not disclose any of the usual signs of death by drowning.

CASE 7.—A well-developed muscular Burman male, aged 30 years. He had been found dead in his house; no history of any illness. At the post-mortem examination the organs of the body were found to be healthy; the stomach was full of a very large rice meal, and particles of rice were found in the larynx and trachea, so that the probable cause of death was returned as choking.

CASE 8.—A Burmese boy, aged 9 years. Cause of death, drowning; history quite reliable. At the post-mortem examination the only external sign of drowning was a little fine frothy mucus about the mouth and nostrils. Internally the only sign was some coarse froth in the large air-passages; the finer bronchi and the larynx and trachea were free from frothy mucus, and the lungs were dry and in no way suggestive of death from drowning.

CASE 9.—A Hindu woman, aged about 20 years, well developed and healthy-looking, who had been found in a tank, and as to whose death no history was to be obtained. Post-mortem findings: Decomposition not yet present to any marked extent; the only sign of drowning was a little fine frothy mucus about the nostrils and in the larynx and trachea; the lungs were free from fluid, and there was no water in the stomach. The organs of the body were healthy.

CASE 10.—A Burman male, aged 24 years. The supposed cause of death was suicide by poison. A tumbler containing a large quantity of crude cyanide of potassium was found by the side of the body, and from the viscera the chemical examiner recovered several grains of that poison.

CASE 11.—A native of India, a child aged 13 years, a well-grown boy. He had been playing outside a cocaine den and had picked up a small phial containing some of the drug, and it was supposed that he had taken a small quantity of the poison, as shortly afterwards he developed fits. He was brought at once to hospital but died upon admission. When first seen after admission his temperature was 103°F. and he died almost immediately afterwards. Post mortem no disease was found, but the chemical examiner found 1·1 grains of cocaine in the viscera.

CASE 12.—An Eurasian man, aged 22 years, brought to hospital dead from the effects of a stab wound of the chest. A very well-developed, athletic man. Post mortem the right coronary artery was found to be cut almost in two. The other organs of the body were healthy.

CASE 13.—A Hindu male, aged 25 years, admitted to hospital suffering from fever of two days' duration. He died shortly after admission. The body was well nourished. Post-mortem examination disclosed a patch of inflammatory consolidation in the lower lobe of the left lung: this was very hæmorrhagic in appearance, giving rise, as in the previous case, to a suspicion of plague, but only pneumococci were discovered upon microscopical examination. The other organs of the body were all healthy.

CASE 14.—A Hindu boy, aged 12 years, admitted to hospital for fits, the onset of which dated from the previous afternoon. He had never had fits before. Upon admission the neck muscles were a little stiff and there were some clonic spasms at short intervals (of which muscles the notes do not mention). There was no wound and no history of injury of any kind. A tentative diagnosis of tetanus was made. The boy died that night. The post-mortem examination failed to disclose any cause of death, although the kidneys showed some changes upon microscopical examination.

CASE 15.—A Hindu male, aged 16 years, brought to hospital with an extremely severe wound on the head caused by a fall while at work at the wharf. The frontal bone was badly crushed and brain-matter was escaping from the wound. He died soon after admission. Post mortem all the organs of the body were healthy.

CASE 16.—A Burman male, aged 24 years, brought to hospital dead, the supposed cause of death being cocaine poisoning, but the only evidence in favour of this hypothesis was the facts that he was known to be a cocaine eater and that he had died suddenly. The post-mortem examination showed severe aortitis, with marked narrowing of the orifices of the coronary arteries, such a condition as is not uncommonly the cause of sudden death.

In an analysis of these 16 cases it will, I think, be granted that in all of them—except, perhaps, Case 3—a condition which might without exaggeration be called lymphatism or status lymphaticus was present—that is to say, a state which has been accepted in many recorded cases as a cause of, or, at any rate, an important contributing factor in causing, sudden unexpected death, a factor which is still being energetically discussed in connexion with the occurrence of death under anæsthesia, yet in five, and probably in six, of the cases quoted above the deaths were due to causes other than any peculiar dyscrasia of which the persistence of the thymus gland and the general hyperplasia of lymph tissue are the outward and visible signs. For Case 3 died as the result of severe and necessarily fatal wounds, Case 10 from potassium cyanide poisoning, Case 11 from cocaine poisoning, Case 12 from a stab wound of the heart, Case 15 from a necessarily fatal head injury, while in Case 16 severe aortic

Evidence of Lymphatism Present in the Cases.

Nature and No. of case.	Thymus gland.	Lymphatic glands.			Lymphatic tissue of the tongue.	Spleen.	Intestinal lymphatic tissue.
		Axillary.	Groin.	Mesenteric.			
	Grammes.						
1, Drowning.	21	Enlarged.	Enlarged.	Markedly enlarged.	Prominent.	Normal.	Peyer's patches and the solitary follicles of the small intestine very hypertrophied.
2, Drowning.	30	Moderately enlarged.	Moderate.	Not obviously abnormal.	Very prominent, and tonsils enlarged.	Normal weight, 5½ oz.	Lymphoid tissue not conspicuously exaggerated.
3, Wounds.	5	Not enlarged.	,,	Not enlarged.	Prominent; tonsils enlarged but not greatly.	Normal.	Lymphoid follicles of the large intestine very conspicuous.
4, Fall.	23	Not obviously enlarged.	Enlarged and shotty.	Enlarged.	Tongue lymphoid tissue conspicuous; tonsils large.	Weight 6 oz.; lymph nodules conspicuous.	Solitary follicles of both large and small intestine hypertrophied.
5, Pneumonia.	25	Not palpable.	Palpable and shotty.	Slightly enlarged.	Not examined.	About four times normal in size, but not particularly lymphoid.	Moderate enlargement of the solitary follicles of the large intestine.
6, Drowning.	17	Palpable and shotty.	,,	No marked enlargement.	Well-marked prominence of the lymphoid tissue.	Slight enlargement (1½ times), otherwise normal.	Well-marked hypertrophy of the lymphoid tissue of the small intestine.
7, Choking.	*	Not enlarged.	,,	,,	,,	Normal.	Solitary follicles of both large and small intestine very prominent, also the stomach wall studded with small lymphoid follicles.
8, Drowning.	42·5	Palpable, discrete, and shotty.	Palpable, discrete, and shotty.	Well-marked enlargement.	Lymphoid nodules at the back of the tongue very prominent; tonsils large and elevated lymph nodules around the larynx.	Weight 3½ oz., lymph tissue marked.	Lymphoid follicles of the large intestine and lower half of the small intestine hypertrophied; also very numerous small lymph follicles throughout the duodenum.
9, ? Drowning	15	,,	,,	Moderately enlarged.	Nodules at the back of the tongue prominent.	Normal.	Lowest foot of the small intestine well-marked enlargement of the lymphatic follicles; also conspicuous, though small, lymph follicles in the stomach.
10, Poison.	23	Discrete and palpable.	Suppurating buboes.	Moderate enlargement.	Lymph nodules at the back of the tongue prominent.	Normal size, but lymphoid tissue increased.	Large and small intestine solitary follicles enlarged. Peyer's patches not hypertrophied.
11, Cocaine poisoning.	41·8	Very slight, not palpable.	Palpable and discrete.	Fairly marked enlargement.	Lymph follicles at the back of the tongue and post-pharyngeal lymph tissue hypertrophied.	Normal size, but lymphoid tissue excessive.	No enlargement of the lymph follicles.
12, Wound.	28	Moderate enlargement, discrete and palpable.	Moderate enlargement.	No marked enlargement.	Tongue not examined.	About 2½ times normal in size; lymphoid tissue not excessive.	No obvious hypertrophy of the lymph tissue.
13, Pneumonia.	21	Moderate enlargement.	Normal.	Normal.	Lymphatic tissue at the back of the tongue prominent.	Very large, about five times normal.	Lymphoid tissue normal.
14, ? Tetanus.	28	Moderately enlarged, but not palpable.	Well-marked enlargement; palpable and discrete.	Slightly enlarged.	Moderate hypertrophy of the follicles at the back of the tongue.	Normal.	Fairly well-marked hypertrophy of the lymphoid tissue, more especially of the solitary follicles.
15, Wounds.	12	Moderately enlarged; palpable.	Slight enlargement; palpable.	No very obvious hypertrophy.	Not noted.	,,	Peyer's patches of the lower portion of the small intestine hypertrophied to a moderate extent.
16, Aortic disease.	37·7	Slight hypertrophy, but not palpable through intact skin.	Well-marked hypertrophy; palpable and discrete.	Normal.	Nodules at the back of the tongue prominent, also post-pharyngeal lymph tissue hypertrophied; tonsils large.	,,	Solitary follicles of the large intestine hypertrophied; no striking enlargement of the lymphoid tissue of the rest of the intestinal tract.

* Weight not recorded; was of moderate size, probably 15–17 grammes.

disease was present, quite sufficient in itself to cause sudden death without an appeal to any peculiarity other than heart disease.

In Case 4 it would seem at first sight unreasonable to attribute the death to any constitutional peculiarity, but it is at any rate possible to suppose that his lymphatic state might carry with it an unusual liability to syncopal attacks and so contribute to the occurrence of the accident. We inquired from his relatives whether any proneness to giddiness or fainting had ever been noticed, but could discover no evidence of such having been present. However that may be, it is to be noticed that, so far as post-mortem signs of severe injury were concerned, they were limited to a slight tear in the liver, from which there had been no hæmorrhage, while the man is reported to have been dead when picked up immediately after the fall, so that he died apparently from syncope the result of the shock of the fall, a syncope which was probably aided by his constitutional condition. This would ally the case to Cases 1, 6, and 8; in these cases there was no doubt but that they had been immersed in water during life and that from a practical point of view they had met their deaths as the result of drowning, and yet the usual signs of drowning were either extremely scanty or absent altogether; syncope had apparently taken place almost immediately after immersion. Cases 2 and 9 were probably of a similar nature, although the absence of eye-witnesses of the probable accidents makes their deaths from drowning a surmise of which proof is impossible.

Cases 5 and 13 are of interest as cases of lymphatism which had contracted pneumococcal infection, and considering the facts that they were both well-grown, well-nourished young men, in whom the prognosis of lobar pneumonia ought to be exceptionally favourable, they both died in a most unusually early stage of the disease. In both these cases there were fairly numerous small hæmorrhages beneath the capsule of the thymus gland. In Case 14 it is quite impossible to say that the tentative diagnosis of tetanus was not the correct one, but if so it is certainly most unusual for that disease to follow such an extremely rapid course in the case of a healthy child without any external wound whatsoever. That some serious toxæmic state existed was shown by the condition of the boy's kidneys. Macroscopically the only abnormality to be detected was the presence of some scattered white streaks and spots, but microscopically the cells of the convoluted tubules stained extremely badly, in marked contrast to the rest of the kidney cells; while the white spots and streaks were found to consist of small round cells, such collections as would correspond with what have been described as "lymphorrhages." Whatever may have been the source of the toxin affecting the child, it seems reasonable to suggest that its effects were enhanced by the lymphatic dyscrasia present.

In three of the cases we carefully examined the state of the heart muscle, but in one only did we find any excess of fat, and in this heart the fat lay between the muscle fibres, not within them.

The younger brother of Case 8 was brought to hospital by his father for our examination, and was seen by my assistant, who found all the superficial lymph glands easily palpable, the tonsils were enlarged to a moderate degree, but without a laryngoscopic mirror he was unable to see the state of the lymphoid tissue at the back of the tongue, nor was he able with the means at his disposal to satisfy himself that there was persistence of the thymus.

Although I do not think that this series of 16 cases gives very much information as to the connexion between lymphatism and the liability to the occurrence of sudden death upon slight provocation, or as to the mechanism by which such death is brought about, yet it is, I hope, useful in showing that such a condition is not confined to Western peoples, but is probably as widespread out here in the East as in European countries; that it is not a condition in any way dependent upon race or environment, but exists among all races and in all climes. That this point has not hitherto been made plain is possibly due to the fact that here at any rate the operations for removal of tonsils and adenoids are, practically speaking, unknown, and it is, I believe, the tragic results in several of these minor operations which in European countries have attracted such wide and anxious interest to the occurrence of this condition and to its influence upon the individual's constitution.

Rangoon.

TWO RARE MANIFESTATIONS OF BILHARZIOSIS.

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CASE 1. *Bilharziosis of the spermatic cord simulating tuberculous epididymitis.*—A small Egyptian boy, aged 14 years, was admitted to Kasr-el-Ainy Hospital on May 30th, 1911, complaining of a hard swelling in the right side of his scrotum. He described it as starting, some months before admission, in a small lump above the right testicle, without any pain or other symptom, and gradually increasing in size and length. On examination it was seen that the right side of the scrotum was swollen, but there was no enlargement of the superficial veins or other abnormality externally. A hard, rounded, painless swelling was felt at the back of the testicle, but sharply separated off from it, and a chain of irregular nodules of varying sizes, extending along the cord half-way up to the external ring. The veins of the cord were free and the vas deferens could be felt above the mass quite thin and normal, but below it was entirely lost in the irregular mass. The testis was soft and smaller than its fellow. The skin was not anywhere adherent, and there was no softening of the nodular masses. No nodule could be felt in the prostate per rectum, though the gland was larger than normal. The urine contained no abnormal constituents and was said to be free of bilharzia ova.

Under anæsthesia the whole of the mass, including the testicle, was removed, the appearances both before and at the operation being considered to be tuberculous in nature. The small testis was found to be quite normal, but the whole of the epididymis was replaced by hard yellowish nodular tissue which extended up the cord for some distance. The vas deferens at the site of its section was thin and apparently normal inside and out, but just where it reached the mass were two yellow nodules, apparently typical tubercles. The greater part of the vas could be separated out from the mass, only becoming indissolubly incorporated with it in the lower part.

The peculiar appearances of the vas should have aroused our suspicions against tubercle, but we missed it, and were quite unprepared for Dr. A. R. Furguson's report, which was very short and to the point: "No signs of tuberculosis. The infiltration is bilharzial entirely, the nodular formations present being related to groups of ova as centres."

After recovering from the shock of this report a further investigation was made of the urine and *two* bilharzia ova were found after diligent search through four slides. For the rest, the urine was acid, of specific gravity 1016, and without deposit or other abnormality. Even had these ova been found before operation I do not think it would have altered our diagnosis, as such an occurrence is so common in Egypt at all ages that it might be easily passed without comment. In the face of the pathological examination, however, the discovery of ova became all-significant. The progress of the case was uneventful, and, admitting the mistake in diagnosis, I am convinced the treatment was correct as the testis must have been quite useless from a functional point of view, as there was such a complete replacement of the epididymis, tubes, and vas for the length of nearly two inches at the lower part of the specimen.

CASE 2. *Hæmospermia as the first symptom of bilharziosis.*—It has long been recognised that the vesiculæ seminales may become infiltrated with bilharzial tissue and at quite an early stage of the disease; but I had never, before the following case, met with one in which the presence of the disease in this situation furnished the first evidence of a general bilharzial infection.

The patient was an English soldier, who had been some years in Egypt, and consulted me on Nov. 7th, 1910, as he had recently experienced some blood-stained nocturnal emissions. He was not unnaturally alarmed and consulted a medical man in Khartoum, where he was then stationed, who told him not to worry "as there was no known disease that could produce such an extraordinary symptom and that it would pass off in time." The symptom continued, however, and was still present when I first saw him. I strongly suspected bilharzia as the cause, but before examining him in any way I sent his 24 hours' collection of urine to Dr. C. Todd for microscopical examination. The report came back that "the examination of the centrifugalised deposit revealed the presence of one single bilharzia ovum." The following day I confirmed the diagnosis by examination, and found that the vesiculæ seminales were thickened, especially on the left side, that the prostate was not enlarged, but the posterior wall of the bladder was thickened just above the prostate. Distinct, small, rounded elevations were felt with the sound, and a small papillomatous growth discovered just above the trigone and rather towards the left side.

On careful inquiry the patient admitted that he used to bathe in the Ismailieh canal, a stagnant stream at most times of the year and greatly favoured by natives as a public latrine, and that in October, 1909, he once passed a drop or two of blood after micturition. He also had some dull aching pain in the perineum from time to time. I put him on male fern and the usual *régime*, but there was really very little to treat. The urine was perfectly clear, and contained no albumin or other naked-eye abnormal constituent.

The case is interesting on account of the rarity of the special symptom above noted, and also because of its bearing on matrimony, which was contemplated in the very near future, and an opinion had to be given as to its advisability. After discussing the matter with my friend and colleague, Dr. Ferguson, professor of pathology, and going carefully into the cycle of the life-history from the ovum to the adult

worm, and the generally accepted theory of the mode of infection as propounded by Looss, we came to the conclusion that no risk of infection of the wife was likely to occur, and the marriage took place. The embryos can only hatch out in water and would soon die within their ova in the thick albuminous vaginal secretion.

Cairo.

A CASE OF ECLAMPSIA.

BY G. DE B. TURTLE, M.D. DURH., M.R.C.P. LOND.

THE patient, a married woman, aged 44, was first seen at 3 A.M. on July 9th, 1910 She gave the following history. She had been married five years and had one child, a boy, now nearly four years of age. Since his birth she had had two definite miscarriages and possibly more, the pregnancies being of about two to three months' duration. The previous confinement was normal, except for the facts that the patient's feet and hands had been somewhat œdematous for a few weeks beforehand, and that on the second day of her puerperium she is said to have had a slight fit, but no very definite account could be obtained. Her last period commenced on Oct. 19th, 1909, and lasted five days, so that presumably she would be confined about July 26th. For the last few weeks the patient had had some swelling of her legs, arms, hands, and face, accompanied by severe headaches and dimness of vision. For the last few hours she had experienced great pain in the lumbar region and a blood-stained discharge per vaginam.

On examination the patient was found to be œdematous practically all over, the legs and feet being greatly swollen; by abdominal palpation the child was found to be lying with the head downwards and with the back lying to the left and in front (left occipito-anterior); the fœtal heart sounds were readily heard at a rate of 140 per minute. The vaginal examination was difficult owing to the œdema of the walls; the os uteri was patulous and admitted the tip of the index finger, but it was not possible to reach the presenting part. There were no true labour pains, and the loss by the vagina was only slight. A specimen of the urine was examined. It had a specific gravity of 1015, and on being boiled it became nearly solid with albumin. Some blood was also present, but this was probably of vaginal origin. A portion of the specimen of the urine was centrifugalised and the deposit examined microscopically; it contained renal cells, epithelial casts (both fatty and granular), blood corpuscles, and vaginal and bladder epithelial cells.

During the next 24 hours the patient passed only 13 oz. of urine. An enema had previously been administered with but little result, so active purgation with jalap and scammony was resorted to. The bowels consequently were freely opened. The œdema became less and the patient felt better. The blood pressure was taken with a Martin's modification of Riva-Rocci's sphygmomanometer. It registered 190 mm. Hg. The fœtal heart sounds were 124 per minute. During the next 24 hours 54 oz. of urine were passed, and there was much less albumin present in the specimen. The arterial blood pressure fell to 170 mm. Hg, and the fœtal heart sounds were 132 per minute. During the next 24 hours 75 oz. of urine were passed and the blood pressure was 165 mm. Hg. The amount of albumin decreased to 6 grm. to the litre as estimated by Esbach's albuminometer.

On the morning of July 12th a consultation was held as to the advisability of inducing labour, but as the symptoms were improving so rapidly and the œdema was fast disappearing, and as the fœtal heart sounds were quite regular and easily heard, it was decided to await events. At 4 P.M. on the same day, possibly owing to the excessive purgation, labour commenced naturally; the vertex presented with the occiput pointing to the left and anteriorly. A vaginal examination was made about 8 P.M., and the cervix was found to be dilating well and the labour pains were quite regular. At 9.45 the patient suddenly said that she felt something was coming away from her. On examination a hand was seen to be presenting at the vulva with a loop of the umbilical cord. It was impossible to perform version or replace the hand. Chloroform was administered and forceps immediately applied to the head, which was lying in the vagina. Delivery was easily effected as the head was somewhat small; the child, a male, was born asphyxiated, but the heart was beating very feebly and quite slowly. Direct insufflation was commenced, and after being persisted in for 45 minutes voluntary respirations commenced and continued until 2 A.M., when the child had convulsions. Small inhalations of chloroform were administered, but the fits continued, although at longer intervals. Between the intervals of the fits the child had some nourishment administered, and after the first 12 hours a little improvement was shown. Besides this method of treatment small quantities of potassium bromide in solution were given by the mouth, subcutaneous injections of saline solution (a teaspoonful of sodium chloride to a pint of sterilised water) and oxygen inhalations were all tried, but the child eventually died at 12 noon on July 14th—i.e., 38 hours after birth. No post-mortem examination was made, so that the question as to the origin of the fits, whether they were due to meningeal hæmorrhage or whether they were of toxic origin, must remain in doubt; sufficient to say, however, that they closely resembled eclamptic convulsions in character, commencing with marked lividity and tonic spasm and ending with stertorous breathing.

On the afternoon of July 13th the patient complained of headache and dimness of vision, and at 9 P.M she had an eclamptic convulsion followed by another at 10.30 P.M. A hypodermic injection of morphinæ sulphas, gr. ½, was given, followed by a hot pack, which produced very profuse sweating. The bowels were opened by calomel and magnesium sulphate. As far as could be ascertained about 50 oz. of urine were passed on this day. On the 14th, 120 oz. of urine were passed by the patient in about 12 hours, and on the 15th 84 oz. The blood pressure was still 170 mm. Hg, but the amount of albumin in the urine was considerably less, measuring 4 grm. to the litre. On the 16th there was a small scotoma in the centre of each field of vision (toxic amblyopia). The bowels were being moved, and there was a fairly large quantity of urine passed. The breasts had become swollen and painful, and were full of milk; at her previous confinement they had never shown any signs of activity, but their activity this time was probably due in some measure to the large amount of fluid, especially barley-water, which the patient had been taking by the mouth.

On July 18th, by abdominal palpation the involution of the uterus was found to be progressing normally, and the breasts were less active. An ophthalmoscopic examination was made, but there were no hæmorrhages to be seen in the retina, nor was there any papillitis or cloudiness of the optic disc. The skin during this period was acting very freely, and was doubtless assisting greatly in the elimination of the poison. Good progress was made until July 23rd, when the patient's left leg swelled and became painful; the swelling subsided, however, by the next day. On the 25th the patient still complained of pain in the leg and also "neuralgic pain" in the hip. On the 27th there was pain in the shoulder, and the temperature rose and the pulse became more rapid. These symptoms increased until the 29th, when the temperature was 100·2°, the pulse 130, and the respirations 40 per minute, with rather shallow breathing. No physical signs could be found in the lungs; the albumin in the urine was also increased, being about 2 grm. to the litre. The symptoms then subsided until August 4th, when the patient again had pain in the right side of the chest accompanied by a rise of temperature, increased pulse-rate, and rapid breathing—not so marked an attack, however, as the former. During both of these attacks the patient had been troubled with a short, irritating cough, with little or no expectoration and no hæmoptysis. On August 10th, as there were no cough and no pain and the pulse was 88 and quite regular, the patient was rolled from the bed on to the sofa and remained there some hours, the same proceeding being adopted on the 11th. On the 12th I was called at 5 A M, as the patient was said to be having another attack. According to the nurse's account the patient woke at 5 A.M., having slept very well for some hours. She was extremely dyspnœic, the respirations being very shallow and rapid; great pain was complained of at the back of the neck and in the centre of the chest. The pulse was 90 per minute and regular, but it soon became more rapid, and at 5.30 A M. was 120; the patient was cold and felt faint and exhausted. When I saw her about this time there was extreme dyspnœa and a constant cough. The pulse was 130 per minute and rather feeble, the skin was cold and clammy, and the face livid; in fact, she looked to be *in extremis*. Ether, m. 20

subcutaneously, was given, and ½ oz. of brandy in 2 oz. of warm milk was administered by the mouth. The patient's colour improved, but the pulse remained feeble, so that at 8.15 A.M. digitalin, gr. 1/100, was administered hypodermically. Throughout the day the patient had frequent inhalations of oxygen, and at 8 P.M. the pulse had dropped to 116 and she felt better. This fortunately proved to be the last of her attacks, for from this time onwards her recovery was uninterrupted.

On August 31st the urine was examined; it had a specific gravity of 1016, was slightly cloudy, and contained a trace of albumin (by Esbach ½ grm. to the litre), but no sugar. A portion which was centrifugalised showed bladder and renal epithelial cells and bacillus coli in fair numbers but no casts. In February, 1911, six months later, the urine contained no albumin and the blood pressure was 135 mm. Hg.

This case is of interest in several ways:—1. The rapid improvement in the patient's condition under treatment before labour came on. 2. The fall in blood pressure and the accompanying rise in the output of urine. 3. The nature of the three attacks of dyspnœa which the patient had during the puerperium. 4. The nature of the convulsions which the child had and from which it succumbed.

With regard to the third point, I am of the opinion that the patient had a clot somewhere, possibly commencing in the left femoral vein, as evidenced by the swelling of that leg on July 22nd, and that small emboli were cast off and carried up to the right side of the heart and so into the lung. Why to the right lung only it is difficult to say. There were never any physical signs in the lungs and there was no hæmoptysis. The alternative idea was that these attacks were due to cardiac dilatation, but it will be noted that they commenced with dyspnœa and cough and the pulse became rapid afterwards.

With regard to point 4, I have already mentioned that the possibility of cerebral hæmorrhage could not be excluded, but the way in which the fits came on with tonic spasm, finishing with clonus and stertorous breathing, certainly pointed to their being of toxæmic origin.

In conclusion, I should like to thank my friend Dr. Ernest Playfair, not only for much help at the time of the labour, but also for seeing the case with me from time to time afterwards, and for many valuable suggestions in the treatment.

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THE INFLUENCE OF SALICYLATES AND KINDRED DRUGS ON THYROID ACTIVITY.

BY H. EWAN WALLER, M.R.C.S. ENG., L.R.C.P. LOND.

THIS subject involves of necessity some consideration of thyroid activity in relation to fever. It is a tempting theory that the ordinary symptoms of fever are due, at least in part, to increased thyroid activity, such activity being one of Nature's methods of dealing with toxins which may have obtained access to, or been formed within, the body. Evidence in favour of this supposition has been supplied by Roger and Garnier, who found that in acute infectious diseases with fever there is increased thyroid activity with enlargement of the folliculi, which are filled with a large quantity of colloid substance. Further, we have ample evidence that thyroid exhaustion is commonly manifested by clinical symptoms as a sequela of febrile diseases. Dr. Arnold Lorand has discussed the whole matter in a most interesting article which appeared in THE LANCET of Nov. 9th, 1907, and throughout that article he certainly cannot be accused of underrating thyroid influence. He attributes the rapid pulse, abundant perspiration, polyuria, and diarrhœa all directly to thyroid influence, and quotes experiments to show that the rise of temperature may very well be due to the same cause. The supposition is attended with certain difficulties, and if we accept it we shall be driven to certain other logical conclusions. Throughout we shall take Graves's disease as our standard of excessive thyroid activity.

Now, the process of fever is not a solitary and simple condition, but a complex cycle of events, which tends, however, to follow a fairly definite course. Accepting thyroid activity as the main factor, we shall attempt to interpret events as we go along. Firstly, there is a sensation of lassitude and chilliness, which is probably a signal that toxins have gained access to the system, which has used up all the available thyroid secretion in attempting to neutralise them. And though the thyroid sets to work with all diligence to make more, for a time the secretion is neutralised by the toxins as fast as it can be produced. Thus there is a period of temporary thyroid deficiency in spite of rapid production. The deficiency accounts for the sensation of cold, often amounting to actual shivering, and also for the constipation which is so frequently present. It may also account for the febrile want of appetite, often observable also in patients who suffer from thyroid inadequacy, and possibly even for excessive thirst, which I have likewise often noticed in similar cases, though so far as I am aware the symptom has not been noted elsewhere. One point about the thirst is that cold water is the drink preferred to any other, a fact which may be readily verified by inquiries among half a dozen children suffering from minor degrees of thyroid inadequacy. On the other hand, we must assume that the thyroid activity is in itself the cause of the increased pulse-rate and rise of temperature. The flushed face, the sensation of throbbing carotids and temples, and the consciousness of every heart beat are all familiar features both in Graves's disease and fever. The tremor and sensation of fatigue will be equally witnessed in both conditions. But as yet we have no sweating, which is almost invariable in Graves's disease. In fever this occurs later, and with it the fall of temperature. On the other hand, pyrexia is by no means a constant feature of Graves's disease.

Here are two difficulties which require careful handling, and have possibly proved a stumbling-block to some who might otherwise have accepted this theory before. The difficulty can be got over by the following explanation. A rise of temperature is the immediate effect of big doses of thyroid, whether administered by the mouth or by sudden hyperactivity of the patient's own gland. Pyrexia is also prone to occur when the surgeon unintentionally floods the system with thyroid secretion by manipulation of the gland during operation. But sweating only occurs when the organism finds itself flushed with more thyroid secretion than is required. Thus in Graves's disease, where secretion is in excess all the time, sweating is the rule. Again, during active exercise there is evidence of increased thyroid activity shown by increased pulse-rate and flushed skin, but sweating does not occur till secretion is in excess of demands, the first supplies being presumably taken up by fatigue products. And in fevers, when the production of thyroid secretion exceeds the amount required to neutralise the toxins, sweating occurs, followed by a fall of temperature. The improved condition of the patient is fully in accordance with this view. The fall of temperature is partly regulated by evaporation of sweat, but probably depends still more on reflex inhibition of the thyroid gland, which has now succeeded in the task it set out to perform—namely, neutralising the toxins, producing secretion enough and to spare. The duration and severity of the symptoms will naturally depend on the amount of toxins produced, and the capacity of the thyroid to neutralise them in a longer or shorter time. The dose may, of course, be more than the thyroid can deal with, or hyperpyrexia may result from excessive thyroid activity. Such contingencies do not affect the argument as a whole, and it may be fairly claimed that the position is at least not untenable.

Similarly, it has been argued that salicylates (and presumably other antipyretics) produce their effects by thyroid stimulation. A moderate dose of salicylate of soda in the healthy subject produces (according to Mitchell Bruce) "increased cardiac action, flushing and warmth of the surface with perspiration," and other symptoms which are to some extent peculiar to the drug. So far, this may very well be explained on Dr. Lorand's assumption that salicylate of soda acts by stimulating thyroid activity. And in fevers, when thyroid activity is already high, a dose of salicylate of soda may still further stimulate the gland and so hasten the sweating and general abatement of the symptoms. Whether the proceeding is beneficial or not is quite another matter, and involves the whole question of uses and abuses of antipyretics. The patient feels better with a fall of temperature and a good sweat, but sometimes the temperature rises, again bringing

back all the previous discomfort, and in this case we may well wonder whether we have been premature in our efforts or not. In theory, of course, when the illness is commencing and toxæmia still slight, if by a few doses of salicylates or other antipyretics we can hurl into the circulation enough thyroid secretion to form antitoxins or annihilate the germs by whatever mode is usual, we may then congratulate ourselves on having cut short the attack. Howbeit, our method may have been extravagant, and if we have miscalculated the hidden forces arrayed against us we may have committed a grave strategical error which perhaps would not have been done by Nature unaided.

It is, of course, possible or even probable that salicylates have an action which is hostile to micro-organisms or even poisons of other origin, and that benefit accrues from such action quite apart from thyroid influence. But the point I wish to lay stress on is that salicylates have a powerful influence against thyroid activity. In view of what has just been said this seems a startling statement and therefore requires proof. Whether salicylates powerfully stimulate and so rapidly exhaust thyroid activity, or whether they actually neutralise it, and so in the case of an active gland stimulate further production (like lemon-juice and saliva or alkalies and gastric secretion), I cannot say, but the evidence I am about to bring forward points to the latter conclusion. I will quote three cases.

CASE 1.—A robust adult had an acute tonsillitis. He had stuck to his work for three or four days when I first saw him one morning. He had then taken to his bed with a pulse-rate of 120 and temperature 102° F. He had headache, and aches and pains in the limbs severe enough to suggest rheumatism, but possibly only influenzal. He was given a mixture containing 15-grain doses of sodium salicylate and half-drachm doses of compound tincture of cinchona. But owing to variations in the size of the domestic tablespoon he took repeatedly a larger dose, roughly 20 grains of salicylate and 40 minims of bark every four hours. The error was not discovered for 36 hours. He then had a (morning) pulse-rate of 48 and temperature of 96·4°. He had sweated profusely the first night, and his bowels were obstinately constipated, resisting strong doses of aperient. The pulse and temperature remained at this low level all the next day, and the bowels were still obstinately constipated in spite of aperients, though the salicylate mixture had been left off. Thyroid, 2½ grains twice a day, was then given for two days and the temperature again rose, this time to nearly 101°, and the pulse to 98. The throat progressed rather slowly in spite of energetic antiseptic treatment which had given me excellent results in other cases. The patient returned to work 12 days after I first saw him, when in spite of full doses of strychnine he had a very soft dicrotic pulse of 76 and a blood pressure of only 100 mm. Hg.

I have already mentioned that this patient was usually robust, and may add that ordinarily his bowels were remarkably regular. The low pulse-rate, the dropped temperature, and obstinate constipation all suggest that in this case the thyroid was seriously depressed by the drugs mentioned. The low blood pressure was probably due to the same cause, inasmuch as high blood pressure is a common feature of Graves's disease. There is a widely prevalent idea that thyroid activity lowers blood pressure. It causes flushing of the skin and sweating, so the conclusion is a natural one. Actually, I am certain that it is wrong. Cretins and thyroid deficients have low blood pressure, and repeated observations have shown me that thyroid administration almost invariably raises blood pressure, possibly by simple acceleration and augmentation of the heart beat. Hence the ill effect of large doses of thyroid on a heart with feeble muscle. If this interpretation be correct, it is probable that the heavy doses administered did harm and prolonged convalescence.

CASE 2.—The patient was a woman, aged 39, who had suffered from life-long constipation and manifested the ordinary signs of minor thyroid inadequacy. Her general condition had been enormously improved and constipation much lessened by thyroid medication. On one occasion her bowels had been perfectly regular for over a week without any medicine other than thyroid, and she could not remember that this had ever occurred before. At the time of which I now write she was taking a small dose of cascara nightly, and was somewhat tired owing to disturbed nights entailed by her duties as nurse. She was given aceto-salicylic acid for a slight attack of lumbago, from which she had been suffering for several days, and though the dose did not at any time exceed 10 grains thrice daily, her constipation greatly increased, and the nightly dose of aperient medicine had to be more than doubled while taking this drug. It is only reasonable to suppose that the increased constipation was due to exaggeration of the thyroid depression caused by the aceto-salicylic acid.

CASE 3.—This was a case of Graves's disease. I had previously found aspirin to be of great value in controlling paroxysms of tachycardia, and accordingly prescribed a daily morning dose of 10 grains for this patient, who usually had an attack of palpitation after breakfast. The remedy was perfectly successful, and in view of the cases just quoted I resolved to try the effect of three or four doses daily. The result was rather remarkable and more than justified my expectations. The pulse-rate improved considerably and the patient felt very much better. Her bowels, which had previously been open twice and often three times a day, were now open but once daily. She increased 2 lb. 1 oz. in three days. Though this increase in weight might be attributed to fæcal accumulation it does not affect the argument, inasmuch as the previous intestinal activity was due to excessive thyroid action. The only objectionable feature was some gastric disturbance, which may have been caused by using a less pure substitute for aspirin. Sweating was, if anything, less than previously.

More prolonged experience of this treatment is necessary before one can pronounce final judgment, but I think it proves that aspirin and possibly other salicylates and allied drugs will be found of inestimable value in Graves's disease. One might avoid the gastric disturbance and possibly get still better results by local use of one of the easily absorbed salicylic compounds directly applied to the skin over the thyroid gland. The final result naturally depends on whether thyroid control or exhaustion will cure Graves's disease or otherwise, which is quite another question and cannot now be discussed.

Further, in view of the beneficial results recently obtained by thyroidectomy in inoperable cancer, similar benefit might be obtained by the use of aspirin in such cases, many of which are also unsuitable for thyroidectomy. Aspirin has, of course, been used for the relief of pain in cancer, and this may explain the *modus operandi*.

Birmingham.

MEDIASTINAL CAUSES OF CHRONIC COUGH IN CHILDREN.

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IT happens again and again, especially in towns, that young children suffer from a persistent cough which lasts on and off for weeks or months without being materially relieved by any of the ordinary cough mixtures, lozenges, linctuses, or syrups, and yet without any very obviously abnormal physical signs being discoverable to account for this cough. Not a few such cases are attributed in an indefinite kind of way to adenoids or to tonsils and adenoids, or to mouth-breathing; but there is another cause at work in at any rate one group of these cases—namely, chronic enlargement, sometimes no doubt associated with tuberculous caseation, of the glands at the bifurcation of the trachea. When a large number of post-mortem examinations are made the fact obtrudes itself that the bronchial gland immediately below the right bronchus is affected far more frequently than is the gland upon the left side, and the right phrenic nerve is frequently seen to be displaced by the enlarged lymphatic gland in such a way as probably to be much irritated by it and thus to lead to attacks of purposeless coughing—that is to say, coughing which does not succeed in the bringing up of any sputum. In a certain number of cases it is possible to demonstrate the enlargement of this right bronchial gland by means of the X rays, as the following case demonstrates.

The patient was a healthy-looking, chubby-cheeked girl, 7 years of age, who was brought to the hospital with a history that she had suffered from a bad cough for months without this cough apparently being benefited, except perhaps momentarily, by the administration of any of the usual

remedies. There were no abnormal physical signs to be made out in the chest, but the possibility of there being a caseous bronchial gland was suggested first by the fact that the girl had been in the habit of drinking large quantities of unboiled London milk—a very prolific source of this type of tuberculous infection, I believe—whilst an elder brother had died from tuberculous meningitis, which is also related much more closely to cow's milk infection than to a phthisical family history. On examination of the chest with the X rays the heart and the diaphragm appeared to be normal, the latter moving fairly well on both sides. The lungs themselves were quite clear at their apices, but bulging to the right of the spine in the region of the root of the right lung there was a very obviously abnormal shadow corresponding precisely with an opaque and presumably caseous gland close to the root of the right lung.

It is probable that the attacks of coughing which are so troublesome in some heart cases are to be explained by irritation of the phrenic nerves in a similar way, by their being displaced and stretched by the dilated and hypertrophied heart.

The importance of realising that enlarged bronchial glands may be the cause of persistent coughing in children is that the enlargement is generally tuberculous, and therefore the correct treatment is to adopt the general hygiene best adapted to the relief of a tuberculous infection together with measures calculated to prevent the swallowing of more living tubercle bacilli, an end to be accomplished either by obtaining milk from cows that have been satisfactorily tested with tuberculin, or else by making sure that any tubercle bacilli in the milk have been killed by efficient sterilisation, preferably by thorough boiling.

Wimpole-street, W.

"COMFORTER" OTITIS MEDIA.[1]

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MIDDLE-EAR suppuration may occur at all ages from earliest babyhood to extreme old age, but the seed of disease is usually laid down before puberty, and the object of this paper is to express an opinion as to the origin of suppurative otitis media in babies.

If we consider the possible ways of infection of the middle ear we find that these are three. This infection must take place either (1) by way of the external auditory meatus; (2) by the blood stream; or (3) by the Eustachian tube.

1. Now the first of these may be at once eliminated, for infection from this source usually means mischievous endeavours to remove wax or foreign bodies from the meatus, with damage to the membrana tympani, and there would be a clear history.

2. Infection by the blood stream means an associated septicæmia. I believe that such when it occurs usually has the pneumococcus as the infecting organism,[2] and ofttimes there is a history of pneumonia. When such cases occur the patient is usually ill with, or convalescent from, pneumonia, and the middle-ear disease may be associated with other complications, such as empyema, abscess of the skin, arthritis, and even peritonitis. Referring to this type of case, my memory is carried back to the case of a small child who was under the care of one of my medical colleagues at the East London Hospital for Children. This child, after an attack of pneumonia, developed acute otitis media and arthritis of the right shoulder-joint. I opened the shoulder-joint and washed it out, and treated the ear discharge with lotions, and both complications cleared up without further difficulty. At the time of operation films of the pus were made from the joint and the middle ear, and in both a Gram-positive diplococcus, morphologically identical with the pneumococcus, was found.

3. But the point about these babies with middle-ear suppuration, which are brought to an out-patient practice, is that they often appear as fine, healthy-looking infants. Usually if anything is wrong with them it is that they are anæmic. They are free from fever, from signs of other illness, or history of other illness, and, in fact, it is impossible to associate them with a septicæmia, of which the middle-ear disease is a local manifestation. When first I took out-patient work at the East London Hospital for Children the origin of this suppuration perplexed me. As there was no evidence of infection by the meatus, nor yet by the blood, the only conclusion to arrive at was that the infection was by the Eustachian tube, and naturally on the top of this conclusion came the question: How does this infection take place?

Adenoids sufficiently large to be obstructive are uncommon in infants under 18 months, and certainly under 12 months they are rare. They do occur, I believe, but even in the large out-patient practice of a children's hospital such cases are rare, and the class of case to which I am now particularly referring are obviously nose-breathers, have no heaviness of breathing, no chronic nasal discharge, or other sign pointing to adenoids. Between two and three years of age, cases of adenoid enlargement, complicated with middle-ear disease either as chronic suppuration, recurrent suppuration, or pain in the ear or ears, are common; but they are so well recognised by the profession that I need not emphasise that it is not the class to which reference is made here.

The concentration on the subject resulting from seeing a large number of babies suffering from chronic suppuration of the middle ear drew my attention to the constant association of the comforter or dummy and this middle-ear disease; and once this association has been remarked, the correlation can be worked out quite easily, arguing by analogy. In the present day it may be stated as a recognised fact that in older children adenoid growths and middle-ear disease are intimately associated as cause and effect; and we recognise that the association, speaking without any special exactitude, is that the adenoids lead to embarrassment of nasal respiration and some resulting opening of the mouth; that through the opened mouth cold, dry, and unpurified air enters, gradually lowers resistance, and leads to the infection of the oro-pharynx and naso-pharynx, including the adenoid region; and that the adenoid region can at once become a vantage-ground for organisms because of its crypts, its shut-in position, great vascularity, and free secretion. The openings of the Eustachian tubes situated on the side walls of the naso-pharynx are constantly exposed to infection, and we are only too well aware in how large a number of cases the organisms get to the middle ear.

Now it seems to me that the great danger of adenoids is the mouth-breathing, leading to oral and naso-pharyngeal sepsis. This is borne out by the observation that middle-ear disease will ofttimes not clear up, despite the removal of adenoid growths and suitable local treatment, unless nose breathing is established. It seems fair to argue by analogy that a large number of cases of middle-ear suppuration in babies result from oral sepsis introduced, not by mouth-breathing, but by the comforter or dummy. I would here remind my readers that this theorising on the subject came after the observation made in an extensive out-patient practice of a Children's Hospital, and it was this observation which led me in the first place to associate the so-called comforter with this suppuration.

The way in which the comforter acts is by introducing oral sepsis. Usually the comforter is a rubber teat in some sort of bone collar, and fixed on to the baby either by a piece of ribbon, tape, or string, and when not in the baby's mouth touching all sorts of unclean things; and from the fact that the surface is usually moist and sticky from saliva and mucus, particles of all sorts adhere. Then it is a lamentable practice on the part of baby-tenders to give the comforter a preliminary suck before putting it into the baby's mouth, and to anyone who has had any experience of the neglect of the teeth which occurs among the servant class in this country the variety of organisms thereby introduced into the comparatively clean mouth of an infant can be more easily imagined than described.

This, in my opinion, is the crux of the matter. The comforter is at fault only in so far as it introduces sepsis leading to what are probably catarrhal processes, giving very little, if any, signs or symptoms in the mouth, oro-pharynx, and naso-pharynx; but once they spread by the tube to the middle ear the lack of drainage quickly becomes felt and suppuration often results. That catarrh alone may result, with painful distension of the middle ear, is probable from the occurrence

[1] A paper read at a meeting of the Cambridge Medical Society.
[2] Pneumococcal Otitis Media, by the writer (see West London Medico-Chirurgical Journal, April, 1908).

of pain in the ears in some babies who never get discharge coming from the meatus. Even if it gets no further than a painful catarrhal process, however, it is capable of doing considerable damage in a small enclosed space like the middle ear.

It is not my intention to deal with the pathological changes arising from middle-ear suppuration, but reference may be made to the permanent damage which results from destruction of the ciliated epithelium of the Eustachian tube and which may leave an unguarded path for future infection. All otologists will have met with cases of suppuration occurring later in life where the patients have stated that as babies they were said to have had discharging ears; and again, it is of no uncommon occurrence in examining a patient for some catarrhal deafness associated with later years to find healed and even unhealed perforations of the membrana tympani, where the patient never remembers having had suppuration of the middle ear, and where the inference is that it occurred at a very early age.

I have no intention to dogmatise. It is now my firm belief that a large proportion of cases of suppuration of the middle ear in infants is directly due to the comforter, and I am in the habit of labelling them "comforter" otitis media; but I am also very well aware that there are lots of babies who suck comforters but never suffer from ear trouble, and, on the other hand, that there are cases where middle-ear disease occurs although a comforter has never been used. Given a comforter which is cleaned regularly, never allowed to touch anything dirty, and never placed in any mouth but that of the infant, the septic element is eliminated and all may be well. Experience suggests that it is a high standard to maintain, but there is no reason why it should not be maintained if the comforter is held to be necessary. As regards the cases where suppuration occurs without any comforter to point to as the *fons et origo mali*, they will probably be found to be few in number, and the cause may possibly lie in mouth sepsis from other causes, just as occasionally one finds middle-ear suppuration in older children without a trace of adenoid enlargement.

The prognosis of these cases may be said to be good, both from the point of view of cure of the suppuration and maintenance of hearing power. In treatment the aim will be to remove the cause, cleanse the mouth, wash away the discharge from the middle ear and so prevent accumulation and stagnation of pus, and, finally, to provide against any secondary infection by way of the meatus from outside. These guiding principles are carried out in practice by eliminating the comforter or rigidly enforcing its cleanly use, cleaning the mouth with some mild antiseptic preparation such as glycerinum boracis and so preventing further infection by the tube, and treating the existing suppuration by syringing out the middle ear three times a day with some weak antiseptic lotion after instilling a few drops of hydrogen peroxide (10 volumes). Finally, it is a routine of my practice to advise the wearing of some antiseptic wool in the concha, to prevent secondary infection from the outside in between the syringings. This last precaution is especially necessary in babies, because of the risks of getting soapy water into the ears when they are bathed.

Cambridge.

THE TREATMENT OF TORTICOLLIS:

A PLEA FOR A REVISION OF ACCEPTED TREATMENT.

BY PAUL B. ROTH, F.R.C.S. ENG.

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THE observations in the following paper apply to the torticollis which is met with in children, which is usually described as congenital, and which is due to a non-spasmodic shortening of one sterno-mastoid muscle. The aim of the paper is to call attention to the fact that after torticollis has been treated by tenotomy no retentive apparatus is necessary. The four cases described were in-patients at the London Hospital, under the care of Sir Frederic Eve, to whom I am indebted for permission to publish their notes.

It is generally taught in orthopædic works that the treatment for this condition is division of the muscle, followed by use of retentive apparatus. Thus Tubby says: "The principles which should guide us in undertaking operative measures are:— ..... 2. After tenotomy, to maintain the improved position by means of a simple apparatus, and such as does not interfere with daily manipulations."[1] "The head is fixed in plaster in the over-corrected position for 10 to 14 days, and the patient is then sent out with a plaster-of-Paris collar. It is well to divide this anteriorly, and to lace it, so that it may be taken off, and daily movements of active and passive manipulation practised. The collar should be worn for four to six months."[2]

Bradford and Lovett, 1900, say: "The head should be immediately rectified and retained in a corrected position, either by means of a plaster-of-Paris bandage enclosing the head and trunk, or ..... the bed frame described in the treatment of caries of the spine. ..... This can be employed for a week or ten days, and a light retention appliance be used."[3] "This latter should be worn for from three to six months, when permanent cure should be established. Without the use of apparatus after operation relapse is likely to occur."[4]

Royal Whitman, 1907, says: "The head should be fixed during the process of repair in the over-corrected position. ..... In this attitude a plaster bandage should be applied surrounding the head and the thorax. It should remain ..... until the tendency towards deformity has been checked."[5] "Fixation in the over-corrected position is very important in childhood as an aid in overcoming the deformity habit. ..... The plaster bandage is usually retained from four to eight weeks. When it is removed, massage, manipulation, and gymnastic training are indicated."[6]

Stewart, 1908, says: "In the operative treatment two points of importance call for consideration: first, to rectify the distortion by cutting or by manipulation; second, to maintain the head in a suitable position by some form of apparatus."[7] "The very best form of the latter is the plaster helmet. ..... After the wound has healed the helmet may be left on for from four to eight weeks, or even longer."[8] "If, after the splint has been removed, it be found that the deformity be overcome, it will be necessary, in order to prevent its return, to institute systematic exercises, to employ massage, and constantly to take advantage of posture."[9]

Finally, G. A. Wright, 1910, gives an account of the use of elastic traction after tenotomy for torticollis,[10] and obviously regards its use as necessary.

The above quotations would show that after operation the use of retentive apparatus is imperative. I wish to point out that it is superfluous.

It will be noticed that both Whitman and Stewart advocate systematic exercises *after* retentive apparatus has been worn for many months; and that Tubby recommends them *concurrently* with it. I submit that they should be used *from the first*, and without apparatus of any sort whatsoever. It will be seen further that these writers do not state what exercises should be done; there is only a general statement about them. Unfortunately, in the majority of orthopædic works, whenever exercises are mentioned, the same absence of detail is noticeable.

While house-surgeon at the London Hospital in 1909 I operated upon four cases of torticollis. After division of the muscle and fasciæ by the open operation the head was firmly manipulated into an over-corrected position. The child was then put back to bed with the head between sandbags, and on the second or third day was allowed up and gentle passive movements were begun. On the fifth or sixth day active movements took their place, and after removal of the stitches the mother was shown how to superintend the carrying out of these movements at home for five minutes twice a day. These four patients are completely cured. By "cured" is meant that a year after operation the child holds his head perfectly straight, that he can twist his head round to look over one shoulder just as well as over the other, and that only by finding the operation scar can the affected side be discovered.

1 Tubby: Deformities. 1896, p. 199.
2 Ibid., p. 203.
3 Bradford and Lovett: Orthopædic Surgery, 1900, pp. 588, 589.
4 Ibid., p. 590.
5 Royal Whitman: Orthopædic Surgery, 1907, p. 655.
6 Ibid., p. 656.
7 Stewart: American Practice of Surgery, 1908, vol. iv., p. 774.
8 Ibid., p. 779.
9 Ibid., p. 780.
10 Wright: Brit. Med. Jour., "Elastic Traction and Pressure in Surgery," Nov. 26th, 1910, p. 1667.

The exercises are as follows, carried out with the patient lying supine on the table:—

1. *Head twisting.*—The head is slowly rotated as far as it will go to the right, then slowly to the front again, then slowly to the left, then slowly to the front, the patient counting audibly 1, 2, 3 during each movement. This is repeated six times.

2. *Head sideways bending.*—The head is laterally flexed slowly to the right, so as to bring the right ear close to the right shoulder, then slowly back to the median position, then slowly to the left, then slowly back again. During this exercise the patient looks up at the ceiling, and the back of the head rests on the table, in contrast to exercise No. 1, when he looks alternately over one shoulder and then over the other. As in the former exercise, the patient counts aloud during each movement, which is repeated six times.

At first these movements are performed passively by the surgeon; but the patient is encouraged to help actively, and by the fourth or fifth day can do them perfectly well by himself. When the child leaves the hospital after the stitches are out, the mother is shown what the exercises are, and is made to carry them out in the presence of the surgeon. It is explained to her why the exercises are ordered, and why she must continually correct the patient if he holds his head crookedly. The patient is not seen again.

It has been objected that the mothers of hospital patients are not sufficiently intelligent to carry out home treatment of their children. It will be found that the stupidity of the mother bears an inverse ratio to the care and patience of the surgeon. The four cases were as follows:

CASE 1.—A. B., reg. no. 3371, aged 5 years. Difficult labour, instrumental; head presentation. Left torticollis, only noticed one year ago. Operation Sept. 11th, 1909. Left hospital Sept. 17th. Not heard of until April 13th, 1911, when the mother said he held his head perfectly straight, and was just the same in every way as his brother (see Case 3). The exercises were done for three months.

CASE 2.—C. D., reg. no. 3664, aged 4 years. Normal labour. Left torticollis, first noticed when 11 months old. Operation Oct. 7th, 1909. Left hospital Oct. 13th, but came back to have stitches removed. Not seen until April 21st, 1911, when absolutely cured. The exercises were done for one year.

CASE 3.—E. F. (brother of patient in Case 1), reg. no. 3812, aged 11 years. Breech presentation. Left torticollis, noticed when 7 or 8 years old. Face asymmetrical; left eye lower than right. Operation Oct. 19th, 1909. Left hospital Oct. 24th, but came back to have stitches removed. Not seen until April 13th, 1911, when absolutely cured. Face symmetrical. Exercises done for three months.

CASE 4.—G. H., reg. no. 3885, aged 4 years. Difficult labour, instrumental. Right torticollis, noticed when 6 months old, when received by foster mother. Operation Oct. 22nd, 1909. Left hospital Nov. 11th. Not seen until April 13th, 1911, when absolutely cured. Exercises only done one week.

Thus complete cure has been brought about in four cases without the aid of retentive apparatus; that is to say, in these four cases retentive apparatus was needless. Is it not needless in all other cases which come within this scope?

There is nothing new in what I have written: my father in 1884 [1] drew attention to the same matter. Yet still the use of retentive apparatus goes on, and each surgeon endeavours to invent some new apparatus when none is wanted.

Harley-street, W.

A CASE OF SUPPURATING INGUINAL OVARIAN HERNIA; OPERATION; RECOVERY.

BY JOHN J. WADDELOW, F.R.C.S. ENG.

THE patient was aged 28, and had been married 11 years; she had had three children. The first confinement took place on July 22nd, 1901, when an impacted occipito-posterior presentation was delivered by perforation and cephalotripsy after ineffectual endeavours by forceps. Her second confinement was on Feb. 12th, 1906, when she was successfully delivered of a living male child by forceps. Her third confinement took place on Oct. 13th, 1910, when a dead child was delivered with great difficulty by high forceps (Neville's axis-traction). About six months after her second confinement she noticed a lump in her right groin, which she thought she had brought on by lifting weights (she had been changing houses). At first the lump would be only down occasionally and always going back at night when she reclined. Sometimes it would come down when she put her feet to the ground. During pregnancy the lump was never in evidence.

There was never any actual pain, only a dull ache, [illegible]ng a feeling of sickness and making walking difficult. Thinking that this was an ordinary rupture, without taking any professional advice, she, after her own fashion, measured herself for a truss, which she sent for to a neighbouring town by the carrier. As might be supposed, this truss did not fulfil the purpose for which it was intended. After her third confinement on Oct. 13th all went well till Oct. 24th when the temperature rose to 103° F. Nothing was found to account for it, and in about a week it gradually subsided without giving rise to any symptoms. After a few days she got up and came downstairs. On the first day after getting up the lump reappeared. On Nov. 15th, after a hearty supper, she went to bed, and about 4 A.M. I was suddenly summoned on account of her waking up in violent pain. On my arrival I found that the pain was in the right iliac fossa; the temperature was 103·4°. I ordered hot fomentations and a liquid diet, fully expecting I had a case of acute appendicitis to deal with; but instead of the usual constipation the bowels became loose, and on Nov. 18th the pain and tenderness were much less and the temperature had fallen to 100°. Then it was that she told the nurse about the lump, who immediately told me.

On examination there was a tender swelling in the right inguinal region a little below the external ring just at the top of the right labium majus. The swelling was irreducible and no impulse could be obtained, but after manipulation it ached considerably. With the decrease in the pain and tenderness in the right iliac fossa the reverse occurred in the groin. The swelling became red and very tender. This was the condition of affairs on Nov. 21st and the temperature had risen from 99° to 100·4°. The bowels were slightly constipated, but there was no vomiting or collapse indicating strangulation. I advised operation.

On the following morning (Nov. 22nd), although she was menstruating profusely, I cut down, making the usual incision for radical cure of inguinal hernia. The skin had become thickened and œdematous, and after proceeding very carefully I came upon a round mass surrounded by a large quantity of organised lymph. In working round this with my fingers the abscess gave way and discharged a quantity of odourless pus. After some patient manipulating I succeeded in separating the mass from its surrounding adhesions and tracing it up to the external abdominal ring, when I put some traction on; the mass proved to be the ovary and the Fallopian tube with the broad ligament. This I drew down and ligatured with silk, and having cut off the ovary I let the stump slip back. I failed to find any trace of a peritoneal sac. I then proceeded to pass a suture through the external pillar of the ring when a sharp gush of venous hæmorrhage occurred. What was actually pricked I could not tell, but my index finger was in the canal and the point of the needle was pressed against it. This gush stopped on pressure, and I refrained from any further attempts at ring suture. The wound was washed out and united with ten interrupted silkworm-gut sutures, and a small drain was inserted at the lowest point.

No pain was experienced after the operation, but on account of the menstruation the dressing had to be changed the next day and again on the following day. On Nov. 24th the temperature was normal and the tube was taken out and a collodion dressing substituted for the bandage. On Nov. 29th three stitches were removed and on Dec. 2nd the rest were removed, the wound having healed by first intention despite the presence of pus at the operation. On Dec. 7th the patient got up for the first time.

Doubtless during pregnancy the fundus of the uterus rising up drew upon the Fallopian tube and brought the ovary away from the neighbourhood of the internal abdominal ring to a higher position in the pelvis, and then on the occurrence of involution it returned to its old position. The interesting points, clinically, were that the condition simulated appendicitis, making it doubtful whether the acute attack of pain was in reality appendicitis. Again, that as the abdominal symptoms waned the inguinal ones waxed.

Hernia of the ovary is usually an infantile condition and associated with a patent canal of Nuck as in a congenital hernia. Hernia of the ovary coming on in adult life by itself and not as a portion of a pre-existing hernia is a rare

[1] Bernard Roth: Brit. Med. Jour., "The Treatment of Non-Spasmodic Wry Neck," June 14th, 1884.

occurrence; as is also the absence of any sac. The case also goes to show how reticent some women are in confiding all their troubles to the medical attendant; and also how some will attempt to diagnose and take the treatment of their condition into their own hands.

Whittlesey.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF RECURRENT ILEO-CÆCAL INTUSSUSCEPTION; OPERATION; RECOVERY.

BY J. D. FIDDES, M.A., B.SC., M.B., CH.B. ABERD.,
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THE patient, a boy, aged 3 years, was admitted to the Royal Hospital for Sick Children, Aberdeen, at 11 A.M. on Feb. 24th, 1911. He had become acutely ill on the same morning at 5 o'clock. The condition on admission was as follows. Temperature 98° F.; pulse 120. The child looked very ill, and every few minutes brought up a green bilious vomit. There were very evident spasms of severe colicky pains coming on every three minutes, during which he cried and drew up his legs. The bowels had moved the day before admission, when the stool was green and foul-smelling. The child was now passing only clear mucus by the rectum. No blood had been seen. The abdomen was soft and easily palpable. The patient was very quiet between the spasms of colic. A distinct sausage-shaped tumour was discovered at the outer edge of the right rectus just below the liver. No abnormality was felt per rectum.

The mother stated that for the last 18 months the child had been troubled with constipation, and had several acute attacks of colicky pains, but that medical advice had not been sought, except on two of these occasions when the pain had been more severe. Dr. Laura S. Sandeman had been called in, who kindly informed me that the first of these occasions was about ten months previous to the present attack when the case was diagnosed as one of intussusception, a distinct tumour being felt on the right side of the abdomen. There was at that time vomiting, but no blood was passed by the rectum. The medical attendant arranged immediately for the child to go into hospital, but on returning to see him previous to removal found that all the symptoms had disappeared. The attack lasted 24 hours. The second severe attack was about three months before admission, and was somewhat similar to the first. On this occasion the child again had vomiting of a bilious character, but, in addition, had passed blood per rectum. The attack lasted only from three to four hours. There had been two or three minor attacks between these two severe ones.

On admission the child was at once taken into the operating theatre and Mr. H. M. W. Gray opened the abdominal cavity by a paracentral incision, retracting the right rectus muscle outwards. There was found to be a well-marked ileo-cæcal intussusception, about 2 inches in length. The ileum about 8 inches from the ileo-cæcal junction was seen to be bound down by adhesions to the upper and back part of the pelvis for the extent of about 2½ inches. The appendix was partially embedded in these adhesions and was 6 inches long, club-shaped, and showed distinct signs of chronic inflammation. The intussusception was reduced easily. The adhesions joining the ileum to the pelvis were then divided and the raw area left was covered by transplanted omentum which was fixed in position by a few interrupted iodine catgut sutures. The appendix was removed and the abdomen closed. Ether, given by the open method, was administered by Dr. A. Ogston.

The recovery of the patient was uneventful. There was no post-operative vomiting and no special post-operative treatment was adopted. The bowels moved naturally 24 hours after operation, and in 56 hours the child was on ordinary hospital diet and looking exceedingly well. The skin sutures were removed on the fourth day and the boy left hospital on the tenth day after operation.

The interest of the above case lies in the fact of the lack of any very severe symptoms, the comparatively small extent of the intussusception, and of the spontaneous cure of the previous attacks, all of which were, without doubt, due to the presence of the adhesions between the lower part of the ileum and the pelvis, which prevented more than the "slack" of the ileum from entering the intussusception. The child has remained in perfectly normal health since the operation.

I am indebted to Mr. Gray, surgeon to the hospital, for permission to publish this case.

Sheffield.

NOTE ON A TOXIC EFFECT OF ASPIRIN.

BY ALEXANDER BROWN, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

ASPIRIN is frequently taken by persons without medical advice, and a toxic symptom which I believe must be fairly common, though little commented upon, is therefore worth noting.

Several years ago I was called at night to see a man to whom I had that day prescribed tabloids (10 grain doses) of aspirin for rheumatic fibrositis of the shoulder muscles. I found him pacing his bedroom in a state of great alarm and presenting an extraordinary appearance. His face was bloated so as to be hardly recognisable, the lips were immensely swollen, the palpebral fissures were closed owing to œdema of the lids, the tongue was so enlarged that it could not be protruded, and he was unable to articulate. Large dusky wheals of urticaria covered the thorax and arms. The condition had developed suddenly. After some hours, during which I remained with him, giving him ice to suck and sips of cold strong infusion of tea, the condition subsided sufficiently to enable me to see his fauces, which were œdematous and dusky. All medication was stopped, and by next day the patient had recovered. I suspected the aspirin, but he himself ascribed the condition to food poisoning. At a later date, in order to test the accuracy of my opinion, I prescribed one tablet (5 gr.) of aspirin. This was followed by urticaria of the arms which lasted for a day.

A second experience of the kind has occurred in my practice. A young woman gave the following history. She had returned from business on a Saturday afternoon with a headache and had lain down for a few hours, and had then risen and dressed to go to an entertainment, but at the railway station she suddenly felt her lips, jaws, and tongue to enlarge, and she returned home in great alarm. Her mother stated that her face was almost unrecognisable, being covered with a swollen rash. When I saw her, an hour and a half later, there was nothing whatever to see except one or two faint blotches on the arms. I put the question, "Have you been taking any tablets?" "Yes," was the answer; "but only two aspirins for my head." The diagnosis was clear.

It is interesting to think whether such toxic effect is due to impurities in the drug, or whether it may be idiosyncrasy. Probably it is the latter, for though in the first case mentioned above the drug was probably pure, in the latter case there was not the same guarantee with the tablet. Nevertheless, the young woman remembered on three previous occasions to have taken aspirin without such result. And even if the toxic effect be due to impurity it is quite likely that idiosyncrasy must still be called in to explain the occasional poisoning which occurs among the hundreds of people who take the undoubtedly large number of impure specimens of the drug on the market.

Bartholomew-road, N.W.

NOTE ON A CASE OF TORSION OF THE TESTICLE.

BY WILFRID ATTLEE, M.D. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
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THE following incident may prove of interest to the readers of THE LANCET.

A boy at school, aged 16½ years, was kicking a football about, and felt some pain in the right testicle. He took little notice of it, and came in when he had finished his game, had his bath, and ate his tea. The pain continued, however, and increased, and he began to feel faint and

vomited twice. I examined him about three hours after the first symptoms; he was lying on a couch looking white and faint, and evidently in considerable pain. The right side of the scrotum looked larger than the left, and the right testicle was drawn up towards the external ring. Palpation caused pain, but it was easy to make out that the external ring contained no hernia, that the right cord felt thick and hard, and that the right epididymis was in front of the testis, and lying towards the middle line. It seemed evident that the testis was twisted upon its cord, and probable, from the history, that the twist was in the direction of the hands of a clock, if one looked upwards towards the patient's head. Manipulation proved that this deduction was correct, for after turning the testis back through about a right angle the epididymis rotated with a jerk back to its normal position, and the pain immediately disappeared. Ten minutes later the boy had regained his colour and felt perfectly well. He has had no symptoms since.

The boy tells me that he had a blow on the right testicle some year or two ago, and he thinks this testicle has been a little smaller than the other since then. The right testis is certainly a little smaller than the left at the present time, but except for this there is nothing abnormal about it. It would be interesting to know why a testicle should stick in such a position, and whether such a condition would have righted itself if left alone, or gone on to strangulation and possibly to gangrene. At any rate, the apparent rarity of the occurrence seems sufficient justification for recording it.

Eton.

Reviews and Notices of Books.

A Treatise on Diagnostic Methods of Examination. By Professor Dr. HERMANN SAHLI, Director of the Medical Clinic, University of Bern. Edited, with additions, by NATHANIEL BOWDITCH POTTER, M.D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York. Second edition, revised. Authorised translation from the fifth revised and enlarged German edition. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 1229. Price 27*s.* 6*d.* net.

Professor Sahli's book on diagnostic methods is so well known and has attained such an established position as a standard work of reference that any detailed review of its contents, even if such were possible within small limits, is unnecessary. We may therefore confine ourselves to a brief notice of its scope and general character, with mention of some of the new matter included in this, the second English, edition.

The term "diagnostic" methods is taken to comprise any procedure which is calculated to afford information in regard to the diagnosis of a patient's condition. Consequently it includes physical methods, as well as the laboratory and instrumental investigations which are now so various and of such wide application. The descriptions given are always practical and sufficiently detailed to enable the process under consideration to be carried out. Although many alternative methods may be described, Professor Sahli invariably states which, in his opinion, is the most reliable. His book is no mere collection of methods copied from other works or from special monographs, but a carefully digested presentation of his own experience. It is this personal note which gives the special character to the book, and renders it one to which reference may be made for practical assistance in working out the nature of difficult cases. It also contains a number of original observations upon many matters which have not been published elsewhere.

In connexion with the nature of fever Professor Sahli rejects the commonly accepted view that it is due to a disturbance of heat regulation, and suggests that it is essentially a circulatory disturbance by which blood is diverted from the skin to the deeper organs, with the results that heat dissipation is lessened and the febrile rise of temperature brought about. He believes in the existence of "latent fever"—i.e., a febrile disturbance of the circulation without rise of temperature. He also maintains that fever is purposeful, and that the altered circulatory conditions act beneficially by bringing more blood to the damaged viscera. The raised temperature is, in his view, a by-effect, and not necessarily beneficial. Some interesting observations upon dyspnœa are directed to showing that this is strikingly adapted to the particular respiratory obstruction causing it. Some tracings by Hofbauer showing graphically various types of respiration are included.

The newer methods of investigation of the circulatory system are examined at some length, and copious illustrations of the instruments used and of the tracings obtained by them are given. Professor Sahli, however, urges caution in the interpretation of small waves upon the venous tracing, especially in conditions of irregularity. It is remarkable that no mention of electro-cardiographic methods is made in this connexion. In referring with approval to Bäumler's work upon arterio-sclerosis, it is maintained that this condition is often diagnosed upon insufficient grounds and that arterio-sclerotic changes are frequently very unevenly distributed, so that thickening of a superficial artery is not sufficient evidence of general arterio-sclerosis. The chapter on percussion contains a full discussion of the explanation of the percussion note and of its modifications.

The methods of examination of the stomach and intestines are described at great length. In particular the analysis of the gastric contents and the use of various test meals, with the information obtainable from them, are exhaustively dealt with. Professor Sahli's own methods, including the desmoid and glutoid tests, and the butyrometric process for examination of the gastric functions, are fully discussed and defended against the criticisms to which they have been subjected. The sections dealing with the examination of the urine, sputum, and blood are brought fully up to date. Professor Sahli brings forward a suggestion that pernicious anæmia is a consequence of diminished hydrochloric acid in the gastric juice, with a resulting diminution in the absorption of iron. He reviews the main facts of the disease in the light of this theory. He minimises the importance of hæmolytic processes in this disease, but his arguments do not seem to us to carry conviction. The question of exploratory punctures is fully discussed, and the new work upon the cytology and chemistry of the fluids obtained is included. The examination of the nervous system is discussed systematically and is as exhaustive as the other sections of the book. The subject of aphasia is considered in detail, and the recent views of P. Marie are criticised adversely.

The book is copiously illustrated by diagrams, plates, and photographic reproductions. The translation has been well done, and the editor has contributed numerous notes. Many of the illustrations of cases have apparently been added by him, as they are derived from American sources. We can recommend this book as a valuable work of reference.

Lehrbuch der Magen- und Darmkrankheiten mit besonderer Berücksichtigung der Diätetischen und Medikamentösen Therapie. (*Text-book of Diseases of the Stomach and Intestines, with Special Consideration of Dietetic and Medicinal Treatment*) Für praktische Aerzte und Studierende. Bearbeitet von Dr. P. RODARI, Privatdozent an der Universität, Zürich. Zweite völlig umgearbeitete und bedeutend erweiterte Auflage. (Second fully revised and enlarged edition.) Wiesbaden: J. F. Bergmann. 1910. Pp. 521. Price 12 marks, or 12*s.*

THE clinical investigation of diseases of the digestive organs has been enriched by numerous methods of examination which have rendered diagnosis and treatment of these conditions much more rational and exact than was formerly

possible. Dr. Rodari in his introductory chapter complains that these methods are not yet sufficiently applied, either by practitioners or by many hospital teachers. He states that superficial diagnosis depending upon some prominent symptom or sign, such as dyspepsia, constipation, diarrhœa, and dilated stomach, are still much too common, and that practitioners, who would not be satisfied by a superficial diagnosis of heart disease in a case of valvular lesion, are content with equally vague statements in diseases of the digestive organs. Dr. Rodari's book is well adapted to supplying the information necessary to remedy these deficiencies, for it affords an exhaustive consideration of the etiology, pathology, symptoms, signs, and methods of investigation of these diseases, and in addition gives full details both in regard to diet and medicinal treatment.

The section devoted to diseases of the stomach is divided into two parts. The first treats of the general diagnosis of gastric conditions and includes an exhaustive review of questions of diet, drugs, balneotherapy, and physical methods in the treatment of gastric disorders. In the second part, the individual diseases are separately considered. Dr. Rodari gives valuable directions for obtaining a satisfactory history from patients, each symptom being clearly discussed in regard to its value and significance. The various methods of examination and the chemical and other measures devised to investigate the physiological efficiency of the stomach are described in detail. The individual diseases of the stomach and disorders of the gastric functions are exhaustively considered. We may mention the description of gastric ulcer as being an admirable presentation of the subject. The treatment is described in full detail, and the merits of the various diets recommended, notably those of Leube and Lenhartz, are critically discussed. Dr. Rodari is in every case careful to give reasons for his statements, in the form of references to authorities or to experiments made by himself with special reference to the matter under discussion. The subject of nervous gastric affections, or neuroses of the stomach, is also dealt with in an interesting and lucid manner.

The second part of the book deals with diseases of the intestines. This also is divided into two sections. The first is devoted to general considerations, while the second deals categorically with the individual affections of the intestines. In the general part the symptomatology of intestinal diseases is critically reviewed, and the various diets, drugs, and other therapeutic measures are discussed. The purgatives, astringents, and antiseptics are especially considered. The classification of the intestinal affections given by Dr. Rodari is simple and convenient. He describes the various inflammatory conditions of the mucous membrane, including acute and chronic enteritis, membranous colitis, and appendicitis. The next group comprises the ulcerative conditions of the bowel, including duodenal ulcer. New growths are then dealt with. Anomalies of the intestinal muscle, including intestinal atony and atonic constipation, form a separate section. The various forms of intestinal obstruction are classified and described, with their diagnosis and appropriate treatment. The neuroses of the intestinal tract are then considered, and are divided into sensory, motor, and secretory. Affections of the rectum and anus are dealt with in a separate section. The account given of appendicitis is perhaps less exhaustive than the other parts of the book, and the discussion of the treatment, more especially in regard to the choice of cases for surgical treatment, is also less critical than its importance would warrant. Dr. Rodari reserves catarrhal cases for medical treatment, and speaks highly of opium for the purpose. Although he mentions the objection that it is liable to mask the progress of the symptoms, he does not lay so much emphasis upon this point as is customary in this country.

As a useful and authoritative work of reference in regard to diseases of the stomach and intestines we can commend this book to our readers, the more so that the sections on treatment are so full and practical.

Operative Midwifery. By J. MUNRO KERR, M.D., C.M. Glasg., F.R.F.P.S. Glasg., Professor of Midwifery and Diseases of Women, Anderson's College Medical School; Obstetric Physician, Glasgow Maternity Hospital. Second edition, with 299 illustrations in the text. London: Baillière, Tindall, and Cox. 1911. Pp. xxiv.–703. Price 21*s.* net.

IN the second edition of this excellent work Dr. Munro Kerr has found it necessary to make very few alterations. In the section on pubiotomy he expresses himself as more in favour of the operation than he did in the first edition, and now comes to the conclusion that this operation is safer than symphysiotomy, although only slightly so. He does not consider that either of these operations should be performed on a primipara, and in this he disagrees with Whitridge Williams; nor does he think that they are suitable for private practice, conclusions in which he will have the support of the majority of obstetricians. Two new illustrations of the subcutaneous method of performing this operation are given, and it is a pity that they are both inaccurate and do not agree with the text. As the author rightly says, the needle should be introduced between the labium minus and the labium majus, while in the pictures it is shown introduced between the latter and the skin of the thigh.

In the preparation of the patient before performing Cæsarean section it is gratifying to see that the author has abandoned, with rare exceptions, the douching of the vagina, upon which he laid so much stress in the last edition. Supravaginal amputation of the uterus is described in more detail, and a short account is given of the various methods of performing extra-peritoneal Cæsarean section. Dr. Munro Kerr does not believe that this operation will ever give better results in infected cases than the ordinary operation, but he is inclined to think that the uterine cicatrix may be sounder when made in the lower uterine segment than in the active contractile portion of the uterus. With this view we are unable to agree, for we regard the matter as mainly one of care in the suturing of the uterine wall. It will be noticed with interest that the author has returned to the use of silk for stitching up the uterine wall and has given up catgut, and in this we are in entire agreement with his practice.

In discussing the question of performing Cæsarean section for cases of placenta prævia the author adopts a much less antagonistic attitude towards this procedure than he formerly did, and he has himself performed the operation in one case. He suggests that in the case of an old primipara, where the hæmorrhage occurs at full term and before labour has started, and where, to judge by the condition of the parturient canal and the size of the child, delivery may be tedious and difficult, the operation may be justifiably performed. He believes that it may be possible to obtain as low a mortality as from the recognised modes of treatment in such a case. In the operative treatment of rupture of the uterus Dr. Munro Kerr is on the whole in favour of pan-hysterectomy, but thinks that simple stitching of the peritoneum and drainage may be sufficient in some cases. His own mortality from the former operation has been only 40 per cent., while after supravaginal amputation of the uterus he has had a mortality of some 60 per cent.

As was said in our notice of the first edition of this book, it is a work of the greatest possible merit, and we feel sure that

this second edition will meet with just as favourable a reception as did the first. We can heartily recommend it to students and practitioners.

Death: its Causes and Phenomena, with Special Reference to Immortality By HEREWARD CARRINGTON, late Member of the Council of the American Society for Psychical Research; and JOHN R. MEADER ("Graham Hood"), Member of the Society for Psychical Research. London: William Rider and Son, Limited. 1911. Pp. 552. Price 8*s.* 6*d.* net.

THIS book, with its black binding, its golden imprint of death, and a butterfly on its cover, and the representation of a lighted terebratula lamp on its broad back, is divided into three parts: Physiological (pp. 1–234), Historical (pp. 237–291), and Psychological (pp. 295–518). In the first part Brouardel's well-known work dealing with "Death and Sudden Death" is drawn on largely in the chapter on "The Signs of Death." On p. 20 there appears an extraordinary mistake in connexion with Kühne's well-known experiment on the visual purple of the rabbit's eye. Kühne is described as having "removed the eye, exposed the retina, and photographed it." Trance, catalepsy, and suspended animation lead on to premature burial with citation of cases and quotations, some of which may interest the credulous.

A short chapter on Burial, Cremation, and Mummification, and a longer one on "The Causes of Death," lead on to the scientific study of old age. It is stated that practically everyone dies prematurely, and that the margin of cases of natural death is small indeed. Again there are plenty of quotations. A comparison follows of the well-known views of Metchnikoff and those of C. S. Minot on this subject. "The authors having failed," we are next told, "to derive any satisfactory explanation of death from the literature of the subject and from historic research," they evolved a project of their own, which they call "the questionnaire on death." They sent a circular letter to certain persons asking the following question, "What do you consider to be the real nature of death?" and 30 pages are given to the replies and comments. We may quote part of a reply from Dr. A. C. F. Rabagliati. "Natural death is the departure from the body of anthropino-bio-dynamic. ..... The immediate cause of human natural death is nearly always such a choking up of the human house of life by excessive exercise of tropho-dynamic—i.e., polysiterism, kako-siteism and pollaki-siteism and polypotism, that anthropino-bio-dynamic is compelled to leave the body, as it is no longer a fit house for life." Mr. Carrington offers the following theory of natural death: "It is the inability of the life force to raise to the requisite rate of vibration the nervous tissue upon which it acts—its manifestation thus being rendered impossible." Mr. Meader has another theory, which is set forth *in extenso*, and then a chapter is devoted to "The Possible Unification of Our Theories." The whole winds up with a quotation from Stevenson's "Aes Triplex."

Part II. gives an account of theories of immortality, and the reader soon runs up against Spiritualism, or better, Spiritism. "The discarnate soul on entering the future world carries with it the *perisprit* or astral body which it had possessed during the period of its earthly existence," and so he is led on to "Theosophy," a "more mystical philosophy." Then come disquisitions on the philosophical and theological aspects of death, ending with the ordinary arguments for immortality. About one-half of the book is devoted to the psychological aspect, including such subjects as the moment, the hour, the pain of death, the visions of the dying, and "death described from beyond the veil," including clairvoyant descriptions and the process as described by "spirits," with liberal quotations from psychical research societies. The photography and weighing of the soul are next dealt with and illustrated by three photographs. The story of the "Testimony of Science and Psychical Research" includes well-known so-called manifestations, with all of which a public, not so credulous as formerly, is familiar—raps, independent voices, the exploits of the medium Home, and of the notorious Eusapia Palladino, clairvoyance, haunted houses, planchette writing, *et hoc genus omne*. There is no reference to Richet and the photograph he published in *Le Matin*, which elicited some very discomforting and pointed criticism. The authors wind up with the difficulties of intracosmic communication, a bibliography, and some appendices, and conclude that they have furnished "a quantity of material, all evidence of the supernormal and pointing to 'spiritism' as its most intelligent interpretation, which must be looked on as a rational theory, and accepted provisionally as a 'working hypothesis.'" These views will leave a cold world unconvinced.

The Treatment of Neurasthenia by Teaching of Brain Control. By Dr. ROGER VITTOZ. Translated by H. B. BROOKE. London: Longmans, Green, and Co. 1911. Pp. 117. Price 3*s.* 6*d.* net.

THE author of this small volume addresses himself chiefly to those who are actually suffering from neurasthenia and psychasthenia, and in this respect the book differs from the sort of therapeutic treatise which we review in these columns. He has endeavoured to simplify his language for the sake of his audience, but it is questionable whether the result is satisfactory. It is unfortunate, if the book is to be put into the hands of laymen, that it should contain matter so highly controversial as the author's hypothesis—on which, indeed, the rationale of his treatment is based—that "the physician's hand can, when placed on the patient's forehead, give him sufficiently exact indications as to the working of the latter's brain," whatever that may mean. The writer contends that through the skull one can feel a repercussion during mental activity on the part of the subject, which gives a series of pulsations producing the effect of an undulation or of a peculiar vibration. If the subject's mind wanders (though surely it does not therefore cease "working") a check in the vibrations will be felt at once. If the patient decides to will, makes up his mind to use his will, the physician feels the vibrations doubled or tripled. To enable the sufferer to regain lost control over himself and his functions, exercises of concentration are recommended, to be carried out for ten minutes every two hours, the mind being concentrated on the figure 1, or on the symbol of infinity ∞, or on different parts of the body. Then he teaches himself different methods of elimination and deconcentration, and then of concentration on an idea pure and simple. After two or three months, the author says, he should be practically well. In the author's hands the results obtained have, he says, surpassed his hopes and well rewarded his labours. In that case it would seem that he has been somewhat lucky in his subjects.

Principles of Therapeutics. By A. MANQUAT, National Correspondent to the Académie de Médecine. Translated by M. SIMBAD GABRIEL, M D. London and New York: D. Appleton and Co. 1910. Pp. 298. Price 12*s.* 6*d.*

THE author of this work remarks in the preface that there is a general impression that therapeutics is a very imperfect science. He considers that it would be more exact to say that it is an encumbered science, which is not studied with the attention it deserves, and that it is not practised with sufficient precision. He, therefore, attempts to lay down certain principles to guide practitioners in the right direction.

In attempting to define therapeutics he maintains that therapeutic science comprises two elements: (1) a knowledge, as exact as possible, of all the forces that the organism can utilise in its struggle against a morbid state, whether these forces affect the organism itself or the cause of the disease, or produce a result upon both at the same time; and (2) a knowledge of the needs of the suffering organism. He rightly points out, however, that in some instances the needs of the organism are not sufficiently understood; in others the mode of action of the measures opposed to the morbid state is not quite clear. It may also happen that both the essence of the disease and the mode of action of the remedy have not been fully explained, and he instances gout and its specific remedy, colchicum. He argues from this that a complete definition must take into consideration the empirical treatment of disease, acceptable when its efficacy is made certain by a long series of favourable observations.

Taking into account these various factors the author suggests the following definition of therapeutics: The science of the utilisable modifiers of the organism, of morbid causes and of diseases, and the art of applying their properties to the profitable correction of disturbances of health. This definition is certainly comprehensive; the use of the two words *science* and *art* is justifiable, and the extensive knowledge which is required before a satisfactory course of treatment can be laid down is duly indicated.

We have in this work an attempt to show a distinction between therapeutic actions and physiological actions, but the arguments, though interesting, are not convincing. From such chapters as those entitled "Of the Action of Medicines; Doses; the Elements of Therapeutic Individualisation"; "Influence of Environment on Therapeutics"; "Results and Variations of Therapeutic Activity Inherent in Medicines," the reader will grasp the nature of the book. Considerable information can be derived from a perusal of it. It is quite different in character from most works on therapeutics, and hence gives rise to new ideas which are instructive and suggestive.

The Climatic Treatment of Children. By FREDERICK L. WACHENHEIM, M.D., Chief of Clinic, Children's Department, Mount Sinai Hospital Dispensary, New York. London: Rebman, Limited. 1911. Pp. 400. Price 6*s.* 6*d.* net.

IT may well be asked whether the elasticity of the library of pædiatrics has any limits. We are told, however, on the authority of Dr. Frederick L. Wachenheim, that there is a definite lacuna on its shelves for a work on the climatotherapy of early life. For ourselves, after reading this book, we are not convinced of the urgency or expediency of a work on this subject. The hygienic exactions of childhood already strain to the breaking point the endurance of the full-quivered paterfamilias. His cup of bitterness would indeed be full to overflowing if he were compelled by the force of public opinion to consult a specialist before he took off his family of children for the annual "cure."

A long chapter is devoted to the general principles of climatology, and this chapter is the only one that we can honestly commend to the notice of English readers. It certainly does contain a large amount of useful information on the physiological and psychological effects of temperature, humidity, cloudiness, rain, atmospheric pressure, and phototherapy. A good definition and explanation of the pathological condition known as enervation is also given in this chapter. The term "sensible temperature," which was first given to the medical profession by Harrington, is fully explained, and its importance emphasised. On p. 7 the author explains that "the nude body of a healthy adult maintains its normal warmth of 99 degrees most easily at an air temperature of about 80," a sentence which is probably more correct in its general significance than its exact phraseology. Then there is a chapter on the Climatology of Temperate North America; there is one on Health Resorts, another on Constitutional Diseases, a penultimate one on Visceral Disease, and a final one on Scrofulosis and Tuberculosis. There is also a chapter on the Climatic Management of the Normal Child—we presume the normal American child, for we cannot think that the line of treatment recommended in the chapter would be suitable for the hardier and normal English child; at least, we feel sure it would not so appear to the normal English parent. Dr. Wachenheim has a prejudice, or shall we say a scientific objection, to cold air, cold water, and the open window, and the word "harden" is to him apparently anathema. He likes windows to fit, hot steam to warm rooms, and a temperature of about 68° F. to be maintained in the nursery. He devotes many pages to the proof not that the so-called hardening process is unsound in theory or in practice, but that his conception of the term differs from that held by "even cool-headed practitioners who have been carried away by this monstrous fad."

In Dr. Wachenheim's book the whole teaching with respect to the hygienic management of infants and children is utterly opposed to what we believe in and hold most dear in this country. We believe in cold air, cold water, and the open window, and when we are told to keep an infant indoors for the first month of its life for fear of its catching cold, we cannot help feeling that the "Climatic Treatment of Children" had better be kept out of the hands of the specialist.

Die Kinder-Seehospize und die Tuberkulose Bekampfung. (Seaside Hospitals for Children and the Fight against Tuberculosis.) By Dr. HÄBERLIN. Leipzig: Verlag von Dr. Werner Klinkhardt. 1911. Pp. 338. Price 6 marks.

THIS volume contains a large amount of information concerning hospitals for children and convalescent homes situated at the seaside in European countries. An interesting account is given of the history of the subject, due credit being given to English physicians for the part they have played in the establishment of such institutions. Attention is drawn to the writings of Dr. Richard Russell (1700–1771) and of Dr. W. Owen (1750). It is interesting to note that the latter actually published "A Dissertation Concerning the Use of Sea-water in Diseases of the Glands."

A full account is given of the various diseases in which benefit is likely to be obtained by residence and special treatment in seaside resorts—such maladies as anæmia, bronchial catarrh, asthma, various disorders of digestion and of the nervous system. The most important, however, are those conditions included under the term "scrofula." This expression is gradually disappearing from English medical literature, but is still extensively used in other countries. Baginsky defined the term as indicating a peculiar constitutional condition which afforded a favourable nidus for various diseases, especially tuberculosis. Chief amongst such conditions are affections of the glands, and it is generally accepted that the open-air life and pure air which can be obtained by the seaside are particularly favourable to delicate children who exhibit tuberculous glandular enlargements. A good account is afforded by Dr. Häberlin of the general effects of sea air, and examples are given of the excellent results obtained in a large number of cases.

A brief description follows of the various seaside institutions throughout Europe. Amongst English hospitals and convalescent homes are mentioned St. Joseph's Home at Bournemouth, the Royal Sea Bathing Hospital at Margate, and the All Saints' Convalescent Hospital at Eastbourne. Mention is also made of numerous similar establishments in

Italy, France, Germany, Russia, Holland, Austria, Belgium, Denmark, Sweden, Norway, Spain, Portugal, Greece, and Roumania.

Dr. Häberlin has been thorough in the manner in which he has carried out his work, and has collected a valuable amount of knowledge concerning the therapeutic effects of sea air and the localities in which special treatment may be obtained.

Atlas of Microscopic Diagnosis in Gynecology. With preface and explanatory text by Dr. RUDOLF JOLLY. Translated by P. W. SHEDD, M.D., New York. With 52 lithographs in colour and two textual figures. London and New York: Rebman Company. 1911. Pp. 192. Price 25*s*.

THIS atlas consists mainly of 52 coloured lithographs illustrating the chief gynæcological affections which can be shown under the microscope. The illustrations are good and well reproduced. Among the conditions illustrated are the normal mucosa of the uterus and its changes in pregnancy and menstruation, erosions of the cervix, the various forms of endometritis, carcinoma and sarcoma of the uterus and vagina, simple polypi, and two figures of vaginal secretions. As to the importance of diagnosis from the inspection of scrapings of tissue taken from the uterus there can be no question, and the subject is one of increasing value in these days of the extended operation for cancer of the cervix. After a short account of the operation of curettage a description is given of the best methods of imbedding and staining sections.

The plates are accompanied in each case by a short descriptive letter press. Dr. Jolly retains the term endometritis, even for conditions which are not actually of an inflammatory nature, for the reason that the pathology of the process, in his opinion, is not yet fully elucidated, and the plasma cells which have been considered as a criterion of the presence of inflammation are not only sometimes absent in inflamed tissues, but may be found in healthy tissues. He also maintains that the changes in the glands are in some cases so extreme that the primary morbid process must have taken origin in them It would hardly seem that this is any reason for retaining the application of the term endometritis to all kinds of very different processes.

It is possible that the original German text is well written; we regret that we cannot say the same for the translation. The translator has sacrificed style for literalness, and the result is most indifferent; indeed, it is difficult to believe in many places that one is supposed to be reading the English language. Since the main feature of the book, however, is the illustrations this is not of much importance. At the same time it certainly would have made reference to the work more attractive if the translator had succeeded in rendering the German text into something like passable English.

Lehrbuch der Ohrenheilkunde (*Text-book of Otology*). By Dr. VIKTOR URBANTSCHITSCH. Fifth, fully revised, edition. With 156 illustrations in the text. Berlin and Vienna: Urban und Schwarzenberg. 1910. Pp. 621. Price 18 marks.

THIS is the fifth edition of Dr. Urbantschitsch's well-known text-book—a fact which proves that the medical public on the continent knows how to appreciate good work. As a systematic presentation of modern otology the book, indeed, leaves little to be desired. Perhaps the English reader, spoiled by the attractive externals of his medical text-books, especially of those published across the Atlantic, may complain that, outwardly at all events, Dr. Urbantschitsch's work looks commonplace beside the picturesque volumes he is accustomed to. But when he turns to the subject-matter and finds each section handled in a style which is lucid and readable, albeit typically German in its construction, he forgets the absence of surface glitter in the solidity and worth of the matter presented to him.

In his systematic arrangement and descriptions the author is thorough, and in his expressions of opinion he is moderate and liberal. Perhaps a little more decidedness in tone on certain points would not be considered as a drawback coming from a writer of the standing and experience of Urbantschitsch. On the other hand, those who desire to become acquainted with the literature or to ascertain the clinical and experimental research undertaken in any particular branch, will find the fulness of statement and the wealth of reference of the greatest possible value.

Apart from its all-embracing exposition of the labours and opinions of other investigators, the book is further of interest in that it contains a detailed account of the author's method of treating deafness by means of the use of hearing exercises. Critically regarded, we confess that while we admit that these exercises may prove serviceable in arousing the deaf from their mental lethargy and dulness, we do not see how they can ameliorate hardness of hearing directly due to organic lesions in the ear itself. In the treatment of chronic dry catarrh of the middle ear the author speaks well of the action of galvanism, and expresses his regret that this method has fallen into disuse. Doubtless his careful advocacy of it will stimulate other otologists to give it a fresh trial. Acute suppuration of the middle ear is sometimes treated by the Bier hyperæmic method, and the author cites in its favour the opinions of several authorities. But he seems to have overlooked the publication of articles by at least one German writer of good standing, whose experience of the treatment has been decidedly unfortunate.

As has been already hinted, the illustrations cannot be commended. That representing the naso-pharynx and posterior choanæ (Fig. 30), for example, is too inaccurate for a standard work of this kind. The book is furnished with a carefully constructed index, always a welcome appearance in a continental publication.

Ueber den Selbstmord, insbesondere den Schüler-Selbstmord. (*Suicide, especially of School Children.*) Beiträge von Dr. ALFRED ADLER, Professor S FREUD; Dr. FRIEDJUNG, Dr. KARL MONITOR, Dr. REITLER, Dr. SADGER, Dr. STEKEL, Unus multorum. (Diskussionen des Wiener Psychoanalytischen Vereins.) Wiesbaden: J. F. Bergmann. 1911. Pp. 60. Price M.1.35, or 1*s* 6*d*.

THIS is the first of a proposed series of brochures containing certain of the proceedings of the Vienna Psychoanalytical Club. It is concerned with the question of suicide, more particularly among school children, a topic on which varying opinions are expressed, and it forms instructive reading.

If some of the speakers are to be credited, the school benches of to-day are peopled with hypermodernist poets, revolutionary politicians, ultra-human philosophers, and love heroes of all sorts, no doubt still in embryo, but yet the product of modern educational methods and social conditions. To the arduousness of the school *régime* is attributed the revolt of such young folk, and if there have been geniuses, from Klopstock to Nietzsche, who have been content to leave school with the reputation of "Schwachköpfe," there are others who are so morbidly conscious of their own inferiority as to end it by violent means. Due importance is attached to the working of suggestion, a factor also at work in some veritable epidemics of suicide, both recent and remote. The case is quoted of a Viennese youth who was

granted permission to examine a collection of weapons, and utilised it to select the most suitable for ending his life.

Dr. Adler has found that all neurotic patients whom he has examined psycho-analytically, including those with suicidal ideas, possessed a deep consciousness in their youth of some or other form of inferiority, either physical or mental. By way of escape from this sense of inferiority most of such individuals enter on a stormy struggle for compensation of their defects. Hence their life becomes doubled; conscious of their weakness they persevere to exhibit their strength; a state of "psychical hermaphroditismus" ensues, and it is this mental state which often leads to suicide or attempts at suicide. Professor Freud questions whether school should be held responsible for much of the youthful suicide of the day, but discovers a tendency among teachers to forget the immaturity of their charges. Instead, he says, of impressing young scholars with the pitilessness of life, the teachers should try to make school days simply a "Lebensspiel."

LIBRARY TABLE.

The Conquest of Consumption, containing Advice to Sufferers Before, During, and After Sanatorium Treatment, with Practical Suggestions for the Avoidance of Infection, and as to the Conduct of the Campaign against Tuberculosis. By E. W. DIVER, M.D. Durh., M.R.C.S. Eng., L.R.C.P. Lond., Fellow of the Royal Society of Medicine; late Resident Physician, "Belle Vue" Open-air Sanatorium, Shotley Bridge. With 6 illustrations. London: John Bale, Sons, and Danielsson Limited. 1911. Pp. 135. Price 2*s.* 6*d.* net.—This book, with a somewhat *ad captandum* title, aims to give information to sanatorium patients on various points which the author's experience has led him to regard as likely to be useful and interesting to them. It is mainly based on notes taken down by him during conversations with patients in the ordinary course of sanatorium duty. All will agree with the author that "if the war against consumption is to be carried on with success we must utilise *all* the forces at our disposal." The author discusses heredity and resistance in popular terms. In the section on Sanatorium Treatment he insists that the latter counts for much more than merely "fresh air and food." Many patients, he says, who live in healthy surroundings find it necessary to go into a sanatorium after a disappointing trial of home treatment. The advantages of sanatorium treatment he summarises as follows: Structural fitness of the patient's residence; constant medical supervision; avoidance of infection of others or of self-reinfection; rest and exercise apportioned to his varying condition; regular hours and proper food properly prepared and rightly administered; removal from the influence of injudicious friends; skilled observation of his condition helping to avert impending unfavourable changes; due allowance for temperament and disposition; guidance regarding amusements, clothing, and so forth; and immediate treatment of pathological accidents. Some serviceable advice to patients is given, and among other things an ingenious form of outdoor shelter, designed by Mr. H. Norman Marrett, and in use at Merivale Sanatorium, is described, with illustrative photographs. The floor, which is made in four quarters, each 6 feet square, for ease of transportation, consists of planks fixed on joists, which raise it a foot from the ground, thus allowing of a free current of air underneath. It is covered with stout linoleum. The roof, sides, and door are made of canvas stretched on wooden framework. For the roof the canvas, which here is nailed directly on to the framework, is treated with linseed oil, boiled and filtered, so as to render it waterproof without obstructing the passage of light. The sides are more complicated, consisting of canvas shutters so arranged that they can be raised or lowered by cords and pulleys, yet the canvas remains taut, obviating flapping and draughts. Save for purposes of privacy during dressing, it should never be necessary to close more than two sides of the shelter at once, and then only on account of wind or rain. The patient thus gets the maximum of both air and light, while protected against wind and rain. Such a shelter, it is claimed, can be constructed for from £18 to £20. The subjects of rest and exercise, food, temperature, recreation, and the duration of treatment are dealt with in a practical little book.

Congenital Dislocation of the Hip. By J. JACKSON CLARKE, M.B. Lond., F.R.C.S. Eng., Senior Surgeon to the Hampstead and North-West London Hospital, and Surgeon to the Royal National Orthopædic Hospital. London: Baillière, Tindall, and Cox. 1910. Pp. 92. Price 3*s.* 6*d.*—Opinions in this country are still divided as to the best treatment to adopt in dealing with congenital dislocation of the hip, and comparatively few surgeons here practise the bloodless method of Lorenz. One of the chief exponents of the Lorenz method in England is Mr. Jackson Clarke, and he has done well to set forth in this little volume the mode in which he carries out the operation; for an operation it indeed is, although no incision is made. He gives the reader a full account of the pathology of the condition as well as of the mode in which the operation should be performed, and of the important post-operative treatment. The author maintains that nearly 75 per cent. of these cases can be cured if operated on at a suitable age, and he gives notes of a series of 40 consecutive cases. While it cannot yet be determined what position the operation will ultimately assume, it is certain that the results obtained in some cases are extraordinarily good.

The Goulstonian Lectures on the Sensibility of the Alimentary Canal. Delivered at the Royal College of Physicians of London on March 14th, 16th, and 21st, 1911. By ARTHUR F. HERTZ, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician and Physician-in-Charge of the Department for Nervous Diseases, Guy's Hospital. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 83. Price 5*s.* net.—As these lectures were published in our columns in the issues of April 22nd and 29th and May 6th, and were commented on in a leading article on the last-named date, we need only repeat, for the information of those who may not have read them, that "Dr. Hertz's conclusions will be found to be full of interest, presenting as they do many new ideas, and suggesting that some of the views hitherto held as to the cause of many common symptoms are not correct."

Médications Générales. By Dr. C. BOUCHARD and other physicians. Paris: Baillière et Fils. 1911. Pp. 700. Fr. 14.—This volume forms one of the series published under the title of "Bibliothèque de Thérapeutique," the editors of which are Dr. A. Gibert, professor of clinical medicine at the Paris Faculty of Medicine, and Dr. P. Carnot, professor of therapeutics at the same Faculty. Amongst the several subjects considered in this volume are the following:—The Treatment of Certain Infectious Conditions by Sera, Vaccines, and Balneological Measures, by Professor H. Roger; the Treatment of External Parasites, by Dr. Sabouraud; the Treatment of Internal Parasites, by Dr. J. Sabrazès; the Treatment of Poisoning, by Dr. G. Pouchet; the Treatment of "Accidents" due to the Use of X Rays, by Dr. Paul Carnot; and the Treatment of Disorders of Nutrition, by Dr. R. Lépine. It will thus be seen that the range of therapeutical studies is a wide one, and includes subjects not usually found in one volume. Each article is written in a thorough and practical manner, so that as a work of reference this volume will prove of considerable value.

The Birds of the British Islands. By CHARLES STONHAM, C.M.G., F.R.C.S., F.Z.S., with illustrations by LILIAN M. MEDLAND, F.Z.S. London: Grant Richards, Limited. 1911. In 20 Parts. Parts XIX. and XX. Price 7*s.* 6*d.* each.

Part XIX. contains descriptions of the divers, petrels, grebes, shearwaters, and puffins, and with but few of these birds will many of us be acquainted at all closely, while the specimens seen in our islands are very usually immature. The puffin we may have seen in Scotland—notably in the Hebrides—in many places on the Irish coast, and in England off Flamborough Head and on Lundy Island. Of the divers, who like the puffins live by diving for small fry, although two breed in the United Kingdom, only the red-throated diver is at all generally distributed. The great crested grebe we may have seen, though not perhaps with the good fortune of Miss Medland, who draws an excellent picture of the mother taking a nestling out for a swim on her back. It is good hearing that this beautiful and graceful bird is on the increase, after indiscriminate destruction, partly in protection of fish, but partly to minister to female vanity. Mr. Stonham, however, notes that the bird is still in demand for making hats and muffs, and probably, like others who have considered this subject, he believes that appeals against the dictates of fashion have little force. The storm petrel has passed into general literature as a harbinger of trouble, and is therefore familiar to all of us by name; but how many know the origin of the word petrel? Of this bird a life-size picture is given in the characteristic skimming flight with legs down-dropped just above the waves, and from this the name "petrel" is derived through the French word *pétrel*, diminutive of Peter. For, as Mr. Stonham tells us—and here all who have gone a sea voyage will recognise the justice of his description—the petrel is rarely seen on the water, but constantly on the wing a foot or two above the surface and following the undulations, while its dependent legs give it the appearance of paddling. The imaginative sailors named it "Little Peter," because it appeared to be trying to walk on the water.

Part XX. and the closing pages of the preceding volume contain new records of rare species which have been published since this work was begun, and notes on a few new species which have been added during that time to British avifauna. The records, alas, seem sometimes to mean the death of the rarity. The remaining part of this volume contains the scientific and English indices, an admirable glossary, and a very large, if not exhaustive, bibliography. The bibliography, the work of Mr. W. H. Mullens, has not been planned as a reference to the books and papers quoted in "Birds of the British Islands," but is a compilation intended for the use of those studying British ornithology.

With the issue of these two parts the interesting zoological work upon which Mr. Stonham has been so long engaged is completed, and we congratulate him upon the successful termination of his labours. They have been labours of love as all can appreciate who have read the accurate and breezy notes on bird-life, which record his personal observations. In his illustrator he has been most fortunate, as we have on previous occasions pointed out in these columns. Miss Medland's delineations of birds in their haunts have been invariably spirited as well as accurate, and she has triumphed in a remarkable manner over the limitations imposed upon her by the use of only black and white, and by the necessary reduction in scale of many of her pictures. The *format* of the work also justifies Mr. Stonham's warm acknowledgment of the part played in the issue by the publishers, and by Messrs. Brendon and Messrs. Annan, respectively the printers and engravers.

Vocal Science and Art, being Hints on the Production of Musical Tone. The Boy's Voice; Muscular Relaxation; the Art of Deep Breathing; Elocution for Ordination Candidates. By the Rev. CHARLES GIB. With numerous illustrations, together with an Introduction, Notes, and Diagrams by J. F. HALLS DALLY, M.A., M.D., B.C. Cantab., M.R.C.P. Lond., &c. London: William Reeves. 1911. Pp. 118. Price 3*s.* 6*d.*—Mr. Gib starts off with a destructive criticism of the theories of voice-production of Mr. E. C. White. He then passes on to a consideration of the boy's voice, emphasising the importance of deep breathing and muscular relaxation as taught and practised by the Yogis of India, the aim being to cultivate "a condition of suppleness." The muscular exercises recommended by Mr. Gib are detailed in series, their exposition being illustrated by lengthy quotations from most of the classical writings on voice production. There is, indeed, little or nothing new in all this, and the book, small as it is, could have been made even smaller, as well as much more readable, if the quotations had been boiled down. Moreover, although the volume is largely made up of lectures delivered by Mr. Gib, there was surely no necessity to include in it allusions to the applause and votes of thanks which the author's remarks elicited from his audience.

The Life and Letters of Sir John Hall, M.D., K.C.B. By S. M. MITRA. With an Introduction by Rear-Admiral Sir R. M. BLOMFIELD, K.C.M.G. With portraits and illustrations. London: Longmans, Green, and Co. 1911. Pp. 560. Price 16*s.* net.—The subject of this biography, born in 1795, was a distinguished medical officer of the British Army, and formed a connecting link between what may be called ancient and modern times in the history of its Medical Service. He obtained his first appointment as hospital assistant a few days after Waterloo, and was placed on the half-pay list in 1857. During this long period he served in the West Indies, Gibraltar, South Africa, India, and the Crimea; he was principal medical officer in the Kaffir war of 1847, and of the British forces during the Crimean war. Throughout life he appears to have kept a record of his doings and experiences; from these materials and various other sources a connected story has been put together by Mr. Mitra, which affords entertaining reading in many places, and materials for history of more solid value in regard to military medical matters in the campaigns described. Perhaps some of the private letters need not have been reproduced at length in a volume intended for the general reader; but no one can fail to recognise that the subject of the biography was a man of warm feelings, cultivated tastes, of the highest character and ability, and entirely devoted to duty. The history of the Kaffir campaigns of 1847 and 1851 under Sir Harry Smith will be of interest to those who, in one capacity or another, served in the Boer war; but the chief importance of the book centres in the account of medical matters in the Crimea from 1854 to 1857. When the war broke out Dr. Hall was serving in India; he was appointed principal medical officer of the expedition, left Bombay in May, and arrived at Constantinople on June 17th. Obviously he had no opportunity of conferring with headquarter authorities at home, either military or medical, as to the plan of the campaign, its special circumstances, or the needs that would have to be provided for. The medical service of the army was in those days supposed to be chiefly concerned with the care of the wounded, and it was not realised that care for the health of the troops was of practically equal importance with the provision of food from a military point of view. Five chapters of this biography are devoted to a careful history of the campaign, supported by extracts from original documents. This is of permanent value, though

melancholy reading at this time of day. A very fair account is given of the difficulties of the medical department in 1854 and 1855—difficulties such as have recurred since, but which we hope and believe will not happen again. Referring to the magnificent work of Florence Nightingale and her staff, supported enthusiastically by public opinion and unlimited funds, Mr. Mitra observes: "Had the same means and facilities been placed at the disposal of the medical department of the army that were given to the civil establishment attached to it, they would have accomplished as much as, or more than, was carried into effect, at considerably less cost to the public, and with equal efficiency, so far as the real wants of the sick were concerned." Sir John Hall enjoyed much domestic happiness; after his retirement he sojourned on the continent, chiefly in Italy. He died in 1866 at Pisa. Lady Hall, who possessed great attractions and a charming personality, died in London in 1907 at the age of 91. The biography is rather discursive, but the collection and condensation of matter from many different sources make the book not only the record of an interesting and honourable career, but a valuable footnote to history of wider scope and importance. Sir R. M. Blomfield contributes a foreword, introducing Mr. Mitra to the reader; we cordially join in his congratulations to this talented Hindu gentleman "as being the successful chronicler of the career of an Englishman who officially connects Waterloo with the Crimea."

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXXI., Fasc. II. London: J. and A. Churchill. 1911. Price 4*s.* net.—Fasciculus II. of the Transactions of the Ophthalmological Society is above the average in interest and value. Besides cases of congenital ectopia lentis reported by Mr. J. Stroud Hosford, irideremia by Mr. H. B. Grimsdale, a peculiar granuloma of the retina by Dr. Frank G. Thomas and Mr. George Coats, it contains several exceptionally good papers. Particularly noteworthy is Mr. J. Herbert Fisher's paper on the Pituitary Body and Lesions of the Optic Chiasma. Nine cases are described exhaustively with diagrams of the fields of vision and in several cases skiagrams showing erosion of the dorsum sellæ turcicæ. The signs and symptoms of the disease are minutely recorded and are reviewed in the light of Cushing's experimental work on dogs. Particular interest attaches to the encouraging results obtained by treatment with Merck's tabloids of pituitary extract and Armour's extract of the anterior lobe of the pituitary body. Another paper of outstanding merit is that on the Histology of Papillœdema, by Mr. Leslie Paton and Dr. Gordon Holmes. The authors support the now generally accepted view that "choked disc" is an œdema and not a primary inflammatory condition. The fundamental cause is increased intracranial pressure, which is transmitted to the intra-vaginal space. Dr. A. Hill Griffith has added three cases of optic nerve tumour to the literature of this comparatively rare condition.

First-Aid Charts. By EDWARD C. IBOTSON, M.B., B.S. Lond. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, and Kent, Limited. Four charts. Price 6*d.* each, or 1*s.* 6*d.* the set of four.—These first-aid charts are an attempt to reduce by tabular form to easy accessibility the main principles of first-aid treatment in emergencies. They are intended to be hung up to the public view in factories, mines, schools, colleges, nurseries, public institutions, and other similar places. The four charts cover respectively (1) Emergencies, accidents, and poisoning; (2) fractures, dislocations, and sprains; (3) wounds and hæmorrhage; and (4) insensibility or unconsciousness. They would probably be of service for ready reference to one who had already some training in the broad principles of first-aid, and to the student as a means of review.

JOURNALS AND MAGAZINES.

Jahreskurse für Ärztliche Fortbildung. (*Annual Post-graduate Review.*) Munich: Lehmann. Price 16 marks per annum.—The May number of this journal is devoted to Diseases of the Nervous System. Professor Edinger deals with the treatment of some of the common forms of nerve disorder. Insomnia in most of its varieties can be effectively relieved by a proper regulation of diet, baths, and exercise. In other cases hypnosis is of great value, although it is so seldom employed. Lastly, the rôle of drugs in the treatment of sleeplessness is fully considered. Headache is the next subject in this article, and the great importance of correctly ascertaining the cause before proceeding to treatment is insisted upon. In dealing with various functional disorders of the nervous system, the relative importance of a proper treatment of the body by diet and rest, and of the mind by suggestion, in different cases is carefully discussed. Again, in the treatment of neuralgia the point of first and greatest import is the distinction between cases of primary and secondary origin. In dealing with epilepsy, the various theories which relate this disease to metabolic disorders are briefly reviewed, and then a consideration is given to the signs of a localising character which indicate the possibility of surgical treatment. In the case of tabes and other degenerative cord lesions, prolonged rest is regarded as being very important in the early stages. Professor Vogt contributes a short article in which the psychological basis of nerve disorders is considered, while Professor Binswanger follows with a somewhat abstruse discussion of the principles of morbid psychology. In this an endeavour is made to relate the various forms of insanity to disorders of sensation, perception, and the association of ideas. Professor Berger deals with the treatment of organic nerve diseases, the chief subjects touched on being the rôle of salvarsan in cerebral syphilis, the indications for, and results of, surgical treatment of cerebral tumours and abscesses, the value of lumbar puncture in tuberculous meningitis, and the various toxic nerve disorders, such as those caused by morphia and alcohol.—The June number is devoted to the Diseases of Children. Professor Pfaundler discusses the various tendencies to disease or diatheses of childhood. That which used to be termed a scrofulous tendency is now termed an inflammatory diathesis. This is carefully described both in its latent and manifest stages as it affects the skin, mucous membranes, and nervous system. Such various conditions as eczema intertrigo, laryngitis, and pyloric spasm are regarded as being due to the same underlying cause. Next, the status thymo-lymphaticus is treated of, and its relation to cardiac disorder discussed. The third great disease tendency in childhood is termed the "arthritic diathesis." A consideration is given to the relationship existing between these different diathetic conditions to one another, and also between them and the disorders of the nervous system. Dr. Theodor Gött gives an excellent article on the convulsions of childhood. He divides them first into those which are functional and those which are symptomatic, and then deals separately with the convulsions occurring within the first two years and those of later childhood. Infantile tetany is regarded as due to a hyper-excitability of the nervous system, and the relation of this to rickets and other metabolic disorders is considered. There are irregular contractions not only of the voluntary muscles, but also of the visceral musculature, notably of the heart, intestine, and bladder. The symptomatic or organic convulsions of infancy must be very carefully distinguished from those which are merely functional, because the underlying cause can often be remedied if it is recognised in time. The chief causes are tetanus, septic diseases, pneumonia, meningitis, and

birth traumas. In discussing prognosis it is pointed out that less than a third of the children who suffer from "convulsions" ever develop into normal adults. The proper regulation of the diet is considered to be the most important point in the matter of treatment, and as regards drugs, chloral hydrate in 0·5 gramme doses given by the rectum is held to be the most valuable. The convulsions of childhood later than two years of age may be due to tetanus, idiopathic epilepsy, hydrocephalus, cerebral tumour, infantile paralysis, syphilis, or may arise reflexly from disease of the sensory organs, or from disorders of digestion and metabolism. These various forms are all briefly described.

The Yellow Fever Bureau Bulletin. No. 2. June, 1911.—Since the publication of the first number of this new periodical its editor, Sir Rubert Boyce, we regret to state, has died, and Dr. Harald Seidelin, formerly professor of pathology and bacteriology in the Medical School of Merida, Mexico, but now attached to the staff of the Liverpool School of Tropical Medicine, has been appointed to fill the post. The new editor brings to his task not only special scientific knowledge of the subject, but also practical experience of the disease. The first item in the present number of the *Bulletin* is a sympathetic obituary notice of Sir Rubert Boyce, to which is appended a reproduced photograph of the late editor. A series of reports of recent occurrences of yellow fever in West Africa and in the West Indies are then given, after which Dr. Seidelin contributes a very exhaustive original article extending to some 19 pages on the Treatment of Yellow Fever Cases. This is followed by some reviews of lately published books or pamphlets which relate to the disease in one or another of its various aspects. The current *Bulletin*, like its predecessor, concludes with a bibliography. This second number fully maintains the standard set up by the first, and in our opinion it must prove of great interest to all who are concerned in the diagnosis, treatment, or prevention of yellow fever.

Quarterly Journal of Microscopical Science. Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., E. A. MINCHIN, M.A., F.R.S., and GILBERT C. BOURNE, M.A., F.R.S. August, 1911. London: J. and A. Churchill. Price 10*s.* net.—Mr. W. E. Agar, D.Sc., considers the spermatogenesis of Lepidosiren paradoxa from material obtained during an expedition to the swamps of the Paraguayan chaco, undertaken primarily for the purpose. Mr. Geoffrey Smith continues his studies in the experimental analysis of sex, by a consideration of the cause of the fluctuations in growth of the fowl's comb. In this he essays to demonstrate that correspondence of the comb increase with egg-laying is invariable, that these rapid fluctuations are characteristic of hen birds, and that they are due to a fatty infiltration of the central core of the comb taking place just before egg-laying commences. At this time the blood becomes charged with the fatty material conveyed to the ovary for the formation of yelk, the excess of this being deposited in the comb. Mr. C. H. Martin and Miss Muriel Robertson publish some further observations on the cæcal parasites of fowls with some reference to the rectal fauna of other vertebrates. The authors state that in recent years there seems to have been a tendency to regard the life-cycle of parasitic flagellates as a subject on which the most hazardous speculations can be put forward, and these, unfortunately, crystallise only too soon into the well-known protozoon life-cycles of the zoological text-book. Though they do not feel justified in putting forward a complete life-cycle in the case of any one of the forms they describe, they consider themselves right in publishing the results obtained, because (1) their preparations were always made from the wall of the cavity containing the parasite and not simply from the content of the cavity, so that they have obtained a more complete series of division of the active forms than earlier workers, and have also got an interesting series of new stages; and (2) owing to the ease with which it is possible to obtain newly hatched chicks and keep them free from all animal parasites, they have obtained really valuable data as to the course run by new infections of these forms. They have obtained evidence which they believe justifies them in dividing the animal parasites found in the cæca of fowls into the following species:—(1) Chilomastix gallinarum (*sp. nov.*); (2) Trichomonas gallinarum (*sp. nov.*); (3) Trichomonas eberthi (*sp. nov.*); (4) Trichomastix gallinarum (*sp. nov.*). They describe their technique, and discuss each of the four forms named. Mr. Charles L. Boulenger discusses some points in the anatomy and bud-formation of Limnocnida tanganicæ (African fresh-water jelly fish).

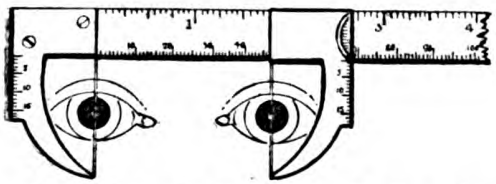
The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. IV., No. 16. July, 1911. Oxford: At the Clarendon Press. Subscription price 25*s.* per annum; single numbers 8*s.* 6*d.* each net.—In this number, under the title Some Points in Relation to the Etiology of Auricular Fibrillation, Dr. C. E. Lea describes his investigations, which lead him to the conclusions that auricular fibrillation can be regarded as a definite clinical entity, which in 56·6 per cent. of cases is preceded by rheumatic or choreic disease, mitral stenosis being the most frequent lesion. In non-rheumatic cases auricular fibrillation is found in 43·4 per cent., the most frequent lesion being cardio- or arterio-sclerosis. The age incidence of mitral valve disease, with or without preceding rheumatism, was 38·2 years; of cardiac sclerosis 53·9 in rheumatic, 56·9 in non-rheumatic cases. Females were more frequently subject to valvular disease, males to cardio- or arterio-sclerosis. Of all cases of auricular fibrillation, 32·8 per cent. occurred in cardio-sclerosis, 31·3 per cent. in mitral stenosis, and 23·8 per cent. in cardiac dilatation. Influenza occurred in 39·3 per cent. of non-rheumatic cases. Electro-cardiagraphic records confirm the polygraphic records in all cases examined. Dr. J. D. Windle, in considering the Relationship of the Heart Beat to Pulsus Alternans, concludes that the observations he details, while they lend some support to the view of Hering that in alternate heart beat a partial systole of the ventricle occurs, also show that in alternating pulse it is not always possible in clinical cases to determine the fact of alternating heart action. Dr. P. N. Panton and Dr. H. L. Tidy, in a paper on the Analysis of the Gastric Contents, deal with the routine examination of test meals in a series of cases, and make an inquiry into the various methods of examining test meals and the meaning of the results obtained. They conclude, among other things, that all the methods commonly in vogue are approximately accurate when the free acidity is either normal or above normal, and inaccurate when it is low. The Prout-Winter method, however, they consider inaccurate in any circumstances. They do not agree that the estimation of so-called "active" hydrochloric acid according to Willcox's method is either accurate or profitable. Phosphates introduce a fallacy common to all the methods they have investigated. They suggest that the phosphates are secreted into the cavity of the stomach when the gastric mucous membrane fails to elaborate free hydrochloric acid from the mixture of phosphates and chlorides brought to it from the blood. They consider Günzberg's reaction and the estimation of total and dimethyl acidity to be as accurate as more elaborate methods, and to supply all the assistance and information which can be reliably obtained from examination of the gastric contents. The Systolic Pressure as

Different Points of the Circulation in the Child and the Adult is compared by Dr. Leonard Findlay, who concludes that during childhood and youth the systolic arterial pressure is fairly uniform at different points of the circulation. In adult life the peripheral systolic pressure is lower than the central, and the difference between them increases with age. Finally, the difference greater than normal between the central and peripheral systolic pressures in cases of hypertension, from disease or experimentally produced, supports the idea that the behaviour of the pressure and its variations depend upon changes in the elasticity of the vessel wall. Dr. Peter F. Holst and Dr. A. H. Monrad-Krohn report two cases as a contribution to the study of the function of the *A.-V.* bundle. Dr. W. Hale White reports five cases of Essential Renal Hæmaturia, which have been followed for much longer periods than almost all other published cases, with the moral that the outlook is good and that the disease does no harm apart from the loss of blood. In a critical review of the Use of Tuberculin in So-called Tuberculous Glands, Dr. George E. Waugh concludes that any estimate of the value of injections of tuberculin in the treatment of enlarged glands must be invalidated by the fact that no proof that the glands were tuberculous can be offered until the glands have been subjected to operation. The most important factor in the treatment of chronic glandular enlargement with a view to the avoidance of extensive operative interference is the complete elimination of all primary foci of infection. The use of the guillotine in the tonsils is one of the most serious causes of failure in the treatment of enlarged glands. Wright's bacillary emulsion has not been proved to be of any value, though it is probably harmless. In enlarged glands which on removal proved to be tuberculous, thickening of the operation scar frequently occurred, but disappeared under a course of injections of tuberculin.

New Inventions.

NEW OPHTHALMIC CALIPERS.

WITH the increasing necessity for the correct centring of spectacles there comes the demand for a rapid and accurate measurement of the ocular base line. It is no longer found sufficient, as in former days, to take a rough measurement of the interpupillary distance. The instrument shown in the accompanying illustration was devised for the purpose of



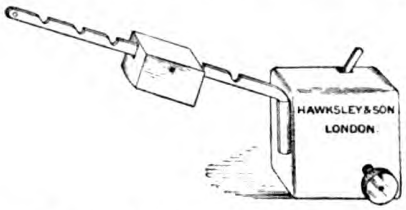
measuring the base line in working with the registering form of diaphragm test, and the new calipers have proved, after a year's work, to give this measurement with the greatest expedition and with an accuracy that meets the stringent conditions of that test for binocular vision. In experimental forms these calipers were exhibited to the Ophthalmological Society in 1909 and 1910; they are now made by Messrs. G. Culver, Limited. The raw material used is steel, and the workmanship is excellent. Briefly the method of usage is as follows. The patient faces a distant light, either a window or lamp, and looks at it with both eyes; the images of the light are seen upon the corneæ and mark the visual axes. The surgeon faces the patient at arm's length, places the rule upon the patient's brows, and sights the fixed wire over the image on the patient's right eye. Then the other wire is slid over the image on the left cornea and carefully sighted. The surgeon sights the patient's right eye with his own left eye and *vice versâ*. In measuring the base line for near vision the procedure is the same, but the light is put over the surgeon's head at the requisite distance and the patient looks at it. The vertical scales on the jaws are for the purpose of measuring the vertical displacement of lenses for the correction of hyperphoria. The trial lenses are tilted until the defect as measured with the scale test card in the diaphragm test is corrected, the rule is held horizontally across the patient's brows, and the depression of the lens of one side as compared with the other read off.

N. BISHOP HARMAN, F.R.C.S. Eng.

Harley-street, W.

A BALANCE-WEIGHT FOR THE CLINICAL POLYGRAPH.

PROBABLY not a few beginners with the clinical polygraph have found among their other troubles a difficulty in keeping the spring of the sphygmograph in contact with the radial artery when the "arm" carrying the tambour for collecting the pulsations from the neck is placed *in situ*. The weight of this is apt, more especially in the case of slender wrists, to tilt the sphygmograph outwards, and thus to remove the instrument from the artery and to cause the loss of the radial tracing. If, in order to avoid such a result, the wrist-strap of the sphygmograph is drawn more tightly, the consequences are unpleasant for the patient, and the undue pressure thus occasioned may, once again, diminish or suppress the arterial excursion. After various attempts to get rid of this annoyance I have at last hit upon a simple mechanical contrivance which may perhaps



be of service to other workers. The principle of it is the provision of a weight in opposition to the force or leverage exercised by the "neck tambour" and by the "arm" which carries this tambour, and this in such a fashion as to allow graduation of the balancing or resisting force without altering the amount of pressure exerted on the radial artery by the spring and pad of the sphygmograph. To secure these ends a socket is fixed on that side of the box containing the clockwork of the sphygmograph opposite to the one carrying the tambour "arm," and into this socket is fitted an angled rod carrying a moveable weight and notched so as to allow the weight to be temporarily adjusted at different points, the arrangement being, in short, similar to a steelyard. If after the sphygmograph has been attached to the wrist the tambour arm and the balance weight are placed in position the whole apparatus remains perfectly steady, and thus the inscription of the two tracings is much facilitated. The balance-weight is readily added to the present pattern of Dr. Mackenzie's clinical polygraph, and is not without value, at least in occasional instances, in the use of the sphygmograph pure and simple. It has been made for me by Hawksley and Son, 357, Oxford-street, W.

Harley-street, W. C. O. HAWTHORNE, M.D. Glasg.

INTERNATIONAL MONUMENT TO CESARE LOMBROSO.—The central committee in Rome charged with the carrying out of this undertaking has just received the sum of £62 from the Scottish committee organised with the same object under the presidency of Lord Guthrie, one of the judges of the Court of Session. The central committee also announces contributions to the movement from continental committees whose interest in the founder of the science of "criminal anthropology" seems proportioned to the recrudescence of "hooliganism," represented abroad by the "apaches" of France, the "teppisti" of Italy, and the "Mano Nera" of the United States.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 9, 1911.

Inebriety and Alcoholism.

LEGISLATIVE enactments, like individual enterprises, are apt occasionally to produce effects so different in their nature and influence from what their authors had promised and expected that it may be a matter of difficulty to recognise the original intention in the final result. The Inebriates Act of 1898 is a very striking instance of this sort of miscalculation. The object of the Act, as was generally understood when it was placed on the statute book, was to give effect to the view, which had been strongly voiced by medical opinion, that the pathological factor in inebriety ought to be considered in the treatment of inebriate offenders. Instead of regarding intemperance merely as a vice, which when it led to antisocial acts was if anything an aggravation of their iniquity and as such entailed a proportionately heavier penalty, the law now set itself to recognise that inebriety might be due to a condition of disease, the existence of which in a delinquent should take him out of the category of ordinary criminals and should bring him under curative treatment rather than penal discipline. Unfortunately, however, in framing the measure which was to embody this very sound view the legislature thought fit to adopt a plan which appears to have been inspired by totally different and quite incompatible principles. Though proceeding, as we have seen, from the assumption that the condition to be dealt with was one of disease, it rigorously reserved to the administrators of the law not only the prescription of the treatment but also the making of the diagnosis. So strictly, indeed, has this singular system been adhered to that, though a medical certificate is required as part of the machinery for committal to an inebriate reformatory, the official form on which it has to be furnished omits all reference to the patient's inebriety; the certifying physician is invited to express an opinion as to the intemperance of the patient's grandmother, but the intemperance of the patient does not concern him and is wholly a matter for the superior diagnostic skill of the police. It was hardly to be anticipated that the results attained by these very novel methods would be of a kind to encourage further experiments on similar lines. And that they are most distinctly not of such a kind is made abundantly clear in the very interesting but rather pessimistic report of Dr. R. W. BRANTHWAITE on the working of the Inebriates Acts (1879 to 1900) during the year 1909, which has just been published.

Dr. BRANTHWAITE, whose annual reports are usually distinguished by a freshness of idea and a careful style not too common in blue-books, has devoted the greater part of his latest volume to a general disquisition on the nature of inebriety and the characteristics of the inebriate. In this connexion, of course, it has to be remembered that these terms are used in a somewhat special sense determined by the very peculiar legislation which has provided the material for Dr. BRANTHWAITE'S words. Thus, what we are to understand by an inebriate in this report is simply an inmate of an inebriate reformatory, and inebriety in the same way can hardly be defined more exactly than as a liability to become such an inmate. It will be seen from this that Dr. BRANTHWAITE'S description of the condition in question and of its victims suffers under the disadvantage that he has had to seek out biological and psychological characters in a category of individuals defined by a purely legal criterion, and a very rough-and-ready one at that. His task, in fact, is somewhat like that of a naturalist who should be called on to furnish a scientific description of the horse, the horse being first defined inclusively and exclusively as any animal found in a stable. It is necessary to point this out, because Dr. BRANTHWAITE does not appear to have indicated it with quite sufficient clearness, and the unwary reader might easily fall into the error of supposing that the report purported to give an account of alcoholism and alcoholic subjects in the medical sense, and not simply a description of the sort of individuals who get committed to inebriate reformatories under the existing law. Such a misapprehension of its real purport would be the more regrettable because it would interfere with the due appreciation of the lesson which this valuable report can teach regarding the defects and limitations of the Inebriates Act of 1898. For it may be safely affirmed that the fact most clearly brought out by Dr. BRANTHWAITE'S inquiry—and the fact, we may add, of most practical importance—is the complete failure of that Act to touch even the fringe of the problem of chronic alcoholism. The evidences of this are manifold. In the first place, we have the fact that of the total number of "inebriates" committed to reformatories during the last ten years—3309 in all—only 542, or 16 per cent., were men, although, as is well known, the incidence of chronic alcoholism, as measured, for instance, by the mortality from delirium tremens and other manifestations of chronic intoxication, is far higher in men than in women. Again, we observe that in only 9 per cent. of the reformatory patients is even a probable history of delirium tremens forthcoming, and this despite the inclusion of several doubtful cases. Further, we learn that it is rare to find any evidence of permanent tissue change resulting from alcoholic excess in these individuals; and, again, that they display a "conspicuous absence of disease of the intestinal tract, disease of the kidneys, and gout."

These latter facts lead Dr. BRANTHWAITE to express some doubt as to the soundness of current medical teaching which attributes many organic and functional disorders to the action of alcohol taken in excess, but unless we are to adopt the same attitude of scepticism with regard to the general belief in the alcoholic origin of

delirium tremens, it seems more natural to suppose that the reason why the inmates of reformatories are relatively free from such disorders and have so rarely suffered from delirium tremens is simply that although they are inmates of reformatories they are not chronic alcoholics. And that this is the correct interpretation is placed beyond doubt by a fact to which Dr. BRANTHWAITE has called attention in previous reports and which he again emphasises now—namely, that some 65 per cent. of these so-called inebriates are of obviously defective mental capacity, and the remaining 35 per cent. are to be described as normal, "not because defect is absent, but because it is less marked." We are dealing, in short, in these cases with individuals who drink—when they do drink—because they are diseased, and not with individuals who are diseased because they drink. Cases of the latter sort—cases, that is to say, of chronic alcoholism—do not find their way to inebriate reformatories; and inasmuch as these are the cases which in their early stage are curable, and as, moreover, they are the source of the major part of alcoholic crime, the failure to reach them is the real origin of most of the adverse criticism to which the Inebriates Act has been subjected by recent observers.

It might do much to diminish the prejudice against reformatories for inebriates, which clearly exists, and accounts for the condition of things revealed in Dr. BRANTHWAITE'S report, if we adopted a more precise phraseology and ceased to use such terms as inebriety and alcoholism as applying indifferently, on the one hand, to cases of chronic poisoning in relatively normal individuals, drinking under the influence of environmental and industrial conditions, and, on the other hand, to cases of congenital mental deficiency in which a proneness to take alcohol and an intolerance of its action are indications of a general cerebral fault. Certainly the recognition of a distinction between these classes would clarify our ideas as to the treatment of each one of them. The denomination of "alcoholic" might with advantage be restricted to the former, and that of "inebriate" to the latter category—if, indeed, there is any good reason for differentiating in the mass of the feeble-minded a special group under this distinctive heading. Inasmuch, however, as these so-called inebriates do not seem to differ in any important characteristics from the rest of the mentally defective, and as it is not suggested that they require, by reason of their supposed inebriety, any different system of treatment and discipline, the need for such a differentiation is not apparent. It is, in fact, more likely that by introducing artificial divisions of this sort we should only promote the confusion of ideas and multiply the practical difficulties which stand in the way of an effective solution of the problem of the feeble-minded. For the moment, at all events, the most important conclusion to be drawn from Dr. BRANTHWAITE'S interesting review of his official work is that we are still as far as we were before 1898 from any satisfactory system of dealing with curable cases of alcoholism. Such cases, in which institutional treatment of a sufficiently continuous character might prevent the degradation of a useful worker into a burden on society and a danger to its security, are not, it seems, amenable to the Inebriates Act.

The Nutritive Value of Bread.

THE report recently presented to the Local Government Board by Dr. J. M. HAMILL on the nutritive value of bread made from different varieties of wheat flour is a very careful review of all the work that has been done upon the subject from earlier times down to the present date. In spite, however, of this admirable effort to collect evidence on the controversial matters raised in the so-called "standard bread" movement, there still remain, in Dr. HAMILL'S own words, "numerous points of uncertainty" which require settlement, while he further observes that "any inferences which may now be drawn from observed facts are necessarily liable to require considerable modification as knowledge of the physiology and chemistry of nutrition advances." This is a thoroughly wise reservation. Nevertheless, Dr. HAMILL has elucidated many of the questions at issue, and the unprejudiced and painstaking way in which he has collected the materials in his report makes future work easier. His observations have the merit of logic and good sense. Much analytical work done at the laboratory of the Local Government Board by Dr. G. W. MONIER-WILLIAMS adds value to the report.

The differences in nature and in nutritive value between breads made from varying classes of flour are not of much importance to the average adult with whom bread is only one out of many varied constituents of the dietary. A diet which consists principally of bread, from whatever grade of flour it may be made, is not in accordance with the human needs. But in those unfortunate cases in which practically bread, and bread alone, provides the daily sustenance, there would clearly be an advantage in the use of bread made from flour of the "entire" wheat class, since such flour secures a somewhat larger quantity of mineral matter and of suitably combined phosphorus and other substances, as yet unknown, which may prove to be factors of importance in the processes of nutrition. It is true, however, that bread is our chief source of starchy food, and even the person who is free to choose a mixed dietary eats it as a necessary accompaniment to, or vehicle for, the proteins and fats which make up his meal. But whether we are considering those with whom bread is the principal food, or only those to whose meals bread is a valuable accessory, there is a psychological aspect which deserves more attention than it has received. What better meal is there, or what meal that responds more closely to the physiological requirements of the body than bread, butter, and cheese? And how greatly is its enjoyment added to by bread with the unmistakeable taste that we call "nutty"? There is a complete harmony existing between the flavour of good cheese and the flavour of good wheaten bread. But the bread-and-cheese meal, so palatable when the constituents have individual and irreproachable characters, while it becomes nasty if the cheese be nasty, is at once uninteresting and unappetising should the bread be conspicuously without flavour. The true bread flavour makes all the difference between our enjoying and not enjoying our meal, and, as is well known, when the enjoyment of food is eliminated real food value is greatly discounted. The simple and scientific meal of bread, butter, and cheese can be completely spoilt by indifferent bread, even though

the other ingredients are satisfactory. It follows that, regarding bread as an integral part of a dietary, it should still have appetising qualities.

The report contains reference to physiological experiments bearing upon the influence on nutrition of certain constituents of "standard" flour which are absent in white flour. Experiments on pigeons and rats are quoted showing that both thrive better when fed upon standard flour than upon white flour. In the case of the pigeons the birds fed only upon white bread lost weight and suffered from peripheral neuritis, though the addition of yeast to the diet was sufficient to restore them to a healthy condition. We are not prepared with an explanation of this fact. In this connnexion Dr. HAMILL refers, as was inevitable, to the work which has been done on the etiology of beri-beri. A diet consisting of rice from which the skin or cuticle has been removed may give rise to beri-beri, a condition which manifests itself by polyneuritis and other symptoms. It has been shown that polyneuritis analogous to that which occurs in beri-beri can be produced by rice which has been deprived of its cuticle by milling. Moreover, if the "offal" which has been removed from rice, and which amounts to 10 per cent. of the grain, be returned to the rice no polyneuritis occurs. SCHAUMANN concludes that a deficiency of certain organic phosphorus compounds in the grain deprived of its skin has profoundly modified metabolism. Considerations of this kind show the necessity for further work on the subject of the nutritive value of bread, and we may be sure that it will soon be done. The value of Dr. HAMILL'S report lies in the fact that he has drawn attention to a number of important but undeveloped chemico-physiological questions in regard to our commonest and most familiar article of food. The time and energy which he has devoted to his task have been fruitfully spent. He has done much towards laying bare what are the actual facts of the case, and has furnished arguments of the most urgent kind for further research.

The Improvements in the Naval Medical Service.

IN the Students' Number of THE LANCET, published on August 26th, under the heading of the Naval Medical Service, we were able to indicate a certain number of changes in the organisation of the Service which were immediately to take place. These changes were announced in detail last week in a Circular Letter issued by the Admiralty under the nominal date of August 11th. The net result of the new regulations for the Service will be, we think, more satisfactory to those belonging to the Service than could be gleaned from the announcement in the *Gazette* of August 18th, and the recruiting of officers for the Service should therefore be easier. For the pay in every grade has been improved, while the particular care that is being paid to post-graduate instruction will ensure for the Service such good clinical and scientific instruction that any members of it, who may choose to avail themselves of the opportunities of leaving the Service for civilian practice, will find themselves perfectly well equipped in many directions. This is particularly the case as for the future the second post-graduate course, taken after 14 years' service, will in some degree permit the study of special subjects at the officer's own choice. The first part of the Circular Letter enumerates the alterations in pay and allowances of the Service which have already been published in THE LANCET. The salaries of the Medical Department of the Admiralty are advanced, so that the emoluments of the Medical Director-General, the Deputy Director-General, and the Assistants are all slightly raised. The increase of pay granted in any particular rank, however, is not of so much importance as the more considerable increase of pay which attends each successive step upwards towards and in the more important appointments. This seems to us a reasonable recognition of the fact that the more experienced an officer is the more highly he should be paid. The Director-General can now reward officers for good work as he never could before, and junior officers have far better prospects than their predecessors had, and far more incentive to keep their knowledge up to a high standard.

The two most important alterations effected in the Service by the new regulations are undoubtedly the establishment of a naval medical school for the training and post-graduate instruction of the officers, and the recognition of the medical officer of the senior flagship of a fleet as the Principal Medical Officer of that fleet. The first of these alterations was well known to be in contemplation, and the second is one for the justice of which there has been much contention in our columns. As was expected, the new naval medical school will be established at the Royal Naval College at Greenwich in close proximity to the Dreadnought Seamen's Hospital and the London School of Tropical Medicine, and in a position, as the Circular Letter says, to carry out its educational and scientific work in close connexion with those establishments. When it becomes one of the medical schools of London it will be in touch with all the schools attached to the metropolitan hospitals and with the Army Medical School at Millbank, while there are already in existence at Greenwich many of the laboratories that will be required for the new work. Additional laboratories for medical research are to be provided in the college buildings and furnished with the necessary equipment and scientific apparatus. The work now done at Haslar will not be discontinued, although a proportion of that work and the appliances in connexion with it will necessarily be transferred to Greenwich. At the Naval Medical School at Greenwich one Fleet-Surgeon with a special allowance of £150 a year will be appointed as Professor of Bacteriology and Clinical Pathology, and another Fleet-Surgeon, with the same special allowance, will be appointed as Professor of Hygiene. The latter officer will reside in the college and be in charge of the studies of the medical officers undergoing their course at Greenwich. A medical officer will also be retained at Haslar for the instruction of Acting Surgeons, and he, too, will receive, as he does at present, an allowance of £150 per annum for this duty. The new school at Greenwich will be utilised as soon as it is open for the instruction of Acting Surgeons immediately after their entrance to the Service. The course of instruction of these officers being now lengthened from

four to six months, the first two months of the course will be passed at Greenwich, the period being devoted to the study of tropical medicine, bacteriology, clinical pathology, hygiene, and skiagraphy; the remaining four months will be passed at Haslar, as at present. It is unnecessary to point out to our readers how valuable a school of instruction and research in the vicinity of London for the Naval Medical Service must prove to be. We hope that its institution and the improved post-graduate courses will increase the efficiency of the Service, while the better pay should attract recruits.

The recognition of the medical officer of the senior flagship of a fleet as the Principal Medical Officer of that fleet is made in the following terms:—

He will be appointed on the staff of the Commander-in-Chief and wear an aiguillette. He will act as the Commander-in-Chief's principal adviser on all medical and sanitary matters connected with the Fleet, and it will be his province to report to the Admiralty periodically upon the arrangements for the treatment of the sick, the sanitary conditions, and the state of the medical appliances in the various ships; also to supervise and report upon the arrangements for the treatment and transport of wounded, the instruction given in first aid, and other matters as he may be directed. He will have direct access to the Commander-in-Chief, and be in a position to propose for his consideration any measures likely to conduce to the efficiency of the medical organisation of the Fleet, and he will be directly responsible to the Commander-in-Chief for keeping him informed on these matters generally.

This is not only an acknowledgment of the responsible and dignified position held by the officer who is to be regarded as the Principal Medical Officer of the Fleet; it is a direct compliment to the official and scientific standing of medicine, and an alteration in the regulations which must materially improve the health and medical treatment of the seamen of the fleets. As such we welcome the reform warmly.

Annotations.

"Ne quid nimis."

THE HOUSING OF HOMELESS WOMEN.

THE National Association of Women's Lodging Houses, which was instituted on Feb. 24th, 1909, and has its headquarters at 4, Tavistock-square, London, has recently issued the report[1] of the proceedings of its Third National Conference. The object of the association is to link together societies and individuals interested in shelters for women and girls, to disseminate information and promote legislation on the subject, and to institute local committees. It was announced that the deputation, instructed by resolution of the preceding conference to wait on the Housing Committee of the London County Council, presented to that body on Feb. 15th of this year a statement on the need for providing proper accommodation for women, and suggesting the provision of houses, each to accommodate about 100 women, in the following selected areas: Tabard-street or Newington, Drury-lane, King's Cross, Hoxton, Notting Dale, and Pimlico or Vauxhall. The deputation was well received, and a subcommittee of the London County Council was formed to inquire into the whole question of provision of suitable accommodation for women in London. The Congress was participated in by the Associated Societies for the Protection of Women and Girls, the Federation of Working Girls' Clubs, the Mansion House Council on Health and Housing, the National Council of Public Morals, the National Housing and Town Planning Council, the National Union of Women Workers, the National Vigilance Association, the Travellers' Aid Society, the Women's Industrial Council, and the Young Women's Christian Association. The Lord Mayor having opened the Congress, the Duchess of Marlborough took the chair and delivered a thoughtful presidential address, in which she met an objection often raised—that lodging houses for women would tend to destroy home life—by pointing out that the woman worker, for whose needs provision was sought, was already actually or practically homeless. "Those who speak so eloquently," she said, "against what they term the breaking-up of the home, have perhaps not always seen the home they profess the provision of decent lodgings for girls would destroy." A paper on the Need for Women's Lodging Houses, by Mrs. Mary Higgs (read, in the unavoidable absence of the author through illness, by Miss Taylor), pointed out that more women than girls seem to feel the need of such provision, and endorsed very strongly a suggestion by Miss Alston that lists should be compiled of safe lodging homes, with information as to whether they are restricted to a certain class or age, or are open for women of all ages, or will receive girls in urgent need of shelter. Mrs. Higgs is optimistically convinced that through the provision of such accommodation the problems of womanhood, the sweated worker, the deserted wife, the widow, the feeble-minded, and the inebriate will one by one be met. The point to be aimed at, according to Dr. J. F. J. Sykes, medical officer of health of St. Pancras, is proper provision for privacy and modesty, with homely supervision, but without over-regulation—a point in which we find ourselves in hearty accord with him. A brief summary of the powers of local authorities to provide municipal dwellings for women was given by Alderman W. Thompson, in which he showed that local authorities may acquire through the Local Government Board not only land, but also money to enable them to erect lodging houses or hostels, flats or cottages, to supply them with the necessary fittings, and to convert existing buildings into lodging houses. Mrs. Bramwell Booth, however, was antagonistic to the Government or municipal institutions for single women, being convinced that they constitute a real menace to the home, and she pleaded for increased opportunity and greater support for private enterprise. She described what one private hostel for women, established and maintained by the Salvation Army, had accomplished, and argued that to offer human beings provision for their physical and temporal need alone was to treat them no better than horses were treated. Mrs. Hopkinson, discussing the housing of educated girls and women earning their living in London, pointed to the results attained by Brabazon House, Limited, as showing that financial as well as other success is possible under the initial conditions of care in construction and expenditure, a capable architect, and a well-chosen small board of directors. Interesting papers were also read by Mrs. Charles Morrison, Miss Margaret Ashton, M.A., and Mrs. MacKinnon. That there is need of provision for homeless women and girls is hardly likely to be disputed; but, as in regard to other crying needs arising out of our present social system, considerable statesmanship is essential if the need is to be satisfactorily dealt with without entailing other, and, perhaps, equally serious, evils.

[1] Report of the Proceedings of the National Conference on Lodging-house Accommodation for Women, held in Guildhall, London, on Wednesday, May 17th, 1911, under the Presidency of the Right Honourable the Lord Mayor and Her Grace the Duchess of Marlborough. London: P. S. King and Co. 1911. Pp. 64. Price 6*d*. net; post free, 7*d*.

UNIVERSITY OF ST. ANDREWS: ITS QUINCENTENARY.

CENTENARIES, a laudable innovation in the nineteenth century, are in danger of becoming an "institution" in the twentieth. Certainly they seem, oftener than not, to be celebrated on very slight provocation. Scotland has of late years made herself conspicuous by the number of these commemorative functions, of which, however, the more justifiable have been those of her seats of learning. In 1884 she celebrated the tercentenary of her post-Reformation University at Edinburgh; in 1901 the "ninth jubilee" of Edinburgh's pre-Reformation sister at Glasgow; in 1908 the quater-centenary of her seat of learning, also pre-Reformation, at Aberdeen; and now she is commemorating the 500th birthday of the eldest of the four, her "Mater Studiorum" at St. Andrews, founded, like the two last-named, by Papal bull. Ungrateful indeed would she be if she showed herself insensible to the obligations under which those foundations have laid her, owing to them as she does the opportunities and the discipline which have enabled her sons to compete in the "struggle for existence" with the more highly favoured of their contemporaries; compete, moreover, not unsuccessfully, while receiving in return a refinement and a distinction not to be gained in the somewhat rugged conditions into which they were born. Poverty, so far from being the "curse" it is considered to be, is, to a really masculine people, a distinct blessing, fraught with incentives to work, to self-reliance, to honourable ambition. "With the bayonet of necessity at her back," as one of her typical sons expressed it, Scotland has faced difficulties and stormed positions from which, without such *vis a tergo*, she would have shrunk, and though many have fallen in the struggle, the survivors have been numerous enough to encourage relays of recruits, pressing forward under the rubric—

"Nil mortalibus arduum est."

Just four centuries ago, her ecclesiastics and her *noblesse*, the two dominant forces in her kingdom, were so evenly balanced that neither could afford to give a point to the other, while the Crown, as *tertius gaudens*, played them off against each other. On Sept. 9th, 1513, she sustained, at the hands of England, one of her most disastrous defeats on Flodden Field, her king and wellnigh all her nobility among the slain. What happened? The Church, relieved of the check imposed on her by the aristocracy, plunged into excesses which so alienated the people that when the Lutheran wave swept over Britain it found Scotland prepared to meet it more than half-way. A clean sweep was made of the Papal authority and the Papal religion. The people, left to themselves—the *noblesse* being represented by minors, when not wiped out—were thrown back on their own resources, and through their leader, John Knox, greater as a statesman than as an ecclesiastic, secured this advantage, to wit, that wherever there was a parish church there must be a parish school. From this institution Scotsmen are prone to date their rise in the world, and not without reason, preparing the humblest of their sons for the professions at the essentially democratic seats of learning which the national poverty could provide, and thus tapping a social stratum which, under more favourable conditions, would have lain inert. Poverty again, before the union with England in 1707, sent the professionally-minded Scot to the Continental schools, particularly those of Holland, and prepared them for the practice of the most cosmopolitan of liberal callings—that of medicine. An impulse was thus given to their study of the healing art and its preparatory "institutes" which made their native schools, particularly that of Edinburgh, the resort, even of Englishmen, for the continental discipline and methods not to be had at home—a fact which explains the prosperity of those schools even from a financial point of view, till even St. Andrews, remote from opportunity for clinical observation and research, used her character of "University" to grant degrees in medicine to outsiders—a step in contrast to her otherwise unmercenary record. What happened? At first the Royal Commission which recognised this "departure" limited to the number of ten in any one year the duly qualified practitioners to whom the St. Andrews degree might be given, at the same time supplementing the local professoriate with examiners from other schools. This restriction was *motivé* as a check on the multiplication of graduates, not connected with St. Andrews, but drawn mainly from England and Ireland, a multiplication which raised the University capital from £2278 in 1834 to £15,300 in 1868. In 1862 alone as many as 604 received the *summi in medicinâ honores!* This abuse called loudly for reform, and the Commissioners of 1889 ordained that the University could grant no degrees in medicine except to her own *alumni*. From this enactment dates the enormous development of the medical school at Dundee, now almost continuous with St. Andrews by the Tay bridge—another proof of Scottish power to bow to circumstances and rise to new ideals. This development will take rank with any of the more creditable episodes in the history of St. Andrews and reveals a spirit and an initiative of the best augury for her future.

AN EXPOSURE OF CONTRACT PRACTICE.

IN the *National Review* for August there appeared an interesting criticism of the National Insurance Bill from the pen of Mr. Adolphe Smith, who is well able to speak with authority on the evils of the contract system of medical practice, for it is an open secret that he carried out the first-hand investigations whose results were printed in THE LANCET and republished under the title of "The Battle of the Clubs." Mr. Smith not only knows his subject but he has also the gift of apt and lucid exposition. He feels very strongly that contract practice, which he describes as "the tallyman system applied to professional services," is inherently bad, that friendly society control of medical practitioners has been degrading, and that a national scheme founded on the past charity of the medical profession must inevitably break down. All this he sets forth in telling phrases which no educated layman can fail to grasp. His historical review of the situation is particularly impressive. He traces back the contract system to "the great wave of humanitarian feeling which swept Europe in the forties," and shows how the penny-a-week method of payment, which was acquiesced in at first by medical men out of charity as a means of relieving immediate local distress, steadily developed and hardened until the charitable aspect of the matter became forgotten and the prosperous artisan club member came to believe that this sum was adequate payment for professional services. The author aims directly at the public ear, and he puts his case with so much force and point that we hope his article will be very widely read, though it was written before the intention of the Government was known not to vest the distribution of medical benefits in the friendly societies. Mr. Smith contends with great justice that the contract system must be even more harmful to the patients than to their medical attendants. It is a pity, he says, that there are some practitioners who have made quite a good thing out of it; instead of denying that a penny a week could possibly pay for professional services and drugs, many of them set to work to organise their practices in such a manner as to make it pay. Mr. Smith has seen contract medical

practice at close quarters in all its forms, at its best and at its worst, and he can find little or no good in it. Contract work in practice, he maintains, is quantity instead of quality; the friendly societies and all such medical aid organisations are the natural economic antagonists of the medical profession; and any scheme of national insurance which sought to perpetuate and expand the club system would have been utterly unsound. The author strengthens his arguments by illustrations from abroad: he shows how in all industrial countries there is an inherent hostility between the medical profession and the friendly societies, and how the practitioners of the Continent have been anxiously looking towards this country in apprehension lest their own progress may be hampered by the example of Britain. This analysis of the medical opposition to the Insurance Bill as originally framed is in sharp contrast to some of the misleading rubbish which has appeared in other lay columns. It is to be hoped that the lesson it teaches will be pressed home upon the public at large, who cannot then fail to understand the reason for the attitude of the medical profession towards the friendly societies, and the view which the Government has taken of that attitude.

CHRONIC ACETANILIDE POISONING.

THERE are probably few powerful drugs which are consumed more widely and indiscriminately than the coal-tar analgesics, judging from the number of quack remedies which contain one or more members of this group of substances. Moreover, a very large amount is taken in the form of compressed tablets, bought only too easily over the druggist's counter. Considering the well-known toxicity of antipyrin and its congeners, it is a matter for surprise that more has not been written about the poisonous effects of long-continued abuse of these compounds. Dr. Herman C. Gordinier, in recording two cases of chronic acetanilide poisoning in the *Boston Medical and Surgical Journal* of August 10th surmises that part at least of this deficiency is due to errors in diagnosis made possible by deception on the part of the patient. His first patient was a woman of 30, whose flat denial of any drug habit led at first to a mistaken diagnosis, until by careful observation a supply of five-grain tablets of acetanilide was discovered among her belongings. Then it was found that she had for four years been taking a daily dose of 50 to 75 grains. She complained of great weakness, palpitation, faint attacks, and shortness of breath. There was a striking cyanotic tinge of the lips, ears, fingers, and toes. The conjunctivæ were pale and cyanosed, and the skin of the whole body was bluish-black. This colouration varied from time to time, its periods of greatest intensity coinciding with an increase of the subjective symptoms. The heart was dilated, and there was a murmur of mitral incompetence. The spleen was enlarged and tender, the liver less so. An examination of the blood, at the first interview, discovered an erythrocyte count of 9,200,000 per cubic millimetre, with some poikilocytosis, but no other striking change. Several years later, however, the count had fallen to 2,142,610 per cubic millimetre. The colour of the blood was bluish-black. There were several points of superficial ulceration in the skin, one on the front of the left leg, another on the pinna of the ear, and a third in association with the scar of an abdominal operation. A very careful examination of the urine was made. The specific gravity was 1026; the colour, brownish-red when it was passed, changing later to an inky black. It reduced Fehling's solution and yielded dextrosazone crystals with the phenylhydrazine test. The ethereal sulphates were greatly increased. There were no blood pigments, the abnormal colour being due to urobilin. Glycuronates were probably, but not certainly, present. A rapid and continuous improvement began as soon as the tablets were stopped. After a period of excitement and sleeplessness the patient lost her craving for the drug and was apparently cured. The second patient was also a woman, 52 years of age. In her case there was a varying cyanosis, and both liver and spleen were tender and enlarged. The blood and urine displayed much the same changes as in the first case, and there was a similar cardiac enlargement. From his study of these cases and those recorded in medical literature Dr. Gordinier concludes that the continuous ingestion of acetanilide or allied products creates a perfectly definite syndrome of cyanosis, with enlargement of heart, spleen, and liver, a definite blood picture and characteristic urinary findings; and that there is an equally definite acetanilide habit.

THE ACTION OF THE TROPICAL SUN ON MEN AND ANIMALS.

IN the temperate zone a prolonged period of excessive sunshine may have, as we pointed out in these columns on August 19th, some effect upon the mental attitude and physical condition of the inhabitants. Probably the abnormal amount of sunshine which we experienced in the first half of August had some share in bringing to a climax the late remarkable epidemic of strike mania. To work in the blazing sun with the thermometer at 90° F. or more was calculated to produce a state of intense nervous irritability and exasperation of mind, leading to distortion and exaggeration of grievances on one side and impatience at complaints on the other. In the tropics the native worker, if left to follow his own bent undisturbed, seeks the shade and avoids exertion during the heat of the day. Animals also instinctively keep under cover while the sun is shining. Even the monkey, a native of the tropics, making its home in the recesses of the forest into which few of the sun's rays can penetrate, seldom exposes itself to the sunshine for more than a few minutes at a time. Dr. Hans Aron of the Philippines University, Manila, who has lately made an experimental investigation into the action of the tropical sun on men and animals, asserts that the monkey, notwithstanding the fact that it is a native of the tropics, withstands exposure to the sun's rays worse than any other animal with which he is acquainted, not excluding the white man himself. Dr. Aron, in a paper in the *Philippine Journal of Science*, sets out the provision which Nature has made to enable the body to resist the injurious effects of excessive sunshine. The animal body possesses the capability not only of regulating its heat production from the combustion of foodstuffs (chemical heat regulation), but also its loss of heat from convection, radiation, and water evaporation (physical heat regulation). Normally the thermal effects of the surroundings are compensated for, either by a suitable transference of heat to the surroundings or by the conservation or production of heat within the body, so that the body temperature within narrow limits should remain practically the same. There are, however, bounds to this power of regulation. If the body be heated too intensely, or if the loss of heat be inhibited, the latter will accumulate and the body temperature will rise. High air temperatures alone do not change the body temperature so long as the latter can be regulated by the loss of sufficient heat through water evaporation. If the relative humidity of the air be high and therefore the evaporation of water lessened, the loss of heat is inhibited. The radiation from the sun is an important factor. The majority of substances, including the animal body, have a much higher coefficient of absorption of heat than the air has, and therefore they become hotter in the sun than does the surrounding air. A dog placed in the sun soon exhibits symptoms of heat-hyperpnœa; its respiration becomes quicker,

the tongue hangs out, and the saliva increases and drops from the mouth. As dogs have no sweat glands the evaporation of water, which in man is effected by the secretion of sweat, is replaced in these animals by increased evaporation from the surfaces of the lungs, mouth, and especially the tongue. Monkeys, like dogs and rabbits, have no sweat glands, and their physical heat regulation is confined to the reduction effected through water evaporation from the lungs and mouth by increased respiration. Their capacity to evaporate water in this way is limited. Monkeys exposed to sunshine in Manila died within 70 to 80 minutes, but the shade afforded by an open umbrella held over an animal was sufficient to save it from any injurious consequences caused by the sun's rays. Dr. Aron summarises his conclusions as follows. Under climatic conditions, even in the cooler seasons of the year in Manila, animals, such as rabbits and monkeys, which by nature have only a limited power of physical heat regulation, or animals the physical heat regulation of which is artificially inhibited (e.g., by tracheotomy in dogs), die if exposed to the sun, the body temperature rising to febrile heights. If the animals are protected from the rays of the sun, or if the increase of heat due to radiation from the sun is compensated for by an increased loss such as would be brought about by a strong breeze, then the animals experience no ill effects. Insolation of the skull alone is without result if the body temperature is kept within normal limits. The post-mortem appearances in animals which have died as a result of insolation show decided hæmorrhagic lesions of the meninges in the brain, and in monkeys in the heart. In animals without sweat glands the subcutaneous tissues are warmed by the radiated heat from the sun to temperatures above those compatible with life. The human skin if exposed to the sun is warmed to about 3° or 4° C. above the normal skin temperature, an increase to the normal body temperature being, of course, prevented by evaporating sweat. The brown skin of Malays, while theoretically absorbing more heat in the sun, shows a smaller rise in temperature in the tropical sun than the skin of white men in similar circumstances. In explanation of this it is suggested that an earlier and better water evaporation by perspiration takes place in the coloured man, who is said to have larger and better developed sweat glands. A man with a coloured skin is, if this be an anatomical fact, in a better position as regards physical heat regulation than the man whose skin is white.

MEMORIAL MEETINGS FOR DEPARTED MEDICAL MEN.

A BEAUTIFUL custom has been followed for some years past in St. Louis, U.S.A., which cannot fail to elevate the ideals of the medical profession and cement the bonds of professional fellowship, and which might be followed elsewhere with great advantage to the guild of medicine. There are somewhere about 2000 medical men in that city of three-quarters of a million population, and of these more than a third are members of the St. Louis Medical Society. It is the custom of that society to set aside one Sunday afternoon in each year for a mass meeting of the profession in commemoration of those of their number who have died during the preceding year. The proceedings consist of sacred music, a brief address by the President of the Medical Society, and a short appreciation of each of the departed physicians in turn, delivered by someone well acquainted with him in all his relations of life. A few passages from the memorial address by Dr. Robert Schlueter, President of the St. Louis Medical Society, uttered at the last memorial meeting, will serve to illustrate the spirit that animates these pious gatherings. After stating that nine of their number had passed away during the year, Dr. Schlueter said that rarely did it fall to a medical man's lot to have his name and deeds remembered much beyond those who knew him while he was alive. Of those who stood aloof from the common herd, some did so because of superior merit, but many others because of exceptional opportunity or favourable chance, so that the work of men who seemed mediocre should not be under-estimated if it apparently had nothing to give it extraordinary distinction. There were many men whose true worth only became known after the bias of their contemporaries had been removed, while many were of

> "Those who never sing,
> But die with all their music in them,"

and very few of these could expect to be rescued from obscurity, as was John Bassett by the searching and keenly observing eye of William Osler. Dr. Schlueter thought that no injustice would be done by regarding his late associates without much discrimination and bestowing upon each of the dead co-workers more or less equal consideration. In this liberal spirit the commemorative addresses were made, and we feel constrained to admit that for simple, direct feeling they are each and all eloquent. It is a remarkable thing that such a spirit of fraternal unity should have come about in a city which, more perhaps than any city in the United States, was a few decades ago notorious for its professional enmities and strife. We repeat, therefore, that the practice is not only a beautiful one, but one which must make for harmony and brotherhood, and we should gladly see it followed in other communities.

THE STERILISATION OF WATER WITH ULTRA-VIOLET RAYS.

THE sterilisation of town water-supplies by means of ultra-violet rays is now becoming more and more popular. The question may fairly be said to have emerged from the experimental stage, at least in France. Along the whole Riviera, from Marseilles to Mentone, general uneasiness is felt in regard to the water-supply. In most places the water is said to be quite good, but it is also very generally acknowledged that it might accidentally be contaminated. If, therefore, some extra precaution could be taken this would be very welcome, and at Nice and Monaco, for instance, the authorities are only waiting for some conclusive verdict or argument that will enable them to decide whether they should sterilise their water-supply with ozone or by the ultra-violet rays. The very popular summer resort, the town of Saint Malo, is not waiting any longer, but has positively decided to adopt the ultra-violet rays for the treatment of its water-supply. At Isle-sur-Sorgues, near Avignon, in the Vaucluse department, waterworks on this principle are nearly finished, while at Maromme, near Rouen, they are completed and in working order. Maromme is the centre of half a dozen small suburban districts or villages close to Rouen, with a total population of 25,000 inhabitants. It has a water-supply derived from the chalk containing only from 6 to 82 bacteria per cubic centimetre. Strict precautions are taken to prevent the contamination of the catchment grounds. But, nevertheless, it only needs an accident or neglect to expose the water intake to serious dangers. Therefore Messrs. Puech and Chabal,[1] who represent the Westinghouse Cooper Hewitt Company of London and Paris, were entrusted with the establishment of quartz mercury lamps for the sterilisation of the Maromme water-supply. An installation has been constructed to treat 25

[1] See THE LANCET, Dec. 17th, 1910, p. 1784.

cubic metres per hour, or 600 cubic metres (132,000 gallons) in the 24 hours. But it is first necessary to filter the water, so as to make sure that it shall be clear enough to permit the easy penetration of the ultra-violet rays. For this purpose a very simple filter suffices, and in this case a filtering surface of 50 metres square is more than enough. This surface is divided into two filters. A layer two feet thick of clean fine sand is placed on a bed of small gravel, and this rests on perforated tiles carefully cemented together. From under the filters the water flows into small tanks or reservoirs that feed the sterilising apparatus. This consists of two distinct parts. There is an automatic valve contrived for the purpose of preventing the passage of the water whenever the electric current ceases. So long as the current keeps the lamp burning the same force closes the valve. But the moment the lamp goes out and the production of ultra-violet rays ceases, then the valve opens. The water thereupon runs through it to waste and does not mix with the purified town supply. When, on the other hand, the electric current is working satisfactorily and this valve is closed, the water passes close to three sides of the lamp and is thus exposed three times to the purifying action of the ultra-violet rays. From calculations made of the expenditure of electric energy necessary and of its cost the impression is gained that the employment of ultra-violet rays is decidedly cheap. As for its efficacy, the bacteriological laboratory of Rouen examined 14 sets of three specimens each taken at different dates between Feb. 13th and March 24th this year. First there was the water fresh from the intake. The number of bacteria per cubic centimetre varied from 6 on March 1st to 86 on March 15th. The colon bacillus was sometimes absent, but generally there were 20 to 30 per 100 cubic centimetres. The second set of samples was taken after the water had passed through the filters, and the number of micro-organisms varied from zero to 14. The colon bacillus had entirely disappeared except from a sample taken on Feb. 25th, when 5 were discovered in 100 cubic centimetres. The third specimen was that of the water after it had been exposed to the action of the ultra-violet rays. In every one of the 14 specimens the water was absolutely sterile; there were no bacteria of any description whatsoever, and certainly no colon bacilli.

HARVEY AND CÆSALPINUS.

THE first volume of a work on physiology by Professor Luciani of Rome has just appeared in an English translation. The contents deal with the circulation and respiration, and incidentally Professor Luciani upholds the claims of Cæsalpinus as against those of Harvey with reference to the discovery of the circulation of the blood. Dr. D. Fraser Harris, in a paper appearing in the August number of the *Edinburgh Medical Journal*, takes up the cudgels briskly on behalf of Harvey. He brings forward nothing new; in all probability there is nothing to bring; but his paper is a useful marshalling of facts. It is but rarely that any scientific discovery can be said to be entirely due to the man who first gives it to the world, but he it is to whom the name discoverer rightly belongs. Thus Adams had calculated the probable position of Neptune before Leverrier, but, owing to the procrastination of the British Astronomer Royal and the want of an acurate star chart, it was Leverrier who obtained the credit, although Adams is now universally allowed to have an equal share in the glory. After the discovery it was found that the planet had been seen before on more than one occasion. Something similar was the case with Harvey; many of his predecessors had noted facts in connexion with the circulation—the Hippocratic writings contain the words περιόδος αἵματος, Galen knew that the arteries contained blood, and Fabricius, Servetus, and Cæsalpinus had all observed phenomena which might have led to the discovery. But Harvey unquestionably was the first to draw the correct deduction from the observations of his predecessors and himself—namely, that the blood does make a complete circuit—and to him therefore rightly belongs the name discoverer.

ACUTE LEUKÆMIA.

THE researches of Ehrlich upon the morphology and staining reactions of the leucocytes of human blood have led to a most accurate examination of the blood in health and disease, with the result that a more or less definite blood picture is now recognised for many infective diseases and for pathological conditions of the blood-forming organs. The original classification of Ehrlich into granular and non-granular leucocytes with their subdivisions—the former into neutrophile, eosinophile, and basophile, and the latter into small lymphocytes, large mononuclear leucocytes, and transitional forms—has been more or less generally adopted, although numerous alternative names have been applied to most of the varieties. The dualistic view of Ehrlich that the granular forms originated in the bone marrow and the non-granular forms for the most part in lymphoid tissues has, however, been much debated, and, although it is now generally accepted, there are a few authorities who believe in the existence of non-differentiated parent cells from which both varieties are derived. Ehrlich's original view has been so far modified as to admit that there is a non-granular stage of the myelocytes or marrow cells, which subsequently develop into the granular forms of the blood. This non-granular form has been called a myeloblast by Nägeli. These cells may appear in the blood under pathological conditions, and since they are difficult to distinguish from the pathological forms of the large lymphocyte, it is obvious that the interpretation of blood films in which they occur may give rise to difficulty. An interesting and critical examination of this question is given in a monograph[1] upon acute leukæmia by Dr. Albert Herz, who has observed eight cases in the wards of Professor Kovacs of Vienna, six of which came to necropsy. He also gives an exhaustive summary of the literature of this interesting and grave condition. He points out that the nature of these cases cannot always be established from the clinical and hæmatological characteristics only, since the blood picture is variable and aleukæmic forms of leukæmia exist. The pathological histology of the blood-forming organs is the most important criterion. Dr. Herz recognises an acute lymphatic and an acute myeloid form of the disease, and believes that the features of this condition rather tend to support the dualistic than the unitarian views as to the origin of the leucocytes. The disease in the majority of cases begins suddenly, usually with fever, associated with great weakness, headache, and pains in the back and limbs. Not infrequently sore-throat or ulceration of the mouth occurs early in the disease, and also marked hæmorrhagic tendencies. Asthenia and cachexia quickly supervene, and are profound. The changes in the mouth comprise, in addition to ulcerations, necrosis and membranous or gangrenous affections. The lymphatic glands and the spleen are enlarged, but much less as a rule than in the chronic forms. Death may occur from hæmorrhage, from secondary septic infections, from exhaustion, or from pulmonary complications. In the acute lymphatic form the lymphocytes are increased, the relative increase being of greater diagnostic importance than the absolute number. They may form 90 or more per cent.

[1] Die Acute Leukämie (Acute Leukæmia). Von Dr. Albert Herz. Leipzig and Vienna: Franz Deuticke. 1911. Pp. 184. Price M.4.50 or Kr.5.40.

of the total. As a rule the pathological large lymphocyte preponderates, though sometimes large and small cells occur in approximately equal numbers, and in rare instances the small lymphocytes preponderate throughout. The pathological large lymphocyte is described by Dr. Herz as a large cell with a large round or oval nucleus and with homogeneous, basophile protoplasm. Sometimes there occur very large forms called giant lymphocytes and others with an indented or lobulated nucleus. Degenerative appearances are not infrequent. All these cells can only be regarded as of lymphoid origin if transitional forms between them and the mature small lymphocyte are present, otherwise the distinction from acute myeloid leukæmia is very difficult. The characters of the blood in this condition are markedly different from the typical blood picture in chronic myeloid leukæmia. In acute myeloid leukæmia the eosinophiles and mast cells may be entirely absent, and there are abundant atypical undifferentiated immature forms of the granular leucocytes: viz., the neutrophile myelocytes and their non-granular early stage—the myeloblasts of Nägeli. In some cases these cells may be the chief ones present. Various small differences in staining reactions are described between the large pathological lymphocyte and the myeloblast, but of these Dr. Herz has only found one at all reliable—viz., that the nuclei of the latter stain very well with the tri-acid stain, whereas the nuclei of the former do not. The pathological histology of the two forms of acute leukæmia is different and approximates in each case to the appearances in the chronic forms. In the acute lymphatic form there is a deposit of lymphocytes in various tissues, whereas in the acute myeloid form there is infiltration of the tissues and organs with cells of myeloid origin, including Nägeli's myeloblasts. The disease has been regarded as a tumour formation, closely related to sarcoma by some authorities, as an infective process by others. Dr. Herz inclines to the latter view, but regards a single or specific cause as improbable, since he believes that various agents have the power to produce changes in the hæmapoietic organs resulting in leukæmia.

NATIONAL INSURANCE IN GERMANY.

IT seems to be the fate of the medical profession that its interests should be persistently ignored by the framers of national schemes of insurance. At the time that our Chancellor of the Exchequer was placing his original measure before the British people the whole of the German laws on the same subject were under discussion in the Reichstag, and great hopes were entertained that some provisions would be included destined to remedy the many defects in the working of the measure as far as the medical practitioner is concerned. One of the principal demands put forward was the inclusion of a definitive and adequate mode of remuneration for medical services in the place of the existing system of bargaining with each sick club. These hopes have been rudely dispelled; in fact, the position has been distinctly rendered worse by increasing the income-limit of the insured from £100 to £125, and medical men throughout the German Empire now recognise that self-help and a strong organisation afford the only means of safeguarding their personal as well as professional interests. It has been decided to form an organisation of medical practitioners with the object of obtaining full recognition of the demands hitherto ignored. A central board, we are informed by a German correspondent, has been formed to which the task of enforcing these demands will be entrusted, and the following line of action has been decided upon. In the first place, all contracts between medical practitioners and sick clubs must be submitted for approval to the central board. To further the free choice of doctors commissions and arbitration boards are to be formed, and steps taken to prevent the treatment of sick-club patients by unqualified persons. Of particular interest is the decision to enforce the usual fees in the case of sick-club patients with an income between £100 and £125. This is due to the fact that the extension of the income-limit will include within the scope of compulsory insurance a large number of persons which hitherto formed a not inconsiderable portion of the medical practitioner's private practice, and their loss will necessarily entail serious financial results. It was also decided to consider the establishment of a uniform standard of fees for professional services, applicable throughout the German Empire, rendered to members of sick clubs.

THE REVISION OF THE PHARMACOPŒIA.

A FURTHER report has been issued by the Committee of Reference in Pharmacy to the Pharmacopœia Committee of the General Medical Council. It includes the results of work accomplished by the committee from January, 1910, to May, 1911, and with it has been published a supplementary report dealing with work which has been done subsequently. It may be assumed that these two reports are the last of the series to be issued by the committee, and the Pharmacopœia Committee now has at its disposal a mass of valuable material which will form the skeleton of the monographs in the next edition of the Pharmacopœia. The newly issued reports deal chiefly with the monographs from Jalapa to Zinci Valerianas, and also include an appendix giving the processes for (1) the determination of the acid value of fixed oils, fats, waxes, and resins; (2) determination of the saponification value of fixed oils, fats, waxes, and resins; (3) determination of the iodine value; (4) determination of the unsaponifiable matter; (5) saponification process for volatile oils; and (6) acetylation process for volatile oils. In many of the monographs important alterations are suggested.

ON SOME EFFECTS OF SALICYLATES AND ASPIRIN.

THE unpleasant effects of salicylates in overdoses or in hypersusceptible persons are well known, and the fact that aceto-salicylic acid, or aspirin as it is more generally named, sometimes causes gastric pain and other evidence of digestive derangement, especially if given with alkalies, is also a matter of common knowledge. We publish in this week's issue of THE LANCET two papers referring to certain aspects of the action of these drugs which are worthy of note. The first of these is by Mr. H. Ewan Waller, who gives notes of three cases, which he suggests indicate that the salicylates, including aspirin, have a powerful influence against the activity of the thyroid gland. He first discusses the theory that the ordinary symptoms of fever are due, at any rate in part, to increased activity of the thyroid gland brought about by poisons or by toxic agencies of various kinds. This theory, as he points out, was expounded in an interesting article published in THE LANCET of Nov. 9th, 1907, by Dr. Arnold Lorand, who reviewed the evidence, partly experimental and partly clinical, upon which it was based. Mr. Waller then discusses his own cases, the first of which was a patient with acute tonsillitis and febrile manifestations. After considerable doses of sodium salicylate and of compound tincture of cinchona, a subnormal temperature, a low pulse rate, and obstinate constipation supervened—symptoms which, together with a low blood pressure, Mr. Waller attributes to depression of thyroid activity. His second case was a woman with "minor

thyroid inadequacy" and chronic constipation. The last-named symptom was found to be increased by aceto-salicylic acid, administered for lumbago. The increased constipation is interpreted as due to exaggeration of the thyroid depression brought about by the drug. The third case was one of Graves's disease, in which considerable improvement occurred after treatment by aspirin. Mr. Waller's suggestions can at most be regarded as tentative, even though the thyroid theory of the nature of fever be, as he states, a tempting one. The complex chemical interrelations of the various organs of the body through the agencies of hormones and internal secretions constitute some of the most striking results revealed by modern experimental research, and have opened up a fruitful field of therapeutic possibilities. Numerous ingenious speculations as to these functions have been propounded, among them the thyroid theory of fever, but it is important to bear in mind, as Mr. Waller obviously does, that they are theories. His conclusion that aspirin may possibly be useful in the treatment of Graves's disease is worthy of trial, but its success would by no means establish the accuracy of his explanation. In this connexion it is interesting to note that salicylates in large doses have been recommended in the treatment of thyroiditis. The other note to which we refer is a brief account of two cases showing swelling of the face and urticarial wheals after taking aspirin in moderate doses. The swelling of the face in both instances appears to have been considerable, so as to make the patients almost unrecognisable, and in both the tongue became enlarged. The condition appears to have been of very short duration. In view of the alarm to which such a condition must give rise, it is important to bear in mind the possibility of its being due to aspirin, and Dr. Alexander Brown's note should be useful in calling attention to the matter.

JOHN LEYDEN'S CENTENARY: CIVIL SERVANT AND PHILOLOGIST.

THE British Empire, in its colonial expansion particularly, owes much to its medical men, not only in the strictly professional sphere, but in others more or less open to cultured intelligence when thrown into situations appealing to its exercise. The court physician at oriental seats of government, the medical missionary in semi-civilised or partially explored countries, the practitioner attached to outlying posts in colonies or dependencies, the surgeon serving in the army, navy, or mercantile marine—to each and all of these the British name or prestige is signally indebted for initiative or achievement redounding to its interests, immediate and permanent. Sir John Macneill as body-physician to the Shah of Persia, Dr. Livingstone at missionary stations in Central Africa, Sir Joseph Fayrer or Sir Harry Ker-Innes at their respective posts in Hindustan, a Huxley or a Spencer-Wells serving at a naval command in tropical or sub-tropical waters, are but a few out of many conspicuous examples of the medically qualified professional man utilising his opportunities or employing his leisure for the advancement of his country's interests in the positions or the circumstances in which his lot happened to place him. A book, indeed, fascinating, even romantic in its tenor, might be written on what Lord Morley calls the "flexibility of adaptation" displayed by the British medical man in situations or crises evoking his intervention, proving, *inter alia*, that the mind scientifically trained, and quickened by contact with nature in its many phases, animate or inanimate, individual or social, can "take occasion by the hand" and utilise its energies to the benefit of humanity in ways as profitable as they are unexpected. The recent celebration of the centenary of John Leyden's death did not fail to remind his compatriots of the "flexibility of adaptation" in question, conspicuous as, in his short-lived career, he became, not only for medical work in the Madras Presidency, but also for biological, ethnographical, and philological study among the races of the Far East, which made him in those subjects an authority of world-wide recognition and acceptance. A Borderer contemporary with Sir Walter Scott, who has portrayed his strongly marked and complex personality in vivid colours, he so utilised his opportunities as to become the most brilliant oriental scholar of his time, giving an impetus to ethnological and linguistic research which had its effective continuation in the work of another and a kindred spirit, also of medical training and experience, Dr. James Cowles Prichard, whose monograph on the Celtic races long held the field as the most learned contribution to a supremely difficult subject. Sir George Douglas, who, as a cultured and sympathetic Borderer, presided at the Leyden commemoration, in the course of his speech referred to other fields in which the hero of the day excelled, conspicuous among these being that of legendary poetry, in which Leyden was not only a collector and commentator, but no mean performer himself, as Scott and Campbell, his contemporaries, have testified. So true it is that the plastic and multiform mind loses nothing by its early concentration on science, particularly when the science in question is that devoted to the study of mankind in its numberless phases, whether of health or disease.

THE AMERICAN PROCTOLOGICAL SOCIETY.

THE Thirteenth Annual Meeting of the American Proctological Society was this year held at Los Angeles, California. Dr. George J. Cook, of Indianapolis, the President, was in the chair. Among papers of importance one was read by Dr. Granville S. Hanes of Louisville, Kentucky, on the Surgical Anatomy of the Colon. He pointed out that *in situ* the large intestine was shorter than after dissection, and that a 30-inch colon tube was long enough to extend from the anus to the cæcum; however, he claimed that it is not possible to pass a rectal tube beyond the middle of the sigmoid, and beyond this the splenic and hepatic flexures form insurmountable obstacles to the passage of a tube. He had been able to show that a bland liquid introduced by means of a funnel and tube into the rectum would flow out of an old appendicotomy opening after a few minutes. He insisted that the "inverted" position of Hanes was to be preferred both by the operator and the patient when any kind of illuminating instrument is to be employed in the rectum or sigmoid. A "symposium" on Constipation, embracing seven different parts of the subject, was presented: Dr. Horace Heath of Denver spoke on the Etiology of Constipation; Dr. Samuel T. Earle of Baltimore on its Physiology; Dr. John L. Jelks of Memphis on the Bacteriology of, and the Urinary Findings in, cases of Constipation; Dr. W. M. Beach on the Pathology and Diagnosis; Dr. Alfred J. Zobel of San Francisco on the Sequelæ of Constipation, including Auto-intoxication; Dr. Dwight H. Murray of Syracuse, N.Y., on the Non-surgical Treatment; and Dr. Louis B. Hirschman of Detroit on the Surgical Treatment of Constipation. Dr. Donly C. Hawley of Burlington, Vermont, described two cases of pruritus ani which he had treated successfully by dilatation of the anal canal, scraping all ulcerated patches, and cauterisation of the entire area of inflamed skin by means of a Paquelin cautery. Dr. T. L. Hazzard of Pittsburg described four recent cases of foreign bodies in the rectum. In two of these cases in children the foreign body was a match which had been swallowed, in another case a 3-oz. oval medicine bottle had been introduced by the patient; and in the fourth case the foreign body was a beer-glass 2 inches wide and 3½ inches tall; this also had been put in by the patient. In all the cases the foreign body was removed, but the beer-glass broke while being withdrawn. We make no

attempt to refer to every paper read at the meeting, but the interesting and important character of some of the observations justify what would otherwise seem an unduly specialistic undertaking.

ENGLISH CENSUS, 1911: PRELIMINARY REPORT.[1]

WE received recently a copy of the Registrar-General's introductory report on the twelfth Census of the population of England and Wales, which was taken on April 3rd, 1911. This volume furnishes the means of measuring the growth of the population during the several intercensal periods since 1801, the year of the first English Census. The report is based, not on a tabulation of the "household schedules" at the Central Office, but on the summaries of population returned by the local registrars, who are responsible for the enumeration of the inhabitants in their respective areas. It gives simply the numbers and sexes of the people in the counties, and in the urban, rural, and other districts of England and Wales. In preparing the subsequent reports the contents of the schedules themselves will be scrutinised at Somerset House, and amended population statistics will be set forth in greater detail than in the present report, which is avowedly a preliminary one merely.

In accordance with precedent, the enumeration of the people has been carried out by means of household schedules, the enumerators working under the direction of the district registrars. There are in this country 2009 registration sub-districts, which for Census purposes were subdivided into 35,000 enumeration districts, for each of which an enumerator was appointed. Considerable changes have been made in the enumeration arrangements—the most important of which consists in the discontinuance of the use of enumeration books. At previous Censuses the contents of the schedules were copied by the enumerators into books, from which the results of the Census were tabulated—a laborious task of which general complaint was made. With the object, *inter alia*, of avoiding risk of error in the process of transcription, the present Census Commissioners decided to relieve the enumerators of this complicated and monotonous work.

The present volume is merely introductory to the revised official returns of the recent Census. We learn that the first of the subsequent volumes will consist of information relating to the whole country, but dealing with particular subjects only. At a later date volumes will be issued relating to separate counties or groups of counties. Finally, a report will be presented on the "Census of the British Empire," somewhat on the lines of the Census Report of 1901, which for the first time afforded authoritative statistics for the Empire as a whole.

Census Results.

The returns show that at midnight on Sunday, April 2nd, 1911, there were living in England and Wales 36,075,269 persons at all ages and of both sexes, or an increase of 10·9 per cent. on the numbers enumerated in April, 1901. In proportion to population, the percentage increase was smaller, although the actual increase of population since last Census was numerically greater than in any previous decennium. The net gain of population, by excess of births over deaths, which had been 12·39 per cent. in the intercensal period immediately preceding, rose in the period 1901–1911 to 12·44 per cent., this result being due to the counterbalancing of the great reduction of the birth-rate by a still greater reduction of the death-rate.

Sex Proportions

Of the 36,075,269 persons enumerated at the last Census, 17,448,476 were males and 18,626,793 were females. This gives an excess of 1,178,317 females over males. The proportion of females to males was the same at the two last Censuses—viz., 1068 to 1000—but when allowance is made for the number of men absent on service in South Africa in 1901 there is no doubt that the true proportion of females to males was somewhat lower in 1901 than in 1911. The sex distribution of the population varies considerably in different parts of the country; for whilst the proportion of females to 1000 males did not exceed 912 in the county of Monmouth it was equal to 1218 in Sussex.

Population Estimates.

The provisional estimate of the English population in 1911, based on the assumption of an annual rate of increase equal to the mean rate in the previous intercensal period, was in excess of the enumerated Census population by 1·13 per cent. In 1901 the estimated was less than the enumerated population by 0·44 per cent. Rates of mortality and other expressions showing proportions to the estimated population are necessarily affected to a corresponding extent, but, of course, in the opposite direction. Thus the birth-rate and death-rate for the year 1910, provisionally given in the Annual Summary as 24·8 and 13·4 per 1000, are found, on revision, to be 25·1 and 13·5 respectively. Taking England and Wales as a whole, the errors arising from the traditional method of estimating populations will be seen by the above figures to be comparatively trivial, but in calculating the mortality-rates for certain local areas where the differences between estimated and Census results are far greater, the defect of any method based on a general assumption is very serious. Moreover, it is in these very cases that the difficulty of devising a remedy is greatest. The natural increase of the population by excess of births over deaths is known; but the balance of inward and outward passenger movement (the balance of migration) is not known. If only trustworthy statistics of passenger movement classified according to place of residence of the passengers were available, it would become possible to frame current estimates of the English population which would be approximately accurate from year to year. It is earnestly to be hoped that in the near future this necessary information may be forthcoming. But the method of estimating population by births, deaths, and migration is now only practicable in the case of England and Wales as a whole; it is not possible in the case of portions of the country, since no records of internal migration exist. Perhaps the most promising of the many methods hitherto suggested for overcoming this difficulty is that which has been adopted in the case of the metropolitan boroughs, where estimates based on the rate-book records have been made for several years past under the Equalisation of Rates Act. There is reason to believe that in the course of those years the accuracy of the estimates has been generally increased. In a few instances, however, notably those of Wandsworth, Westminster, Finsbury, Lewisham, Woolwich, and Greenwich, the method has hitherto failed. These instances serve to show that, in the words of the report, "even the best methods hitherto devised for estimating populations of local areas cannot be trusted in the later years of a decennium. They therefore emphasise the importance of more frequent Census enumerations, not only in the interest of vital statistics and sanitary progress, but also for the purpose of ensuring the proper distribution of public funds when this is to be determined by the number of the population."

Administrative County of London—Greater London.

In the 100 years 1801–1901 the population of the area now covered by the Administrative County of London increased from 959,310 to 4,536,267. At the Census of 1911 the population was found to number only 4,522,961, showing for the first time an actual decrease of 0·3 per cent. In recent previous decennia the increase has varied from 7·3 to as much as 17·4 per cent. The metropolis furnishes the most remarkable instance of decline of population in the central portion of a large city. In the centre of London the population has for many years been decreasing owing to the substitution of business premises for dwelling houses. But around this central area there is a circle of districts the population of which is gradually increasing; whilst outside these again there is a zone of suburban districts in which the population is increasing with extraordinary rapidity. Outside the Administrative County is a wide belt of suburban towns and districts designated the "Outer Ring," which, together with the County of London, constitutes "Greater London." The population of this area now exceeds seven and a quarter millions; and although its growth in the recent decennium has been less than in previous decennia, it amounted to more

[1] Census, 1911: Preliminary Report. [Cd 5705.] London: Wymans, Limited. Pp. 142. Price 1s. 4d.

than 670,000 persons, or 10·2 per cent. In the "Outer Ring" the increase was equal to 33 per cent.

United Kingdom.

The total number of persons returned as living in the United Kingdom on April 3rd last was 45,216,665, an increase of 9·1 per cent. on the number enumerated ten years previously. The population of England is returned as 34,043,076, that of Wales 2,032,193, that of Scotland 4,759,445, and that of Ireland 4,381,951. While the populations of England, Wales, and Scotland have shown continuous increases during the last 90 years, the population of Ireland, which in 1841 had risen to over 8,000,000, has shown a continuous decrease ever since that date. England now contains 75 per cent. of the population of the United Kingdom, Scotland rather more and Ireland rather less than 10 per cent., whilst Wales contains the remaining 4½ per cent. In the early part of last century Ireland contained nearly one-third of the population of the United Kingdom, but at the recent Census it was only 9·7 per cent.

THE SIXTY-FIFTH REPORT OF THE COMMISSIONERS IN LUNACY.

Numbers of Insane in England and Wales.

ON Jan. 1st, 1911, the number of certified insane persons in England and Wales was 133,157, exceeding the number recorded on Jan. 1st, 1910, by 2604. The average annual increase for the ten years ending Dec. 31st, 1910, was 2521, and that for the five years ending on the same date 2236. The increase for the year 1910 was therefore 83 above that of the annual average of the decennium and 368 above that for the quinquennial period. The increase in the population of the county and borough asylums for the year 1910 amounted to 2·2 per cent. The number of patients in registered hospitals increased by 3·3 per cent., in the criminal asylums by 4·3 per cent., in ordinary workhouses by 2·3 per cent., and in the metropolitan district asylums by 2·9 per cent. The private single patients have increased by 3 per cent., whilst the decrease in the number of insane outdoor paupers amounted to 3·2 per cent., and of patients in licensed houses to 1·6 per cent. in the metropolitan and 1·1 per cent. in the provincial houses. Private patients under care on Jan. 1st, 1911, numbered 10,890 (males 4709, females 6181), an increase on the figures of the preceding year of 274, or 2·5 per cent. A fact of some interest has been the change that has taken place in the relative distribution of the sexes since reliable statistics were established. Thus in 1859 the class of private patients comprised 2456 males and 2223 females, or a percentage distribution of males of 52·5, females 47·5; whereas in 1911 the proportions are reversed, being males 43·2 and females 56·8.

The pauper patients under care on Jan. 1st, 1911, were 121,172 (males 56,142, females 65,030), amounting to 91 per cent. of all the notified insane. The numbers show an increase of 2271 over last year, a figure which is 24 below the mean annual increase of the past ten years, but as many as 747 above that of 1909. The rate of increase of last year's numbers was 1·9 per cent., or 0·6 below that of the private patients. The males increased by 1·8 per cent. and the females by 1·9. In this class the female sex has always markedly predominated as evidenced by the percentage proportions. The criminal insane (males 832, females 263) show a net increase of 59, of which 22 appertain to the county and borough asylums.

Ratios of Insane to Population.

On Jan. 1st, 1859, there were known to be under care 36,762 persons certified as insane, and on Jan. 1st, 1911, the number so notified amounted to 133,157, an increase on the numbers of 1859 of 262·2 per cent. During the same period the estimated population of England and Wales has increased by 85·8 per cent. A clearer estimate of the apparent disproportionate growth of the numbers of the insane is to be found by contrasting at different periods the ratio which the latter bear to the general population. On Jan. 1st, 1911, the total number of notified insane persons stood to the estimated population in the proportion of 1 to 275, or 36·4 per 10,000. This gives an increase on the ratio of the preceding year of 0·83 per cent. On Jan. 1st, 1901, this ratio was 33 09, so that in the ten years it has increased by 10 per cent., the proportion of insane to the population rising from 1 to 302 to 1 to 275. The ratio of insane to population, which on Jan. 1st, 1869, was 23·93 per 10,000, had risen to 36 40 on Jan. 1st, 1911, an increase of 52 1 per cent. The ratio of admissions to population, which in 1869 was 4·71, was 6 04 in 1910, an increase of 28·2 per cent., or 1·1 less than in 1909.

Is "Occurring" Insanity Increasing?

The Commissioners point out that the increase in the number of the insane recorded year by year is no proof of the growth of insanity in the community, although it is often assumed to be such. There are, in point of fact, no sufficient data for a correct judgment on the latter head, and such evidence as there is tends to the conclusion that if insanity is increasing at all it is doing so very slowly and not proportionately to the increasing numbers of insane persons under care. For instance, some indication, it might be thought, would be given by the numbers who are admitted to care for the first time. Statistical information as to these first admissions is only available from 1898 onwards, and the ratio which their numbers bear to the population has been almost constant, that of 1910, however, being lower than in any other of the 13 years. Of some significance is the slight but obvious increase in the number of cases which are admitted for their first attack of insanity, but even here the relative increase of such cases does not necessarily imply an actual increase of insanity, for there are factors to be considered which render it impossible to determine whether the actual proportion of "occurring" insanity is really increasing in the community. It is probable that far more care is taken to segregate persons suffering from the minor forms of insanity than used to be the case, and it is certain that in the case of the aged numbers now go to swell the list of first attacks which formerly were not removed to asylums. But whether insanity be increasing or not, there is no question that the increasing numbers of those who have to be cared for are due to accumulation—that is, to the increase in chronic and irremediable insanity due to survival.

Recovery-rates and Death-rates.

The daily average number of certified patients was last year 105,580, the proportion in county and borough asylums being 93·3 per cent. The admissions numbered 21,861, or 97 above the number in 1909; and of the total admitted 17,961, or 82·1 per cent., were first admissions, being 0·3 below the decennial mean. There were discharged 9824 patients, of whom 7501 were stated to have recovered. The recovery rate, reckoned upon the total admissions, was 34·31 per cent., being 1·67 below the rate for 1909, and 2·18 below the average for the ten years 1901–10 inclusive. The rate for females, 37·41, was higher than that for males, 30·84. The rate in the asylums was 34 per cent.; amongst private single patients 58 per cent. The deaths numbered 9777 and were fewer by 361 than in 1909. The death-rate reckoned on the daily average number resident was 9 26 per cent., being the lowest yet recorded in any year and 0·61 below the average for the ten years.

Factors in the Causation of Insanity.

The statistics before the Commissioners have, since their introduction upwards of 30 years ago, appeared to show that there is a family history of insanity in persons admitted to asylum care amounting on an average in the case of males to 19 per cent. and of females to 23 per cent. of the total yearly admissions. This is probably an under-estimate, as there is always a considerable number of patients concerning whom it is impossible to obtain positive information on the point. The Commissioners point out that the question is not simply one of an *insane* heritage, but rather of a transmission of an instability of the nervous system which may manifest itself in many directions apart from actual insanity. Besides insane heredity two other factors stand out prominently in the history of insane persons. These are the toxic agent alcohol and the factor of mental stress. As regards alcohol, it was returned apart from any correlated factor in 7·3 per cent. cases. Of the two main forms of mental distress, that which is prolonged is far more commonly associated with the development of insanity than are sudden emotions and shocks. It appears from the returns to have been the only assignable cause in 9·6 per cent. cases, while sudden stress was thus

accepted in 2·2 per cent., each form being rather more frequently thus observed in females than in males.

With regard to the Asylum Officers' Superannuation Act, 1909, the Commissioners regard it as too early to speak with confidence as to how the Act is working generally, while it will take some time before all the points of difficulty that may arise will be satisfactorily cleared up. They welcome the Act as a move in the right direction, and hope that if some of its provisions turn out to be so restrictive as to be unworkable steps will be taken to get them amended.

REPORT OF THE MASSACHUSETTS STATE BOARD OF HEALTH FOR 1909.

THERE is little need at the present time to emphasise the necessity for a pure water-supply in order to maintain a high standard of public health; and, as a matter of fact, in the last report of the medical officer to the Local Government Board not a single epidemic due to water-borne disease is related to have occurred, so satisfactory is the condition of things in this country in this respect; nor was any inquiry deemed necessary in regard to any town of importance as to the sufficiency or purity of its sources of drinking water-supply. A similar satisfactory state of things obtains in Massachusetts, where it is many years since any serious epidemic traceable to a public water-supply has been recorded, a result doubtless due, in a very considerable degree, to enforcement of legislation for the protection of such supplies. Moreover, the improvement in health of the population has been far more marked than can be directly attributable to diminution in water-borne disease. Statistics of sickness are not available, but the reduction in the general death-rate has been greatly in excess of that due to enteric fever or other diseases known to be spread by means of drinking water. This improvement in the public health has given to that State "a reputation for the protection of the public interests in this regard that has doubtless been of material advantage to it in other ways." We quote from the forty-first report of the State Board of Health,[1] and are glad to feel assured that the same might be said of the great majority of public authorities in our own country. As population increases danger may arise from tracts of land that are within the gathering ground of a public water-supply becoming inhabited; this has actually occurred in Massachusetts, and its possibility cannot be disregarded anywhere. No doubt an ample reservation has been secured around the artificial lakes that have within recent years been connected with Liverpool, Manchester, and Birmingham as water-supplies; and Loch Katrine, that supplies Glasgow, has so large a cubic content as to be practically safe if ordinary care be taken. The pollution of rivers in Massachusetts is a standing menace to public health, and in a much greater degree than with ourselves; contamination by sewage and foul drainage from manufacturing establishments has increased greatly during the past few years, and numerous complaints of nuisances have been made. All plans of proposed schemes of drainage are submitted to the Board of Health before being carried out; but it has no power to prevent or limit pollution of rivers by those places which had sewerage systems in existence before the laws requiring the approval of the Board were enacted; the Board has no power of action in such cases of continued pollution except to report to the legislature.

The working of the Lawrence Experimental Station has been continued with results of ever-increasing value. The sand filters, to which sewage has been applied for a period of nearly 22 years, continue to produce effluents purified as well as, or better than, ever; contact filters which have been used for eight years, and sprinkling filters in use for ten years, are still in operation; the purification of manufacturing wastes has been studied, and the disposal of sewage sludge by destructive distillation has been specially investigated. Some of the chief results of these researches will now be summarised.

Water Supplies.

The consideration of the quality of water-supplies, as determined by chemical examination, is divided into that of the surface waters and that of the ground waters, since these present essential differences in character. Averages of all the analyses made during the last five years have been calculated and the considerable body of information so obtained is presented in the form of tables.

Surface water-supplies.—The Massachusetts observers consider that the quantity of organic matter present in surface water is best indicated by the determination of the ammonia present, especially the albuminoid ammonia. They do not lay down any limit or standard, but present a large body of actual observations, carried out during five years on 146 different supplies. Taking 0·01 per 100,000 as a provisional standard (although this is not definitely recommended), we find that 21 out of 28 streams do not exceed this limit; but only 3 out of 48 lakes, and 10 out of 70 artificial storage reservoirs, are equally pure in regard to this index of organic matter. Of the streams, one only contained more than 0·02, while 5 of the lakes and 29 of the storage reservoirs exceeded this quantity. The running streams were, therefore, purer in regard to their organic matter than either lakes or reservoirs. It is stated that nearly all of these last were formed by the flooding of areas from which the soil and organic matters had not been removed. As to free ammonia, all of the streams except 1, all of the lakes but 5, and 50 out of the 70 storage reservoirs, contained not more than 0·005 per 100,000.

Ground waters.—There are fewer ground-water supplies; most of the older waterworks are supplied from surface sources, the new supplies are generally obtained from underground. The usual method of obtaining "ground water" is by tubular wells, sunk from 25 to 50 feet deep; next in frequency come large circular wells, 20 to 40 feet deep; then the so-called filter galleries, which are "elongated wells," 10 to 20 feet deep, located along the shore of a pond or near a stream. These galleries are usually rectangular in section and often several hundred feet long. Both the shallow circular wells and the filter galleries are often supplemented by tubular wells sunk in their bottoms or near by. The most important consideration in comparing the qualities of ground waters is their relative freedom from sewage pollution; this is ascertained by determining the normal quantity of chlorine present, then by examination finding the total quantity in the sample; the excess is presumably due to sewage impurity. The waters are divided into three groups: those in which the excess of chlorine is *nil*, or not more than 0·1 per 100,000; those in which it is between 0·1 and 0·3; and those in which it is more than 0·3. Of a total number of 88 ground-water sources, 40 came under the first head, 20 under the second, and 28 under the third. The amount of nitrate present is also regarded as an index of exposure to pollution in a ground water. When this is derived from uninhabited ground the nitrates are either absent or very scanty; they are present slightly in waters derived from pasture lands, in noticeably larger quantity in waters derived from cultivated lands, and are very high in those from thickly settled regions, being formed from the ammonia of house drainage and other animal matter. Their determination therefore is of value, especially in connexion with the chlorine analysis. In 30 cases the nitrates were less than 0 01 per 100,000; in 45 between 0·01 and 0·1; and in 15 they exceeded 0·1. Of the 30 waters that were pure as regards nitrates, 24 also contained only 0·1 or less of excess chlorine; of the 15 waters containing more than 0 1 nitrates, 14 also contained more than 0·3 excess of chlorine. The determinations of the free and albuminoid ammonias in ground waters are "indices of the extent to which a polluted water has been purified and freed from organic matter in its passage through the ground." In only four of the 90 samples was more than 0·01 per 100,000 detected of albuminoid ammonia; three out of these four were in the first class as regards freedom from chlorine, and the same three contained less than 0·02 nitrates. In only five out of the 90 was more than 0·01 free ammonia found; three of these also contained more than 0·01 albuminoid ammonia, two of which were in the first class as regards chlorine. Purity, reckoned from minimal chlorine content, may therefore coexist with relatively high ammonia content, both free and albuminoid. No allusion is made to the bacterial content of these waters. It does not appear that the chemical constitution, however carefully determined, can afford any indication of the safety or otherwise of a drinking water comparable in value with that to be obtained from bacteriological

[1] Forty-first Annual Report of the State Board of Health of Massachusetts. Boston, 1910.

examination, though the one form of examination may usefully check the other.

Consumption of water.—In the metropolitan water district, comprising Boston and its neighbouring towns, with a population of just over a million, the consumption is 121 gallons (U.S.) daily per head (= 101 imperial gallons); a few towns have an even larger supply. Boston itself has 119 imperial gallons per head; in nine only is it less than 25 imperial gallons per head per day.

Purification of Sewage.

The world-renowned experiments at the Lawrence Station are still being carried on; the sand-filters have now been in operation for 22 years, and trickling filters and contact beds for ten and eight years respectively. Mr. H. W. Clark and Mr. S. Gage, who contribute this report, state that "sludge disposal is at present the most serious problem in the disposal of sewage on a large scale, and, as in past years, methods of disposing of sludge, and also the sediment present in the effluents of contact and trickling filters, have received attention."

Preliminary treatment for clarification.—Experiments have been continued on the action of the settling tank at Lawrence. This is a cylindrical tank with a sloping bottom; the sewage enters near the bottom and rises slowly to an outlet near the top, the period of sedimentation being about two hours; the sludge is removed each week.

Parts per 100,000.	Albuminoid ammonia.		Kjeldahl nitrogen.		Oxygen consumed.	Bacteria per c.c.
	Total.	In solution.	Total.	In solution.		
Lawrence sewage	0·91	0·52	2·75	1·83	9·52	1,136,400
Settled sewage ...	0·48	0·28	0·88	0·50	3·85	977,800

The average removal of suspended matter from the sewage during the year has been about 41 per cent., as shown by the albuminoid ammonia results; the total removal of organic matter has been 29 per cent. and 32 per cent., as shown by the total albuminoid ammonia and oxygen consumed respectively. A similar settling tank at Andover has furnished similar results. A third tank has been installed on the Imhoff, or Emscher, principle. This is of cylindrical form with conical bottom, inside which is a smaller cylinder of similar shape, containing a baffle plate, and provided with a trapped outlet connecting it with the large tank in which it is suspended. The sewage enters at one side of the inner tank, flows under the baffle plate, then rises and overflows through an outlet on the other side. The solids deposited in the inner tank pass downward through the trapped outlet into the large tank, where they accumulate and become decomposed by bacterial action. Owing to the trap in the outlet of the inner tank, the gases and other products of sludge decomposition do not mingle with the sewage during its passage through the tank. The capacity of the outer tank is equal to about 24 hours flow, and that of the inner tank to about five hours flow. During five months' working 86 per cent. of suspended matters was removed, as shown by albuminoid ammonia; and 71 per cent. of total organic matter, as shown by both albuminoid ammonia and oxygen consumed. The sludge accumulated in the five months amounted to about 25 cubic feet per million gallons of sewage. The efficient removal of suspended matter is said to be largely due to the fresh character of the sewage.

Parts per 100,000.	Albuminoid ammonia.		Kjeldahl nitrogen.		Oxygen consumed.	Bacteria per c.c.
	Total.	In solution.	Total.	In solution.		
Fresh sewage ...	1·89	0·72	5·63	3·04	10 00	2,849,300
Imhoff tank effluent	0·55	0·38	1 38	0·99	2·87	2,704,100

Filtration.—The working of the historic sand filters at Lawrence has been continued, four filters having now been in operation for nearly 22 years. For 16 years (since 1893) these filters have been operated without removal of the sand, the surface being merely dug over four times a year. In winter the trenches are covered with boards, which, together with the snow that accumulates on them, protect the filters from cold. Filter No. 1 may be taken as an example; it is 60 inches in depth and has had sewage applied at the rate of 50,000 gallons per acre; the size of the sand particles is 0·48 millimetre.

Parts per 100,000.	Free ammonia.	Albuminoid ammonia.	Oxygen consumed.	Bacteria per c.c.
Sewage...	4·06	0·67	5·43	—
Filter effluent ...	0·7688	0·0626	0·72	7600

Four "contact filters" are described; two of these, 5 feet in depth and composed of coke fragments, ¼ to 1 inch in size, have been in use since 1901; they are each filled once daily, and allowed to stand full for two hours. No. 175 was operated at an average rate of 415,500 gallons, and No. 176 at 270,000 gallons per acre daily, the former receiving sewage that had passed through a coke or coal strainer, the latter settled sewage. The former worked well, yielding an effluent containing 0·8698 free ammonia and 0·2670 total albuminoid ammonia, and 2·07 oxygen consumed; the latter lost about 11 per cent. of its open space during the year, and became badly clogged with organic matter. The effluent averaged 1·1545 free ammonia, 0·1644 total albuminoid ammonia, and 1·64 oxygen consumed. Two "slate filters" have been under observation; it is stated that filters constructed of horizontal layers of slate "were first tried at this station in 1901, and they have been much exploited in England during the last few years." The two at Lawrence are constructed of layers of roofing slate placed horizontally, the layers of slate being separated from one another by small concrete blocks ¾ in. thick. One (No. 376) contains 27 layers of slate, the exposed surface available for sludge deposition being about 314 square inches per gallon of sewage when full; the other (No. 377) has eight layers, and about 187 square inches of surface per gallon of sewage. Both are operated as "contact filters," being filled in one dose daily, and drained slowly after a two hours contact; they have been operated six days a week for five months without any sludge removal. No. 376 has received ordinary sewage, and No 377 fresh supernatant sewage from the Imhoff tank. The purification has been as follows:—

Parts per 100,000.	Free ammonia.	Total albuminoid ammonia.	Oxygen consumed.	Bacteria per c.c.
No. 376, Sewage	2·63	0 420	3·25	—
Filter effluent ...	2·36	0·314	2·25	516,300
No. 377, Sewage	6·25	0·69	4·46	—
Filter effluent ...	6·34	0·67	4·05	1,793,800

The nitrates in No. 376 effluent were 0·05 and in No. 377 were 0·13 per 100,000. There was practically no nitrification; "these so-called filters are simply contrivances to remove and, if possible, destroy sludge by biological action." This is the view generally held in this country, where they have been found to be effective and economical in dealing with the solid matters, but are not looked on as "filters," or as effective for complete purification of sewage.

Seven "trickling filters" have been in operation. The difficult question of effective distribution has been studied by a comparison between an automatic flush tank and dash-plates and a travelling distributer of the Fiddian type. The sewage flows into a hopper carried upon the central pivot, and thence through a central trough which travels with the distributer, and empties through a number of openings into the buckets upon the periphery of the cylinder; from these it is discharged upon the surface of the filter as the cylinder turns. Perfectly even distribution should, theoretically, result; in practice, small irregularities in the metal work of the apparatus, and slight unevenness in the track, the elimination of which would make the construction of the apparatus too expensive, have prevented

absolute uniformity of distribution. This, however, has been "much more uniform than with any of the devices previously tried." With the dash-plate method formerly in use only about 17 per cent. of the filter surface received the sewage at the intended rate—viz., from 1,000,000 to 2,000,000 gallons per acre daily; about 24 per cent. received none; about 23 per cent. received half the intended quantity; while 20 per cent. were flooded with 2,000,000 to 4,000,000 gallons, and 16 per cent. with 4,000,000 to 7,500,000 gallons. With the Fiddian system, about half the area received the intended rate, about a quarter 250,000 to 1,000,000 gallons, and the remaining quarter 2,000,000 to 2,500,000 gallons per acre daily.

Another difficulty in the management of filters results from clogging. Early in May some pooling was observed on one of the filters, and it was found that the surface layers were partly clogged with organic matter, but largely by the larvæ of a small fly (Psychoda alternata), whose presence had been noted in previous reports. These larvæ collect in the upper layers, cause the sewage to pool on the surface, and so cut off the ventilation; the flies themselves also die on the surface in large numbers. Copper sulphate was added to the sewage (830 lb. per million gallons) on four occasions, and at another time bleaching powder in the same proportion; the former had the best effect, but neither was quite satisfactory, and it was found necessary to dig over the top three or four inches of the filter surface in May and again in September to allow the sewage to pass. At the beginning of October the fly nuisance had practically ceased, but the filters were still badly clogged. Caustic soda (1000 lb. per acre) was then scattered over the surface; this broke up the clogging material, and the effluent was found to be heavily charged with organic matter. Notwithstanding the difficulty of keeping the surface of the filter open, the effluent during the summer was more highly nitrified and of better quality generally than in any summer previously. This the observers consider can only have been due to the more even distribution effected by the rotary distributer, with a resulting equalisation of work in the different parts of the bed; the increase in nitrates during May and June immediately following its installation was especially marked. Contrary to some observations that have been made in this country (e.g., those of Dr. George Reid at Hanley), progressive increase in nitrification was found to occur with increase in depth of filtering material; thus in filter No. 361, to which settled sewage was applied at the rate of 1,500,000 gallons per acre, the effluent at 2 feet depth contained 0·31 per 100,000 nitrogen as nitrates; at 4 feet, 0·71; at 6 feet, 0·96; and at the outlet, 8 feet 9 inches, 1·03. The oxygen consumed varied but little, being 3·16 at 2 feet; 3·41 at 4 feet and at the outlet; and 3·81 at 6 feet. Neither did the albuminoid ammonia vary much: at 2 feet it was 0·5186; at 4 feet, 0·5536; at 6 feet, 0·6517; and at the outlet, 0·4706.

Removal of bacteria.—The purifying power of the various types of filter was measured by determining the average numbers of bacteria developing on agar (1) when incubated four days at 20° C.; (2) when incubated 18 hours at 40° C. on litmus lactose agar; and (3) the number of red colonies on litmus lactose agar at 40° C. All the intermittent sand filters showed a removal of over 99 per cent. of all types of bacteria. Of the four contact filters, one which was badly clogged, and in which nitrification was feeble, showed a bacterial purification of 86 per cent.; while its companion, which was in good condition, removed only 0·8 per cent. of the 20° C. bacteria, and only 30·7 per cent. of the total bacteria growing at 40° C. Of the two slate filters (or rather slate beds), the one operated with ordinary sewage removed 60 to 70 per cent. of 20° C. and 40° C. germs, while the one operated with settled fresh sewage showed a removal of about one-third of the total, but none of the 40° C. bacteria. The older trickling filters, of ¼ to 1 inch material, were much more efficient than the newer ones with larger material, 1 inch and upwards.

Bacterial Purification of Water.

A new sand filter has been brought into operation at Lawrence 4½ feet in depth, the size of the grains averaging 0·25 millimetre; this has been worked at the rate of 3,000,000 gallons per acre daily. The Merrimac river water averaged 7400 bacteria per cubic centimetre during 1909, and the filter yielded water containing 100 per cubic centimetre. The old filter, constructed in 1893, having a depth of 4 feet, has been worked at an average rate of 1,250,000 gallons daily; the applied water averaged 7400, and the filtered water 60, bacteria per cubic centimetre. Thus the old filter, operated at a lower rate, gave a bacterial efficiency of 99·2, compared with 98·7 per cent. of the new one. The bacillus coli efficiency of the old filter (presence in 8·6 per cent. of 1 cubic centimetre samples) was much higher than that of the new one (presence in 17·1 per cent. of 1 cubic centimetre samples); the raw water contained bacillus coli in 100 per cent. of 1 cubic centimetre samples.

Purification by the addition of chemicals has been studied in relation to potassium permanganate and calcium hypochlorites. With the former 98 per cent. of the bacteria were eliminated by treatment with 0·5 per 100,000 for four to six hours; larger amounts and longer duration did not appreciably increase the effect. The addition of calcium hypochlorite, equal to 0·1 per 100,000 of available chlorine, for one to two hours, caused a reduction of 99 per cent., and "resulted in an effluent corresponding in bacterial quality with the effluents from the best slow sand filters." In the case of both chemical agents the reduction in number of bacteria growing at the body temperature was less than that of common water bacteria; in 20 to 25 per cent. of the samples treated with hypochlorite the counts at body temperature were actually higher than those at room temperature. This phenomenon of "reversed counts" occurs in a considerable proportion of cases in which the room temperature counts have been reduced below 200 per cubic centimetre by the use of hypochlorites, permanganates, or other oxidisers; but not in samples containing large numbers of bacteria, nor in those where the numbers have been reduced by copper sulphate or other non-oxidising disinfectants. Spore-formers are found in practically the same proportion after, as before, disinfection; but the true significance of the phenomenon cannot at present be stated. It is evident, however, that reliance must not be placed entirely on room temperature counts in estimating the purification effected by hypochlorites. Moreover, in waters so purified a large increase in total bacteria takes place on storage, varying from 100 to 7500 per cent. and averaging 670 per cent.

Among other subjects dealt with in the report are the anaerobic bacteria in milk and the prevalence of infantile paralysis; an inquiry into this disease is still proceeding. The present volume fully maintains the high standard of thoroughness and accuracy that has always characterised the series, and is equal to any of its predecessors in interest.

PLAGUE IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Plague in Odessa.

SINCE the date of my last letter on this subject (published in THE LANCET of June 3rd, p. 1528) the plague infection has reappeared in Odessa, where, it will be recalled, it caused an epidemic of some severity last year. On June 6th (19th) an inhabitant of the town, a woman employed in business, was declared to be suffering from the disease, as shown by the result of a bacteriological examination. Three days later a second case was declared; the patient, a child, occupied the same house as the first case. On July 16th (29th) 3 further cases were seen; 2 of these occurred in the crew of the s.s. *Veronezh*, of the Russian Volunteer Fleet, and the third was an inhabitant of the Moldavanka quarter of the town; one of the former died. The steamer remained in the port for a month and then sailed for the Far East. Finally, a telegram from the Russian Ministry for Foreign Affairs, dated July 21st (August 3rd), states that in the preceding week 5 cases of plague had been recorded in Odessa, with 2 deaths. Presumably these 5 cases include the 3 just mentioned, the details of which are quoted from the Russian medical papers. No further cases occurred in the following week.

Plague in the Kirghiz Steppes.

These now well-known centres of endemic plague are still more or less active. In the *urotchistché* of Uzbek, in the 9th district of the maritime province of the Kirghiz steppes, 4 fatal cases of the pneumonic form of the disease occurred in a single family between June 5th and 23rd (June 18th and July 6th). The infected earth-huts (*zemlianki*) were burnt

and the inhabitants of the settlement, 98 in number, were kept under medical observation for a suitable period. At a date not named, but apparently some time in July, 7 Kirghiz were attacked with plague, and all died, in the *urotohistohé* of Kosum. Kosum is said to be situated in the 1st circle of the Kirghiz Horde, on the frontiers of the Uralsk Province.

From other sources it is learnt that outbreaks of plague occurred in May and June at Oujaly and Saralfyn, in the Narynsk district. In the former, 4 fatal cases—all members of one family—were seen between May 7th (20th) and 27th (June 9th). In the latter, which is 12 versts from Oujaly, 3 Kirghiz, members of one family, fell ill of plague between May 26th and 31st (June 8th and 13th), and all died.

For some time past a medical commission, under the leadership of Professor Metchnikoff, and consisting of Dr. Salimbeni, Dr. Burnet, and Dr. Jamanuchi (the last named from Japan), has been investigating the disease as it manifests itself in the Kirghiz steppes. Their report is said to have been recently completed, though apparently it has not yet been published. From a reference to it in a recent number of the *Vratch*, it appears that the marmot, known in Russian as the *bobak* or *tarbagan*, does not occur in the Kirghiz steppes. It is replaced there by a similar rodent, known in Russian as the *suslik*, which would seem to be also a kind of marmot, though presumably of a different species from the other. In the neighbourhood of Kosai, in the steppes, where plague was epidemic last December (see my letter in THE LANCET of Feb 25th last, p. 534), large numbers of the runs of these animals were found close to the spot where those who had died from plague had been buried. But in no instance were plague bacilli found in the animals, though these were shown to be exceedingly susceptible to plague artificially inoculated. The *susliks* were also found not to harbour fleas; but a small tick (*klestch*) was common enough, occurring particularly behind the ears of the animals. Some of the members of the commission, who still remain in the steppes, are pursuing their investigations into the relation of these animals and their parasites to the spread of plague. Incidentally it is mentioned that investigations were also made into the presence of tuberculous disease in these regions. In 50 per cent. of some 3000 instances in which the skin reaction was taken, the result is said to have been negative—which presumably implies that it was positive in the other 50 per cent. In some places, notably in the Kalmuck bazar near Astrakhan, as many as 75 to 95 per cent. gave positive reactions.

Plague in Adalia.

There has recently been a revival of sporadic plague at Adalia, on the southern shores of Asia Minor, where similar outbreaks have occurred annually for the last few years. The first case was seen on July 4th; the patient was a labourer in a mill; he died the same day. The next case was reported on July 17th; the patient was a sergeant-major in the army, living in the same quarter as the first case; he also died. On July 30th, a third case was reported; the patient was a Kurd, a municipal street-sweeper; he had been ill for two days, and was already dead on arriving at the hospital on the 30th. A fourth case followed on August 1st, and a fifth on the 2nd. All these cases were of the bubonic variety of the disease.

Plague in Muscat.

The following figures are in continuation of those published in my last letter:—

Week ending May 13th	.....	5	cases,	5	deaths.
,, ,, ,, 20th	.....	5	,,	5	,,
,, ,, ,, 27th	.....	3	,,	2	,,
,, ,, June 3rd	.....	0	,,	0	,,

Finally, Muscat was declared free of plague on June 15th.

Plague at Bushire.

Since the last figures were published the following returns have been received from Bushire:—

Week ending May 13th	.....	12	cases,	7	deaths.
,, ,, ,, 20th	.....	24	,,	23	,,
,, ,, ,, 27th	.....	17	,,	16	,,
,, ,, June 3rd	.....	16	,,	13	,,
,, ,, ,, 10th	.....	?	,,	?	,,
,, ,, ,, 17th	.....	9	,,	11	,,
,, ,, ,, 24th	.....	8	,,	?	,,
,, ,, July 1st	.....	0	,,	1	,,

Finally, Bushire was declared free of plague on July 5th.

Plague in Bahrein.

The outbreak of the disease in the Bahrein Islands recently took on a very severe character. It will be recalled that down to May 5th, 30 deaths from plague had occurred there. On May 18th it was reported that 175 cases had been seen down to the 14th of that month. On June 15th a telegram was received from Bushire stating that in the 15 days ending May 29th the mortality from plague in the islands was estimated at about 700 deaths, followed by about 600 others in the "13 days ending June 29th." There appears to have been an error in the transmission of this telegram, the last-named date being obviously wrong, as the telegram was dated June 15th. In the same telegram it was stated that plague was present on the Arabian shores of the Persian Gulf, known as the Trucial coast; that it had been severe at the beginning, but was then declining. A later telegram, dated June 29th, reported that about 300 deaths had occurred in Bahrein during the 15 days ending June 25th. Later telegrams show that there were 110 deaths there in the fortnight ending July 9th, and 10 deaths in the week ending July 16th. No subsequent deaths were reported, and on August 3rd the Bahrein Islands were declared plague-free.

Plague at Basra.

As already reported, 2 cases of plague occurred here on May 6th and 11th respectively. On May 14th a third case followed, the patient being a baker, living close to the other cases. About the same time it was reported from Basra that ships' captains arriving there from ports on the Trucial coast confirmed the existence of an epidemic of plague on that coast, of which mention was made above. No details of that epidemic have, however, as yet been received. On May 19th and 22nd 2 more cases occurred in the infected quarter of Basra, and another one on May 31st. There were 4 deaths in this small outbreak at Basra.

Constantinople, August 19th.

THE BRITISH DENTAL ASSOCIATION.

ANNUAL MEETING.

WE lately published[1] an account of the meeting in London of the Eleventh Annual Session of the International Dental Federation, which by gathering annually in various capitals arranges for the meetings every five years of the International Dental Congress. This year the delegates were the guests of the British Dental Association, which held its thirty-first annual meeting at the University of London on August 3rd, 4th, and 5th, with special receptions by the Royal College of Surgeons of England at its building, and at the Hotel Cecil and other places arranged for by the large and important metropolitan branch of the association.

As the new President of the association for 1911–12, Mr. W. B. Paterson, senior dental surgeon at St. Bartholomew's Hospital, also is the President of the International Dental Federation, it was but natural that distinguished representatives of the profession from abroad should linger in our metropolis and make common cause with British dentists in discussing many important questions regarding the education of our dental *confrères* and the part they can take in State provision for better oral conditions among the young, the poor, and the great national services.

Greatly appreciated by dental practitioners was the interest shown by the President of the Royal College of Surgeons of England, Sir Henry Butlin, and the Council of the College who placed at the disposal, not only of the International Federation, but also of the British Dental Association, the building of the College, with its unrivalled museum, so rich in odontological specimens. The coincidence of the international meeting with the annual meeting of the British body, and the fact that the President of the Federation was also President of the Association—having been during 21 years successively honorary secretary and chairman of the representative board—accounted for an annual meeting this year in London which was by far the largest ever held. With a total membership now of about 2020, there were in London at least 1000, including visitors and ladies; and as the association comprises a good majority of all medically qualified dentists, the annual deliberations of the body must necessarily command serious attention.

[1] THE LANCET, August 19th, p. 529.

Among the formal annual reports made to the meeting that of the representative board dealt at some length with such questions as the need of better and more precise legislation in the interests of both the public and the profession, as shown by the opinions of high judicial authorities, the revelations of the recent Blue-book on unqualified practice, and the well-known great increase of an amount of irregular and totally incompetent "dentistry" never contemplated by the promoters of the present Dentists Act or by Parliament when it was drafted; also the position of the profession in assisting with the examination and treatment of school children under recent enactments.

Dental Treatment of School Children.

Upon the latter important matter, in which the coöperation of dental and medical practitioners is acknowledged to be essential, the board report said:—

As a proof that the importance of dental treatment is recognised by the highest authorities, it is satisfactory to be able to point to the special chapter on the subject in the Second Annual Report of the Chief Medical Officer of the Board of Education, in which several recommendations of the association are adopted. An experimental clinic has been started by the London County Council in connexion with the Poplar Hospital, and a half-time dentist appointed; and at Deptford a clinic, which owes its inception to private munificence, receives L.C.C. school children. No system of dental treatment at any of the large general hospitals on the lines of the experimental scheme of medical treatment has been instituted, and as nearly all the dentists attached to such hospitals are of opinion that this method is inadvisable, it is unlikely that anything of the kind will be attempted. The views of the association on the best means to be adopted have been submitted to representatives of the L.C.C. by members of the committee appointed for the purpose. Assistance has also been given to the Medical Committee of the Wandsworth clinic in drawing up plans for the inclusion of dental treatment, and it is hoped that such treatment will before long be instituted. Similar assistance has been afforded to the dentists of Norwood in connexion with the medical clinic in that district, and has also been submitted for the consideration of the Mid-Kent Organisation Committee.

In the provinces dental clinics have been started at Bradford and Norwich, a whole-time dentist will shortly be appointed at Coventry, and other towns are in process of making arrangements; an interesting experiment is being tried in West Dorset, the first strictly rural district to attempt dental treatment, where an itinerant whole-time dentist has been appointed. It is to be hoped that more may be done in the near future to inculcate the principles of hygiene of the mouth and prevention of dental caries by the organisation of instruction to teachers in training colleges, the regular inclusion of dental hygiene in school teaching, and lectures to parents.

Upon this subject the President (Mr. Paterson) in his inaugural address said:—

Long before Mr. John Burns passed his Medical Inspection Act of 1907 this association had been engaged in the collection of statistics relative to the condition of the teeth of the children of the public elementary and primary schools in various parts of the kingdom; and I have reason to believe that the results of our investigation were not without their uses at the Local Government Board in the preliminary considerations preparatory to the passing of that very important Act—an Act which is already working a silent revolution throughout the country, and one which in the future will have very far-reaching and beneficial effects upon the public health. Sufficient medical inspection of school children's teeth has now been accomplished, and the need of dental treatment is clearly and unmistakably indicated. We know that go where you will throughout the kingdom the teeth of the children require to be saved.

On the subject of the public dental hygiene for schools, the question of the day is, Which is the simplest and best way of setting about the business? In England Cambridge abroad Germany and Sweden, point the way. The school dental clinic appears to be the simplest, best, and most economical means at command. Professor Jessen tells me that they have already established 120 school clinics in the leading cities and towns of Germany. We have, in our association, for long pressed forward the claims of the school clinic, and the only barrier to progress has been the difficulty of finding the money, but now that the State Insurance Bill has turned all men's thoughts towards the financial aspects of public health, we may hope soon to see that barrier removed.

Our honorary secretary, Mr. Norman Bennett, who takes a very keen interest in all dental matters which relate to public health, deserves a special word of recognition and thanks. He has had an active time since the Inspection Act came into force answering questions addressed to our association by various public bodies on the subject of school dentistry and dentists. My knowledge of his answers leads me to say that he has his finger on the pulse of the dental hygiene movement, and that our interests are quite safe in his hands. I am glad of this opportunity of paying my tribute of respect to my colleague's sagacity in such matters, as many of them, owing to his innate modesty, never come within your view.

Whilst doing what we can as an association to direct public attention to the question of dental hygiene at home, we have not neglected the opportunity presented by the Dresden Hygiene Exhibition of enlightening our brethren abroad on our doings. We have recently sent to the British Section of that important exhibition a small and simple yet useful exhibit of the dental outfit of a Poor-law school clinic, and also copies of the association's literature, charts, and case-books in connexion with the care of children's teeth. I am told by those who have seen the exhibition that if Dresden was always worth a visit for art and music, it is trebly so now that a health exhibition is included.

The Care of the Teeth in the Services.

A considerable part of the President's address was devoted to the position of dentists in the naval and military services. As the official representative of the Dental Association upon the Army Medical Council's Advisory Board, and thus speaking with authority and experience, he said:—

You may remember how the British Dental Association was hurriedly called upon to arrange a dental service for the troops in the South African war. This service was so successful that it was increased in numbers during the war and maintained for some years after the war in the home establishment. Throughout its existence I constantly read the records of its work and the good reports of commanding officers, principal medical officers, and the complimentary official reports of three successive directors-general of the Army Medical Department. We know the subsequent turn of events. How during the piping times of peace the service of contract dental surgeons was allowed to languish. How it was made to appear superfluous, and finally to cease. What would happen to our troops in war, or in training manœuvres lasting for, let us say, a period of not less than two months, with no other dietary than that provided in a war ration of "bully beef and biscuit"?

In the navy matters are slightly better. A few contract dental surgeons are employed at the chief naval bases. But the service offers no permanency, and is crippled by a Treasury with a tight purse. How differently has the question of army dentistry been dealt with in the United States of America. There dentistry has been placed upon a permanent footing in connexion with the Army Medical Corps. By the new Act, dental surgeons now take rank as first lieutenants with pay and allowances accordingly. The regular pay is £400 a year with quarters, or in lieu of quarters £7 a month. There is longevity pay, amounting to a 10 per cent. increase on the regular pay, every five years for 20 years; and there is extra pay for foreign service of 10 per cent. on full pay.

Various Matters.

At the general meeting of members the principal subject of discussion was the action to be taken respecting the introduction of fresh legislation in amending the present law as to dental registration, practice, and the protection of title. Although a draft Bill has for some time occupied the attention of special committees, and had been remitted by referendum to the whole association, it was decided after a full discussion to again remit to the representative board the whole subject for further consultation and redrafting.

The retiring President, Mr. W. H. Waite of Liverpool (who was unfortunately not able to be present), was elected a Vice-President, and the following were elected honorary members: Dr. W. H. Williamson of Aberdeen, a former president; Mr. J. Dennant of Brighton, joint founder with Mr. Waite of the benevolent fund; Dr. G. V. Black of Chicago, who obtained the I. D. F. Miller prize; Professor O Walkhoff of Munich, president of the International Dental Congress in Berlin in 1909; Dr. E C. Kirk, Dean of the Faculty of Dentistry in the University of Pennsylvania and editor of the *Dental Cosmos;* and Professor E. Jessen of Strasburg, the pioneer of school clinics.

At the annual dinner at the Hotel Cecil on Thursday evening, among distinguished visitors were Sir Frederic W. Hewitt, Sir A. Pearce Gould, Sir R Havelock Charles, Professor Sidney H. C. Martin, Dr. Norman Moore, and many foreign guests. There were many provisions made for the entertainment of ladies by a committee presided over by Mrs. Paterson, which included a special ladies' dinner and a joint entertainment at the hotel after the banquets.

On Friday great interest was taken in papers on scientific and practical subjects (printed in advance and usually taken as read, so allowing of good discussion), and there were many demonstrations and exhibits in the halls of the University of London.

A feature of the meeting was a select museum, including orthodontic models, clinical cases, and specimens of students' work from American schools. A number of specimens from the museum of the Royal College of Surgeons of England on periodontal diseases were demonstrated.

The invitation of the Scottish Branch to hold the 1912 meeting in Glasgow at the University, on August 7th, 8th, 9th, and 10th, was cordially accepted.

ASYLUM REPORTS.

Nottingham City Asylum at Mapperly Hill (Annual Report for the Year 1910).—At this asylum the average number resident for the year was 818. In addition to the number resident at the end of the year 20 females were boarded out at the Storthes Hall Asylum. The admissions numbered 177 and were above the average as regards the males and below the average as regards the females. The character of the cases which were admitted was for the most part of an unfavourable type, having regard to the prospect of recovery, 6 being imbeciles, 23 general paralytics, 12 senile cases, 15 incurable dements, and 8 cases in which

insanity had lasted over 12 months when the patients were admitted. It would appear that alcohol was the cause of the illness in 25·4 per cent., mental stress and poverty in 23·6 per cent., hereditary predisposition in 14·8 per cent., old age in 7·1 per cent., and influenza in 4·1 per cent. of the admissions. Eighty-seven patients were discharged, and of these 72 were recovered, being 42·6 per cent. of the direct admissions. In 93 per cent. of the recoveries the duration of the illness before admission had been under three months. There were 78 deaths, being a percentage of 9·5 on the average number resident. Nineteen deaths were from general paralysis and 18 from phthisis. Post-mortem examinations were made in 93 per cent. of the deaths.

Staffordshire County Lunatic Asylum at Stafford (Annual Report for the Year 1910).—The daily average number resident was 874. At the end of the year there were no vacancies for women patients, and it appears that further accommodation will soon require to be provided. There were 241 admissions, and of these 11 men and 16 women had previously been under care. The discharges numbered 134, of whom 33 men and 31 women had recovered, giving a percentage of 31·68 of the cases admitted. There were 101 deaths, giving a percentage of 11·55 of the average number resident. Twenty patients died under three months' residence. Post-mortem examinations were held in 63 cases.

Staffordshire County Lunatic Asylum at Burntwood, near Lichfield (Annual Report for the Year 1910).—The number of patients received at this asylum, together with the low death-rate, has obliged its authorities to transfer some of the patients to the other asylums of the county, but, nevertheless, there are 26 patients in excess of the number for which the asylum provides statutory accommodation. The average daily number on the registers was 889. Admissions numbered 281. One hundred and fifty-seven persons were discharged during the year, and of these 71 were recovered. There were 84 deaths, giving a percentage of 7·31 of the total number under treatment.

Staffordshire County Lunatic Asylum at Cheddleton (Annual Report for the Year 1910).—The average daily number on the registers was 977. At the end of the year the female side of the asylum was full. There were admitted 269 cases, of whom 185 were already chronic. Among the non-recoverable cases there were 33 general paralytics, as against 20 admitted during the previous year. Eighty-three persons were discharged, and of these 57 were recovered. Deaths numbered 125, 32 being from tuberculosis, 13 from general paralysis, 15 from pneumonia, 15 from dysentery, 1 from enteric fever, and 37 from chronic degenerative disorders. Dr. W. F. Menzies, the medical superintendent, is of opinion that the type of dysentery obtaining at the asylum is acquiring increased virulence. A common predisposing cause has been observed to be sudden changes in temperature, for warm weather preceded by cold disposes to bacteriological changes in food-stuffs, while cold weather after warm tends to produce chills among the patients. The vogue of open windows, however advantageous to the general asylum population and to tuberculous cases in particular, is bad for dysenterics. It is certain that a large number of persons are carriers, and it will probably be some time before these are all discovered by bacteriological and clinical research. During the year all the dysenteric cases have been examined bacteriologically, and perhaps the outstanding result has been the variety of micro-organisms found. The Flexner bacillus proved to be the organism most commonly present. As regarding treatment, sera and vaccines have been used, but it is plainly too early to form a judgment of their value. Dr. Menzies is now treating the patients by draughts and enemata of potassium permanganate solution.

West Sussex County Asylum at Chichester (Annual Report for the Year ending 1910).—The average daily number on the registers was 763. There were 154 admissions. Of the females admitted 53·8 per cent. were regarded as possible or probable recoveries, while of the males admitted in 65·56 per cent. the chances of recovery were considered to be very remote. Of etiological factors heredity, so far as could be ascertained, was present in 39·74 per cent. of the cases. Sixty-three patients were discharged, of whom 42 were recovered, the rate on the direct admissions being 30·65 per cent. In nearly all the recoveries the duration of the attack on admission was less than six months. There were 80 deaths, and necropsies were held in all cases except two. The death-rate on the daily average number resident was 10·48 per cent. Seventeen deaths were due to tuberculous disease and 18 to general paralysis.

THE TREATMENT OF WOUNDED SOLDIERS IN TIME OF INVASION.

WE have received from a correspondent at the recent manœuvres of the 2nd London Division of the Territorial Force at Shorncliffe the following interesting and instructive account of the working of the medical arrangements, with pertinent remarks on a few lessons to be drawn therefrom. Our correspondent writes:—

The Forces Engaged in the Sham Fights.

Few medical men have any clear idea of how wounded soldiers would be treated in this country in the event of invasion, and therefore an account of what might be described as as a full dress rehearsal, which recently took place at Folkestone, may be of special interest to members of the medical profession, as it was on a much larger scale than has ever yet been attempted. The 2nd London Division of the Territorial Force, some 11,000 strong, under Major-General Vesey Dawson, C.V.O., were encamped in the neighbourhood of Shorncliffe, and as on several days there were sham fights it was decided to have a great many imitation casualties on one day, to give practice to a field ambulance and the members of any voluntary aid detachments (V.A.D.'s) who might be willing to coöperate. A field day had been arranged for Friday, August 18th, between two forces—"Whiteland" and "Greenland"—in the neighbourhood of Cæsar's Camp. As the "Whites" were on the south near Folkestone it was decided to fall out the casualties from this force. "White," as a matter of fact, was defeated, and the number of casualties, if bullets had been used, would have been at least as many as were actually dealt with. Colonel Andrew Clark, K.H.S., administrative medical officer 2nd London Division, was in charge of arrangements of the R.A.M.C. (T.) and Lieutenant-Colonel J. W. T. Gilbert, of Folkestone, of the V.A.D.'s. Each casualty, as he fell to order, was to have attached to him a tally giving a brief description of the injuries he had received, and although this arrangement was not carried out quite as it was intended, nearly 100 officers and men became casualties.

Field Ambulance Work.

The wounded received first aid from the regimental stretcher-bearers, superintended by the regimental medical officers. They were then carried back (or walked back if the injuries described permitted it) until the bearers of the 6th London Field Ambulance were met with. These took over the cases and proceeded to one or other of the two advanced posts of the ambulance, which were situated respectively at Wingate Farm and the "Valiant Sailor." Here they were attended to by the medical officers and men and, when necessary, given beef-tea, &c. They were then placed in the ambulance wagon and a spare motor-car, and taken to the Tent Division (formerly called the Field Hospital) of the Field Ambulance, which was situated about a mile in the rear at Lime Kiln Farm, where there were a fully equipped operating tent and a few bell tents. Here the patients were placed in the bell tents, and urgent operations would have been performed if necessary.

Rest Camps.

Information was then received that severe fighting was proceeding elsewhere, and the Field Ambulance was ordered to evacuate all wounded and march. In the same field as the Tent Division, but at a supposed distance of three miles, there was established the first rest camp of the V.A.D.'s, whence the men of the male V.A.D.'s set off with stretchers to fetch in all serious cases, the others walking (as they would have to do on active service). As the wounded arrived they were taken charge of by a medical man and members of the female V.A.D.'s. Their dressings were readjusted if necessary, and they were taken by carts to the second rest camp, where bivouacs were erected and where they remained until transport was

available. The third rest camp was established at the Black Bull-road Board School, and was of the nature of a temporary hospital. An excellent operating theatre fully equipped was established, and the class-rooms were turned into wards. A careful examination of this rest camp showed that nothing had been neglected; the sanitary veniences were excellent, and the way in which beds and operating theatre had been improvised showed that we can place great reliance on some, at least, of the V.A.D.'s. Each detachment appeared to have its fully trained nurse, and the members carried out her directions faithfully. There was a lack of medical men present, but no doubt plenty would be available if the occasion were a real one. There was no lack of trained cooks, and even every visitor was supplied with hot soup.

In actual warfare the more seriously wounded patients would have been transferred from this temporary hospital to an ambulance train at Folkestone and sent thence to the Territorial General Hospitals, which would be established in London at various institutions, such as the London University or the Prudential Buildings; but as each general hospital has to have at least 520 beds the buildings which are suitable and available are few.

Observations on Various Points.

A rehearsal on this scale allows one to obtain some idea as to how matters would proceed in a real action, and to point out details in which alteration is needed. First, as to the field ambulance: owing to lack of special knowledge of map-reading on the part of its officers and to the absence of compasses, the Field Ambulance took a wrong road, and was therefore very late in arriving at its appointed stations. Other difficulties arose from the fact that for economy the Field Ambulance receives in peace time less than one-third of its mobilisation equipment and forces, and even then its general service wagons and forage cart are not the real things, but hired carts, which are much less convenient. Again, the distribution of the available officers should be such that at the Tent Division at least sufficient officers to undertake operations should be present. The Territorial Royal Engineers fixed up telephonic communication between the three stations of the Field Ambulance, but as this could rarely happen in warfare the Field Ambulances should be put in possession of better means of intercommunication than they at present possess.

Secondly, as to the V.A.D.'s. It was absolutely astonishing to see how well the various detachments (some St. John Ambulance and some Red Cross) which came from all parts of Kent worked together, and their cleverness in improvising whatever came to hand was notable. But a few points need criticism. Four or five nurses are not required to each cart of wounded; men with gunshot wounds would not usually be able to stand up to be dressed, and lightly wounded should be made to walk. But these points are, of course, of minor importance.

Finally, in all cases of sham fights one or two real accidents are to be expected, and that these may be passed back without delay to the military hospital, taking precedence of imitation casualties, they should have special tallies. On this occasion one such case was overlooked.

BRITISH MEDICAL BENEVOLENT FUND.

AT the August meeting of the committee 15 applications were considered, but only very inadequate help could be given as the treasurer reported that the grant account was already overdrawn to the extent of £90. Grants amounting to £96 were made to the most distressing of the cases, so that the total deficit is now nearly £200, and the reserves will have to be still further drawn upon. Numerous appeals are always received during the last quarter of the year, and the committee therefore urgently begs for support to enable them to be dealt with. Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W. Appended is an abstract of the cases assisted:—

Widow, aged 44, of L.R.C.P., L.R.C.S. Edin. Husband's savings exhausted by a five years' illness, ending in death, and applicant's only income is the interest on the money received from a small life policy. Tries to make both ends meet by taking boarders, but at present has none. Two children, aged 10 and 9, the elder at an institution and the younger recently elected to one. Voted £10.

Widow, aged 47, of M.R.C.S., L.R.C.P. No income, no children, and hopes shortly to find a suitable post. Voted £5.

Widow, aged 37, of M.R.C.S., L.R.C.P. Two children, aged 6 and 4, and dependent on a small monthly allowance from a sister and occasional earnings from sewing and painting. Has been obliged to part with most of her furniture. Voted £10.

Widow, aged 41, of M.B., C.M. Aberd. Quite unprovided for at husband's death a few years ago. Endeavours to support herself by letting lodgings. Two children, one at an institution. Relieved four times, £34. Voted £12.

Daughter, aged 63, of late M.R.C.S., L.S.A. Maintained herself as a dispenser until no longer able to find work as such, and now dependent on small occasional earnings by wood carving and slight help from a sister. Relieved five times, £50. Voted £10.

Daughter, aged 60, of late F.R.C.S. Has acted for many years as companion, housekeeper, &c., but for some time past has not been able to obtain a suitable post, and has consequently spent her small savings. Relieved twice, £10. Voted £2, and case to be reconsidered at next meeting.

L.R.C.P. Edin., aged 66. Has been incapacitated by ill health for the last two years, and is dependent on help given by a brother. Children unable to help. Relieved twice, £36. Voted £18.

Daughter, aged 68, of late L.S.A. No income and in very feeble health. Relieved four times, £40. Voted £2, and case to be reconsidered at next meeting.

Widow, aged 55, of L.R.C.P. Irel. Since husband's death has maintained herself by nursing, &c., but has been in bad health for some time past; is now in arrears for rent, and has been obliged to dispose of some furniture and clothing. Relieved twice, £20. Voted £5, and case to be reconsidered in October.

Daughter, aged 55, of late M.R.C.S. No income, and practically incapacitated. Relieved nine times, £85. Voted £12.

Widow, aged 54, of L.R.C.P., L.R.C.S. Edin. Receives slight help from relatives, and earns a few shillings a week by writing for newspapers. Two children, of whom the elder will soon be self-supporting. Relieved six times, £62. Voted £10.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Public Health of Calcutta.—In presenting his report for 1910 Dr. T. F. Pearse, the health officer of Calcutta, mentions that in previous reports the population of the city had been estimated on the supposition that an increase had taken place since the Census of 1901, and in the same ratio as in the previous decennial period. When the Census was taken, however, in the present year it was found that actually a considerable decrease had occurred, owing to movement of population into the suburbs. The population, as now estimated for 1910, is stated as 886,000, but the rates of mortality, &c., have been calculated on the population of 1901—viz., 847,796. The slight increase in the past nine years has been due to immigration, there having been no natural increase, but, on the contrary, an excess of deaths over births to the extent of 145,634 during the ten years. The birth-rate was 19·3, a very low figure compared with that for India generally (38·64, mean of the last quinquennium), but in Calcutta females constitute only one-third of the population. The total death-rate was 27·9 per 1000, the lowest recorded for over twenty years; corrected according to the new Census returns, it was 26·7. The reduction is chiefly due to diminished mortality from cholera, plague, and small-pox, and applies to every district in the city. It is noteworthy, however, that the death-rate in the suburban area was 38·0, as compared with 24·8 per 1000 for the urban area, the former having shared in the general improvement to a much smaller extent than the latter. The mortality from cholera (2·13) was the lowest recorded for ten years. Plague also was much less fatal than in any year of the decennium, the death-rate being only 1·4 per 1000. In 1909 there had been a severe outbreak of small-pox; in 1910 the city was almost free from this disease, only 48 deaths having been recorded. It is noted that the age for compulsory vaccination has now been reduced to six months, which ought to reduce the infant mortality in the future. Beri-beri had been prevalent in 1909, and the outbreak continued through the spring of 1910, the total deaths having numbered 171, of which 143 occurred in the four months January to April. Hindus suffered more than Mohammedans, and females more than males. Dr. Pearse does not subscribe to what he calls "the extraordinary theory" that this disease arises from deficiency in the dietary due to the process of milling of the rice and wheat used by the Bengalis. "It does not explain the sudden outbreak at the Alipore Reformatory, and its extension over the city, the subsequent subsidence, and the sudden recrudescence of a still more severe character in the following year (1909), with

a much reduced incidence during 1910. The rice and wheat used by Bengalis have been prepared in the same manner for many generations." Enteric fever appears to be on the increase, but probably this is due to improved diagnosis and the fuller inquiries now made in fever cases. There were 330 deaths, chiefly in the northern part of the city. The ratio is 0·38 per 1000. Malaria has been declining since 1905, the mortality ratio being now only 1·7 per 1000, but there was greater prevalence in suburban Calcutta than in the northern half of the old city. Tuberculosis (chiefly phthisis) caused a mortality of 2·3 per 1000, the incidence on females (3·2) being much greater than on males (1·8). There is little variation from recent years. Dr. Pearse thinks that the chief hope for any reduction lies in improved sanitary conditions, especially in freer ventilation for dwellings; he recommends the establishment of tuberculin dispensaries. The drinking water-supply for Calcutta is filtered through sand-beds at Pulta. The total bacteria found were generally below 100 per cubic centimetre; bacillus coli could be detected in from 1 to 5 c.c. generally, but in the drier months not in 20 c.c. The construction of tanks for storage of water previous to filtration may be taken into consideration. Dr. Pearse draws attention to the very dangerous and out-of-date method of washing the sand for filtration that is still practised; "coolies stand waist deep in an underground tank and stir up the dirty sand in unfiltered river water." This procedure is inexcusable in the capital city of the Indian Empire, and might at any time lead to dangerous contamination of the water. Mechanical sand washers should be provided. Dr. Pearse also recommends the construction of additional sedimentation tanks. Much good work appears to have been done by a female sanitary inspector, who has been employed as an experimental and temporary measure since 1908. It appears, however, that the corporation hesitates to make the appointment a permanent one. This is to be regretted. The great value of these officers is now thoroughly recognised in this country, and in the East there is even greater scope for their employment among the female population. Other important sanitary recommendations made by Dr. Pearse are the construction of model dwellings for the poor, clearance of insanitary areas, improvement of lines of communication, and the provision of a better supply of filtered water for the interior of the native quarters. The sanitary charge of a huge city like Calcutta is, indeed, a task of the greatest difficulty.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Tottenham Education Committee.—Dr. J. F. Butler-Hogan's school report for the year 1910 lays great stress upon the value of the feeding of necessitous school children, but raises the question of the supply of the right kind of food, suggesting the provision of a central cookery depôt from which food could be supplied to all places where meals are served. This would secure an improvement in the quality of food provided, and do away with the possibility of invidious comparison of one district's cooking with another. Of all children for whom medical treatment was considered necessary, 63 per cent. are reported as having received professional attention. The percentage varied in different schools, and even in different departments of the same school, very much in this respect depending upon the cordiality and energy of the teacher's coöperation. Reviewing the whole matter, Dr. Butler-Hogan continues that it is practically impossible for the cases most seriously needing treatment to obtain it, and writes: "It is those diseases which are most serious for the children, which interfere most with attendance, and therefore with the school grant, that are unfortunately left untreated, owing, in many instances, to the negligence of the parents, but often through their sheer inability to procure, in any form, the necessary medical attendance." These considerations lead Dr. Butler-Hogan to consider in detail the whole question of treatment of school diseases, and to discuss from every point of view the question of supplying special treatment in a "school clinic." The report outlines the conditions necessary for the establishment of such a school clinic, these being quoted largely from the report of Dr. L. A. Williams, school medical officer of Bradford, pointing out that objections to such clinics are purely theoretical, and somewhat imaginary. The discussion is thorough and should prove valuable both to medical officers of schools and members of education authorities.

County Borough of Brighton.—The annual report for 1910 of Dr. Duncan Forbes and Dr. J. Lambert, school medical officers, shows that the number of children inspected in Brighton was 6273, and of these 2312 were found to be in need of some form of medical advice or treatment. An interesting survey of the methods available for the treatment of defects shows that a large percentage of children suffer from ailments which are not treated, as a rule, by private practitioners—for example, children suffering from ringworm of the scalp, those in need of spectacles, and those requiring the removal of tonsils and adenoids. It is pointed out that the majority of children requiring spectacles, or the removal of adenoids and tonsils, "are patients of practitioners doing large practices amongst the poor. Even if those practitioners cared to specialise in the required directions, the parents could not afford to pay them adequately for their work. To make it worth doing, therefore, the Education Committee would need to pay a part, if not the whole fee." A consideration of these facts led to a meeting of the local branch of the British Medical Association on Nov. 18th, 1910, when details of a scheme for treatment of school diseases suitable for Brighton were laid before members of the elementary school subcommittee. This meeting dealt with a larger scheme, but a small school clinic is in the fifth year of its existence in Brighton, and is held once weekly on Tuesday afternoons, at 5.30, in a room of the special school. The conditions treated are diseases of the skin and scalp, verminous conditions, and eczema; in addition, blepharitis, conjunctivitis, and certain other conditions are dealt with. Cases of other diseases are sent down for examination by teachers, but these are more frequently dealt with at the Public Health Office. These are the classes of case found to be most neglected in ordinary school work everywhere, and for which ordinary agencies do not suffice. When we add to these the cases previously mentioned, it would seem that there is a distinct field for the clinic quite apart from the ordinary province either of hospital work or private practice. Moreover, the need for dental treatment makes the necessity for the clinic much more pressing. An interesting experiment is that of training girls in domestic work in a model home in which several of the teachers reside, thus securing actuality in the conditions. The girls are required to carry out the whole of the housework, and it is expected that the experience gained will be very valuable in enabling them to obtain employment promptly on leaving school and in equipping them for their own home duties in the future. Investigations have been carried out during the year on the prevention of dust in schools by the application of oil preparations to the floor. The exposure of culture plates has demonstrated that the use of such preparations is a very great improvement upon the ordinary methods of "cleansing" not only floors but furniture. Another experiment is the provision of a special class for "intermediate" children whose development is between backwardness and actual mental deficiency. More elaborate subdivision and special grouping of children are required in school work, and every experiment in this direction is very valuable. It is these intermediate children who are the difficulty, as also in another way are the "semi-deaf" and the high myopes. None of these groups can be satisfactorily taught either in the ordinary or in the special classes; attempts to separate them are therefore particularly helpful.

City of Birmingham Education Committee.—Dr. G. A. Auden's report contains an interesting survey of the ameliorative agencies which have to do with child life, both before and during school age. These include infant health supervision in all its forms, one of them being a guild of mothers, where meals are provided for expectant mothers, and where the children are carefully looked after at birth. During school age there are the special care committees, established in connexion with four schools (voluntarily), the Women's Settlement, and the National Union of Teachers Children's Charity Fund. A list is given of the general curative agencies, hospitals, dispensaries, &c., also of special educational institutions and general ameliorative agencies (among these sanatoriums, the Charity Organisation Society, and a police charity), also after-care committees. The medical officer points out in urging the establishment of care committees, as they already exist in London, that all of these nstitutions affect the schools and should be grouped and coördinated with the schools by means of the care committee organisation. It is also stated that considerable as

the great stream of charity implied by all these agencies is, there are yet great gaps, as, for instance, in the treatment of tonsils and adenoids, defective teeth, ringworm, and eye troubles. The care committees by supplying the coördinating mechanism would make it possible to fill up these gaps, and, as the medical officer says, "would go far in supplying the initial coördination, which is necessary, and would allow the problem to be attacked from the point of view of the home." It must be remembered, however, that in London, where care committees are already established, attempts on the part of the care committees at coördination have not been very successful, and can only be effectual if the school clinic is added—that is to say, the school clinic appears the centre around which all the various ameliorative agencies must be coördinated, the care committee being merely the mechanism bringing the agencies to that point. Voluntary institutions can, in fact, be best used in association with these committees. Experiments on dust prevention in schools have been carried on in Birmingham, and their result points strongly in the direction of the value of oil preparations applied to the floors. A good feature in Birmingham, which other authorities might well copy, is the provision at Floodgate-street council school of a well-equipped school bath. The excellent photograph reproduced gives one a very pleasant impression, as does also, by the way, the picture of the combined hammock for use in infant schools for the "baby room."

East Suffolk County Education Committee.—Interesting comparisons of different parts of the county as regards clothing, nutrition, and defects are made, and some important differences in measles as between town and country school populations are brought forward.

County Borough of Hastings.—The report of the schools in Hastings is chiefly remarkable for consisting only of three-quarters of a page of print. 2770 children were examined, but no special school medical information is given beyond a bare recital of figures.

Great Yarmouth Education Authority.—The table by the school medical inspector, Dr. H. W. Harding, gives an instructive comparison between height and weight and standard for different age groups. Superior physique is found in the superior standard, and this Dr. Harding attributes to higher standard of home life, implying in this "all details entering into the boys' surroundings while out of school."

Hull Education Committee.—By October, 1911, the medical officer reports that the whole of the children attending school will have been inspected. In 1910 18 824 children were examined, 4996 notices to parents regarding treatment issued, but the result was only recorded in 954 cases. A medical register in each department would secure a more adequate record. Some interesting statistics of nutrition are tabulated.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8146 births and 6368 deaths were registered during the week ending Sept. 2nd. The revised estimate of population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had steadily increased from 11·8 to 21·2 in the seven preceding weeks, declined to 20·6 per 1000 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these towns averaged 16·3 per 1000, while in London during the same period the mean annual death-rate did not exceed 15·3 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 10·4 in Northampton, 11·4 in Barrow-in-Furness, 11·6 in Leyton, and 11 9 in Croydon, to 29·8 in Wigan, 31·4 in Bolton, 33·8 in Burnley, and 36·8 in Stoke-on-Trent. The 6368 deaths from all causes in the 77 towns last week were 200 fewer than the number recorded in the previous week, and included 2617 which were referred to the principal epidemic diseases, against numbers increasing from 268 to 2900 in the nine preceding weeks. Of these 2617 deaths from the principal epidemic diseases no fewer than 2461 resulted from infantile diarrhœa, 58 from whooping-cough, 35 from diphtheria, 34 from measles, 21 from enteric fever, and 8 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 8·4 per 1000, against 8·8 and 9·4 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had increased from 70 to 2714 in the nine preceding weeks, declined last week to 2461, and caused the highest annual death-rates of 15·3 in Bolton, 16·0 in Grimsby, 16·4 in Bootle, 16·6 in Burnley, and 21·3 in Stoke-on-Trent. The deaths referred to whooping-cough, which had been 46 and 68 in the two previous weeks, declined to 58 last week, and included 16 in London and its suburban districts, 5 in Liverpool, 4 in Newcastle-on-Tyne, 3 in Preston, and 3 in Sheffield. The fatal cases of diphtheria numbered 35, and were equal to the average number recorded during the five preceding weeks; 10 deaths were registered in London, 5 in Liverpool, 4 in Bristol, and 3 in Birkenhead. The deaths attributed to measles, which had been 59 and 54 in the two previous weeks, further declined last week to 34, and was the lowest number recorded in any week of the current year; 6 deaths occurred in London, 6 in Bolton, 5 in Manchester, and 3 in Nottingham. The deaths from enteric fever, which had been 11 and 18 in the two preceding weeks, further rose to 21 last week, and included 3 in Wigan, 2 in Stoke-on-Trent, and 2 in Hull. The 8 fatal cases of scarlet fever was the lowest number recorded in any week of the current year. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1442, 1388, and 1352 in the three preceding weeks, had further declined to 1327 on Saturday last; 168 new cases of this disease were admitted to these hospitals during the week, against 159, 149, and 132 in the three previous weeks. These hospitals also contained at the end of last week 723 cases of diphtheria, 231 of whooping-cough, 161 of measles, and 57 of enteric fever, but not one of small-pox. The 1529 deaths from all causes in London last week showed a decrease of 116 from the number returned in the previous week, and included 73 which were referred to diseases of the respiratory system, against 97 and 85 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 184 and 152 in the two preceding weeks, further declined to 147 last week, and 322 inquest cases were registered. The causes of 35, or 0·5 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in Sheffield, Bristol, Bradford, Hull, Newcastle-upon-Tyne, Nottingham, and Portsmouth, and in 48 other smaller towns. The 35 uncertified causes of death last week included 5 in Liverpool, 3 in Birmingham, 3 in Gateshead, and 2 each in Reading, West Bromwich, Coventry, Burnley, and South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 752 births and 564 deaths were registered during the week ending Sept. 2nd. The annual rate of mortality in these towns, which had been equal to 14·2 and 15·5 in the two preceding weeks, further rose last week to 17·2 per 1000. During the first nine weeks of the current quarter the annual death-rate in these Scotch towns averaged 14·8 per 1000, and was 1·5 below the mean rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 13·4 and 15·4 in Aberdeen and Edinburgh, to 20·1 in Leith and 20·3 in Perth. The 564 deaths from all causes in the eight towns last week exceeded by 55 the number returned in the previous week, and included 134 which were referred to the principal epidemic diseases, against 99 and 114 in the two preceding weeks; of these 134 deaths, 113 resulted from diarrhœa, 10 from whooping-cough, 5 from diphtheria, 4 from measles, 1 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 4·1 per 1000, the mean death-rate last week from the same diseases in the 77 English towns having been 8·4. The deaths attributed to diarrhœa, which had increased from 33 to 88 in the four preceding weeks, further rose last week to 113, and included 96 of infants under two years of age; 72 deaths occurred in Glasgow, 11 in Dundee, 8 in Edinburgh, and 6

each in Paisley, Greenock, and Perth. The 10 fatal cases of whooping-cough were 2 less than the number in the previous week, and included 4 in Edinburgh, 3 in Glasgow, and 3 in Aberdeen. The 5 deaths from diphtheria were equal to the number in the previous week, and included 2 in Leith and 2 in Perth. Two of the 4 deaths referred to measles, and the fatal case of enteric fever, were registered in Glasgow. The fatal case of scarlet fever was recorded in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 29 and 41 in the two preceding weeks, declined to 24 last week, and were 23 below the number in the corresponding week of last year. Of the 564 deaths from all causes in the eight towns last week 159, or 28 per cent., were recorded in public institutions, and 14 deaths were attributed to different forms of violence. The causes of 10, or 1·8 per cent., of the deaths in the eight towns last week were not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·5 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 609 births and 462 deaths were registered during the week ending Sept. 2nd. The annual rate of mortality in these towns, which had been 17·1, 19·4, and 19·3 in the three preceding weeks, rose again to 21·0 per 1000 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these towns averaged 17·5, whilst the mean rate during the same period did not exceed 16·3 per 1000 in the 77 English towns, or 14·8 in the eight Scotch towns. The annual death-rate last week was equal to 25·8 in Dublin (against 17·6 in London), 18·6 in Belfast, 24·5 in Cork, 12·8 in Londonderry, 17·7 in Limerick, and 9·5 in Waterford; whilst in the 16 smallest of these towns the mean annual death-rate did not exceed 17·8 per 1000. The 462 deaths from all causes in the 22 Irish towns exceeded the number in the previous week by 36, and included 153 which were referred to the principal epidemic diseases, against 114 and 133 in the two preceding weeks; of these 153 deaths, 141 resulted from diarrhœal diseases, 7 from whooping-cough, 2 from enteric fever, 2 from measles, and 1 from diphtheria, but not one from scarlet fever or from small-pox. These 153 deaths from the principal epidemic diseases were equal to an annual death-rate of 6·9 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 8·4 per 1000, while in the eight Scotch towns it did not exceed 4·1. The deaths attributed to diarrhœal diseases, which had been 104 and 112 in the two preceding weeks, further rose to 141 last week, and included 126 of infants under two years of age. Fifty-eight deaths occurred in Dublin, 49 in Belfast, 6 in Cork, and 6 in Newtownards. The deaths referred to whooping-cough, which had been 3 and 8 in the two preceding weeks, were 7 last week, and were all registered in Dublin. The 2 fatal cases of enteric fever occurred in Dublin and Belfast, those of measles in Dublin and Newtownards, and that of diphtheria in Dublin. The deaths referred to diseases of the respiratory system, which had been 39 and 30 in the two preceding weeks, were 31 last week. Of the 462 deaths from all causes in the 22 town districts last week 109, or 24 per cent., occurred in public institutions, and 8 deaths were attributed to different forms of violence. The causes of 15, or 3·2 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of deaths during the week under notice did not exceed 0·5 per cent. in the 77 large English towns, and was equal to 1·8 per cent. in the eight Scotch towns.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—The extension of the Sunderland and North Durham Eye Infirmary, undertaken in memory of Mr. Thomas Frederick Hopgood, surgeon to the institution, who died in May, 1909, was opened by the Mayor of Sunderland on August 26th. After the ceremony the mayor, on behalf of the vice-president and the general committee, presented a silver rose bowl and some other articles to Captain George Butchart, chairman of the house committee, for his supervision of the work. The cost of the extension has been over £700.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: J. H. Pead to the *Cumberland*, on recommissioning; J. E H. Phillips to the *Superb;* and G. A. Waters to the *Excellent*. Staff Surgeons: H. Hunt to the *Endymion;* J. G. Peebles to the *Dido*, on commissioning; and R. W. B. Hall to the *Sirius*, for voyage out and home. Surgeons: R. F. MacMahon to the *Pembroke*, additional, for disposal; L. L. Greig to the *Cumberland*, on recommissioning; and G. Moir to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Major James C. Morgan to be Lieutenant-Colonel, vice S. R. Wills, retired (dated August 30th, 1911).

The under-mentioned officers are seconded for service with the Egyptian Army (dated August 17th, 1911): Captain Robert B. Black and Lieutenant Harry S. Ranken.

Captain E. S. Worthington, M.V.O., now serving in London, has been appointed medical officer on the staff of the Duke of Connaught when the latter proceeds to Canada. Captain R. J. B. Buchanan has been appointed to the Alexandra Hospital, Cosham, as clinical pathologist. Captain D. Coutts has been granted general leave to Oct. 15th next.

Colonel M. W. Kerin, C.B., principal medical officer of the Seventh (Meerut) Division, has taken up duty at Mussooree. Brevet-Lieutenant-Colonel O. R. A. Julian, C.M.G., lately commanding the Military Hospital, and civil surgeon at Kasauli, has taken up duty in the Dublin District on completion of his tour of service in India. Major T. McCulloch, from Mandalay, has been appointed to the medical charge of the Military Hospital at Calcutta. Major E. C. Anderson, from Kuldana, has been transferred to the Military Hospital at Rawal Pindi for duty. Major P. H. Collingwood, from Devonport, has been appointed to the medical charge of troops at Exeter. Captain W. F. H. Vaughan has been transferred from Cosham to Parkhurst. Captain G. E. Cathcart, from Chester Military Hospital, has been placed in medical charge of Trawsfynydd Camp. Captain R. H. L. Cordner, on return from service in India, has been appointed for duty in the Southern Command. Captain D. P. Johnstone, from Liverpool, has been detailed for duty at Ross Camp. Captain A. A. Meaden, on completion of a tour of service at Nasirabad, India, has been posted to the Military Hospital at Fermoy. Captain G. Ormerod has been transferred from Belfast to Londonderry. Captain C. P. O'Brien-Butler, from Purandhar, has taken up duty at Belgaum.

INDIAN MEDICAL SERVICE.

Surgeon-General P. H. Benson has retired. Colonel D. ffrench-Mullen, who will shortly vacate the appointment of Deputy Principal Medical Officer at Indian Army headquarters, has been appointed Principal Medical Officer, Sirhind and Jullundur Brigades. Major L. F. Smith has been appointed to the charge of the Brigade Laboratory at Nowshera. Captain C. H. Cross has been posted to the medical charge of the 15th Ludhiana Sikhs.

His Excellency the Governor of Bombay in Council has appointed Lieutenant-Colonel Ashton Street to be Senior Surgeon and Professor of Clinical and Operative Surgery at the Grant Medical College, Bombay, in succession to Lieutenant-Colonel W. H. Quicke, who has retired. Major J. G. Murray has been appointed Civil Surgeon at Berhampur, Bengal. Major J. M. Woolley has been appointed Senior Medical Officer at Fort Blair. Major R. F. Standage, Bombay, has had an extension of leave granted by the Secretary of State for India. Major J. W. Watson has been appointed Agency Surgeon at Alwar. On return from combined leave of absence home from India Major C. H. Bensley has been appointed to officiate as Superintendent of the Central Jail at Nagpur. Major F. O. N. Mell has been appointed to officiate as Inspector-General of Prisons in the Central Provinces during the absence on leave of Lieutenant-Colonel W. B. Lane. The services of Captain R. T. Wells have been placed temporarily at the disposal of the Government of the Punjab by the Home Department. Captain A. S. M. Peebles has been appointed to officiate as Superintendent of the Central Lunatic Asylum at Berhampur. Captain E. P. Mackie has been posted by the Home Department of the Government of

India for duty in the United Provinces. Captain H. M. Brown has been selected to officiate as Deputy Sanitary Commissioner of the Bengal and Orissa Circle. Captain C. C. Murison has been appointed to officiate as Civil Surgeon and Superintendent of the Lunatic Asylum at Hyderabad.

TERRITORIAL FORCE.

Yeomanry.

Nottinghamshire (South Nottinghamshire Hussars) Yeomanry: Surgeon-Lieutenant William T. Rowe to be Surgeon-Captain (dated July 27th, 1911).

Royal Army Medical Corps.

1st London (City of London) Field Ambulance, Royal Army Medical Corps: The undermentioned officers resign their commissions: Captain Charles A. Lees and Captain Percival G. A. Bott (dated Sept. 6th, 1911). Hans Conrad Swertz to be Lieutenant (dated Sept. 6th, 1911).

5th Southern General Hospital, Royal Army Medical Corps: Major John R. S. Robertson to be Lieutenant-Colonel (dated May 1st, 1911). Captain Thomas A. M. Forde to be Major (dated May 1st, 1911).

For Attachment to Units other than Medical Units.—John William Bell to be Lieutenant (dated July 18th, 1911).

Attached to Units other than Medical Units.—Captain Robert H. Gilbert-Bruce resigns his commission (dated Sept. 6th, 1911).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Alexander C. McKillop resigns his commission (dated Sept. 6th, 1911).

The undermentioned Lieutenants are confirmed in their rank: Arthur H. Habgood, Alexander C. Court, Clarence E. Greeson, John P. Charnock, William Crymble, Laurence M. Routh, Sydney J. Higgins, Robert H. Nolan, Leonard W. O. Taylor, Reginald Fisher, John H. C. Grene, and Harold F. Vellacott.

The undermentioned to be Lieutenants (on probation): Cadet Lance-Corporal Charles Hope Carlton, from the University of Oxford Contingent, Officers' Training Corps (dated July 31st, 1911). Cadet Corporal D'Arcy Power, from the University of London Contingent, Officers' Training Corps (dated August 7th, 1911).

VACCINATION IN THE ARMY.

In the House of Commons recently the Under Secretary of State for War, replying to Mr. John Ward, M.P., said that with the exception of those bearing distinct marks of small-pox all army recruits were vaccinated, unless in the case of a recruit joining from the Special Reserve the operation was certified to have been successfully performed during his service in this force. Once a year, in March, medical officers were required to satisfy themselves that every man, woman, and child under their charge was sufficiently protected by vaccination. There had been only one admission to hospital for small-pox amongst the army at home for the last five years, and that was in the case of a woman. It was well known that the period of immunity after vaccination or revaccination varied, and those individuals whose period of immunity commenced to decline earlier than usual were liable to fall victims to the disease, as was the case with the woman mentioned. Accordingly, owing to the chance of there being individuals present in the barracks whose period of immunity was for various reasons declining or becoming evanescent, it was considered necessary that all persons living in or associated with barracks should be adequately protected against small-pox.

THE UNITED STATES NAVAL MEDICAL BULLETIN.

This quarterly bulletin is published under the authority of the Surgeon-General of the United States Navy "for the timely distribution of such information as is deemed of value to the medical officers and the hospital corps in the performance of their duties." The issue of July, 1911, contains a very useful compilation by Surgeon E. M. Shipp, U.S.N., of our present knowledge of tropical diseases in their relation to the eye, in which he divides them into five classes—viz., those due respectively to bacteria, moulds, protozoa, helminths, and toxins and other causes. He discusses each member of these five groups separately. A report, a sequel of a previous communication, from the United States Naval Hospital, Norfolk Va., by Passed Assistant Surgeons G. B. Trible and H. A. Garrison, U.S.N., records and discusses eight cases in which the conclusion is arrived at that the treatment of syphilis with salvarsan is of particular advantage in the service, either alone or in combination with mercurials. In the primary and secondary stages (the most common ones in the service) the rapidity of return to duty on treatment with salvarsan is remarkable. The following is recommended as an ideal treatment: "In primary lesions, thorough excision as soon as diagnosed, two intravenous administrations of salvarsan at intervals of ten days, followed by an active mercurial treatment by injection or inunction for a period of three months. In the secondary and tertiary stages this treatment should be combined with mercury and potassium iodide." Passed Assistant Surgeon H. Butts, U.S.N., discusses the mental examination of 50 recruits who became insane soon after enlistment, and urges more time for the inquiry into the past history of candidates, so as to exclude alcoholics, drug fiends, sexual perverts, and mental defectives. Oblique inguinal hernia (almost the only type found in the United States navy) is discussed with reference to diagnosis and treatment by Passed Assistant Surgeon B. F. Jenness, U.S.N. From the United States Naval Medical School laboratories comes a report of special interest to naval surgeons, on the Davainea Madagascariensis in the Philippine Islands, by Passed Assistant Surgeon P. E. Garrison, U.S.N. Passed Assistant Surgeon M. E. Higgins, U.S.N., arrives at the conclusion that a negative reaction in Noguchi's complement fixation test "may mean either that the individual has never had syphilis, that he has had syphilis and been cured, or that owing to treatment the action has disappeared," while "weakly positive and faintly positive reactions without strong clinical evidence of lues are not to be accepted as bespeaking a positive diagnosis." Among many other interesting communications Passed Assistant Surgeon W. A. Anguin, U.S.N., describes a somewhat complicated but apparently effectual method of treating fracture of the lower jaw by wiring.

Correspondence.

"Audi alteram partem."

SEA-WATER: ARE ITS CURATIVE EFFECTS DUE TO RADIO-ACTIVITY?

To the Editor of THE LANCET.

SIR,—In THE LANCET of August 5th, p. 361, Dr. I. C. Maclean and Mr. L. de C. Harston record a case of toxæmia, presumably of intestinal origin, which cleared up in a remarkable manner under injections of sea-water. They state that Dr. H. D. Rolleston, who saw the case in consultation, regards the good effect as possibly due to the large amount of sodium chloride introduced into the tissues. Other writers have also held this view. Leary, for example, states that the action of isotonic sea-water solution is practically neither more nor less than that of physiological saline.[1] If this be indeed the case, then the careful process of collection and preparation becomes simply an elaborate farce.

But is the action, osmotic or chemical, of sodium chloride the complete explanation of the therapeutics of sea-water? Discussing, some months ago, the treatment of mucous colitis,[2] I suggested that radio-activity may play a part in the effects produced. Since then further investigations have strengthened this belief, and it may be of interest to state briefly the facts on which I base my conclusion.

In the course of my practice I receive many cases of lupus and of indolent leg ulcer for treatment by X rays. Amongst other work obstinate cases from the Auckland Union Infirmary come under my care, whereas the simple examples are treated by other methods. Through the courtesy of Mr. Mark A. Wardle I was enabled to watch the progress of some of these latter, *pari passu* with that of my own cases under X rays. The clinical course and results, allowing for difference of severity, were so strikingly similar that I was led to the conclusion that the same agent—radio-activity—might be at work. Beyond a casual reading of Robert

[1] Leary: Boston Medical and Surgical Journal, August 18th, 1910.
[2] Practitioner, May, 1911.

Simon's article[3] I had not till this time taken much interest in the therapeutics of sea-water; but I have since consulted all the literature available to me on sea-water injection, sea voyages, and radium-water therapy.[4]

I find that the two agents agree in the following properties: 1. General tonic and stimulant action; this is produced with great rapidity and thus differs from the slow effects obtained by medicinal tonics. 2. The production of diuresis, and alteration in the output of urea and uric acid. 3. Continued administration results in gain in body weight, with accompanying speeding up of metabolism, increase of appetite, and increased output of CO_2. 4. Therapeutically, marked benefit is produced in neurasthenia, intestinal auto-intoxication, certain skin diseases, chronic joint troubles, early tuberculosis, and some cases of albuminuria. 5. Radium-water, whether artificially prepared or obtained from natural springs, owes its activity to dissolved "emanation," which is a gas. This gas which, under natural conditions, is being constantly renewed, loses its activity fairly rapidly, declining to half value in less than four days. It may be removed from the water by boiling for some time. *The therapeutic value of sea-water is destroyed by heat; nor is it of any use after it has been kept three weeks.* Of the truth of these statements I have had ample confirmation in my own practice.

A pertinent question is, Does the physicist recognise the presence of radio-activity in freshly gathered sea-water? At the recent meeting of the British Medical Association in Birmingham, Professor Farr (chair of Physics, Christchurch, N.Z.) gave an address on the Effects of Radio-active Water on Fish.[5] In connexion with this subject, I mentioned to him my views on sea-water treatment, and he informed me that ocean water *is* to some small extent radio-active, and that this activity is mostly due to dissolved emanation.

I submit, therefore, that in view of the fact that sea-water is radio-active, and that its physiological and therapeutic effects so strikingly resemble those of radium water, there is very good reason to believe that its curative powers are, at any rate in great part, due to the emanation which it contains. In radio-activity we have an agent capable of producing all the diverse and powerful effects which are claimed for sea-water treatment—effects which range from the cure of lupus to the banishment of an obscure toxæmia, such as that described by Dr. Maclean and Mr. Harston. So far as I am aware, no salt or combination of salts could accomplish such results.

If my theory be correct, its practical importance is obvious. Ocean water is kept constantly radio-active, probably as a result of submarine volcanic processes. Once removed, however, it rapidly loses its virtue. Hence, it is only freshly collected water which is of value; to get the best results we should use it within a week. Those who do not observe this rule cannot be said to give the method a fair trial; they may well find sea-water of no more value than salt solution.

I am, Sir, yours faithfully,

FRANCIS HERNAMAN-JOHNSON, M.D., Ch.B. Aberd.,
R.N. (retired).,

Bishop Auckland, August 15th, 1911.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—Many of your readers have carefully followed the discussion of this question in your pages. We have, I trust, derived benefit, but the actual enlightenment is less than many of us hoped for.

The original question was specific and definite. Is a father, acting in the interests of an epileptic son under age, entitled to procure an operation which will prevent that son from becoming a father? It is a question that will, before long, demand an answer. But it has not so far received an answer. The stream of heart-felt eloquence at high pressure directed against your columns seems, indeed, to have washed the question away. Certainly it is satisfactory to know that there are members of the profession who wear their hearts upon their sleeve, and still more satisfactory to be assured that the emotions contained in those hearts are of so lofty a character. But we never doubted it. These emotions are beside the mark. The question is one that can only be discussed profitably in the dry light of intelligence. Moreover, it demands precise knowledge.

It is surprising to find that several of your correspondents imagine that a question of this kind can be dismissed by talking about a supposed abstract conflict between the "individual" and the "race." A concrete question demands a concrete answer. In this case the possible father is an "individual"; the possible children would also be "individuals." The children of this father are likely to involve a special burden of anxiety and expense, while his own condition will render him unfit to cope with that burden. Under such conditions the children are likely to be a misery to themselves and to others. There is no conflict here between the "individual" (the possible father) and the "race" (the possible children). Their interests are identical. Evidently it is dangerous to plunge into academic disquisitions of a pseudo-metaphysical character when asked to reply to a simple concrete question.

There is another point on which some of us feel that we have been led astray. No doubt there is a wide range of variation in what the phrenologists call philoprogenitiveness. But in some of your correspondents this bump must be developed to a really alarming extent. It is good to have children, so long as one is reasonably assured that those children will be well-born, and that one is able to provide for them. But it is another matter to have children at all costs. We must not allow our philoprogenitive impulses to grow so hysterical that we become unable to see that many people remain happy and lead useful lives without children, and even with no prospect of children. I have elsewhere recorded the case of a medical man who, having as many children as he desires and wishing to avoid the unpleasant routine of preventive methods, has had vasectomy performed with results that are highly satisfactory both to himself and his wife. Now, many will consider that in such a case the operation was not called for. But supposing the subject had been a man of profoundly neuropathic constitution, there ought surely to be little difference of opinion, even though vasectomy had been performed at the outset of sexual life. In many cases, it is probable, sterilisation and freedom will prove the only proper alternative to isolation without sterilisation. "Life under such conditions is not worth living," exclaims one of your correspondents; he would rather retire to a colony for degenerates. Very well. *Chacun à son goût.*

It is not easy to feel enthusiasm about sterilisation, any more than about any other operation for the relief of suffering humanity; it would be better to avoid the need for it, and its scope must always be limited. It is surprising, therefore, to find that one of your correspondents has so much faith in the enormous effects of asexualisation that he fears lest, by abolishing human suffering, it will remove the need for moral helpfulness. One may note in passing that the "moralist" who would perpetuate human misery in order to cultivate his own moral helpfulness is a "moralist" who must be severely isolated in inverted commas. (Let me add that I am sure he does himself an injustice and is the victim of his own controversial ingenuity.) But this fear is uncalled for. Everyone who is acquainted with the actual conditions of things to-day knows that, far from being threatened by the disappearance of the need for moral helplessness, we are being overwhelmed by the burdens involved by our moral helpfulness. The favour with which sterilisation is now viewed is largely due to the hope that, if wisely and discriminately carried out, it may help us to cope with those burdens.

It is not, I believe, quite correct that sterilisation has been "legalised" in Switzerland. The reference is probably to the operations performed at the Cantonal Asylum at Wil. (The portion of the sixteenth annual report of the asylum dealing with the matter is reproduced in the *Psychiatrisch-Neurologische Wochenschrift*, No. 2, 1909.) In these cases the operation (actual castration), carried out on two men and two women, was performed not only by agreement with the relatives and the local authorities, but with the eager consent of the patients themselves, who were thus enabled to return

[3] Robert Simon: "Injections of Sea Water," Medical Annual, 1910.
[4] Amongst writings consulted were: "Sea Air and Sea Baths," Quain's Dictionary of Medicine; "Treatment of Rheumatism by Radium," Professor His, Brit. Med. Jour., Feb. 4th, 1911; Papers on Radium Emanation by Armstrong and Saubermann, British Medical Association, Birmingham, July, 1911.
[5] See THE LANCET, August 12th, 1911, p. 446.

to freedom and to work. No compulsion being exercised, no legislation was necessary. This is as it should be. There are very serious objections to compulsory sterilisation.

This discussion has made it clear not only that it is desirable (let me repeat) to cultivate the dry light of intelligence, but also that an extended knowledge of the elementary facts of sexual physiology and psychology would be highly advantageous. Here we see a medical man who apparently confuses vasectomy with castration; there another who believes that vasectomy is fairly comparable with crypt-orchidism; again a third who, one suspects, imagines that sterilisation involves impotence. It is also evident that some among us, however young in years, are still living in the past, not realising what men and women are thinking and doing to-day, nor the new ideals which are inspiring them.

In these matters of eugenics the growth of both general and professional opinion (even since the Royal Commission on the Feeble-minded issued its report three years ago) is most remarkable to those who watch the development of opinion. It is idle to ignore it.

I am, Sir, yours faithfully,

West Drayton, Sept. 4th, 1911. H. HAVELOCK ELLIS.

NATIVE NURSES IN SOUTH AFRICA.

To the Editor of THE LANCET.

SIR,—In a South African newspaper, the *East London Daily Dispatch*, a few weeks ago there appeared an extract from a letter said to have been published in THE LANCET. I have not been able to trace the letter in your columns, but as I presume it must have appeared I should be glad to be allowed a little space to reply to it. The writer says that the native probationers in training in this hospital "are stated to compare very unfavourably with European probationers," and the inference from his letter is that they are so unsatisfactory that no hospital will employ them. The fact, however, is that with one exception the colonial hospital authorities have never been willing to give these nurses a trial. That one hospital has employed two and is now wanting another.

It is quite true that a native girl has a longer hill to climb than a European girl before she can become a good nurse. Her home training usually is not so good. Studying in English is also a difficulty for probationers whose home language is not English. But some of our probationers have become very fair nurses, and in the work of nursing natives they, of course, have a great advantage over European nurses, who often cannot speak the patient's language. We are hoping to find employment for our native nurses under Lady Gladstone's District Nursing Scheme in memory of King Edward. In this scheme special provision is being made for this purpose, and I hope none of your South African readers who may be in a position to forward the native section of the scheme will be deterred from doing so by the letter to which I have referred. One of our nurses has for several years been engaged in district nursing and her work has been favourably commented upon both by her employers (a colliery company) and by the public health authorities.—I am, Sir, yours faithfully,

NEIL MACVICAR, M.D.,
Medical Superintendent, Victoria Hospital, Lovedale Mission, South Africa.

*** The subject was referred to in our columns on July 8th, but the words quoted were not used. We have pleasure in publishing Dr. Macvicar's letter.—ED. L.

TATTOOING *v.* VACCINATION.

To the Editor of THE LANCET.

SIR,—Curiously enough, I was just on the point of writing to you on the subject of tattooing in connexion with vaccination, when I read the letter of your correspondent, "E. A. A.," on the subject in THE LANCET of August 26th, p. 664. My object was to tell you that I had recently been informed by a time expired non-commissioned officer, late of the Indian army, that at several stations where he had served medical officers repeatedly told the men that they need not be vaccinated if they were tattooed, and he himself being well tattooed had been exempted from compulsory vaccination.

The attention you are drawing to the subject ought to test the truth of such stories (personally I have absolute confidence in the truth of my informant) and bring the matter to the attention of those responsible. My informant added that men who agreed to allow themselves to be tattooed were granted 13 or 18 days (I forget which) relief from duty for the express purpose!

I am, Sir, yours faithfully,

J. Y. W. MACALISTER.

Royal Society of Medicine, Cavendish-square, W., August 31st, 1911.

SPONTANEOUS COMBUSTION OF METHYLATED SPIRIT.

To the Editor of THE LANCET.

SIR,—With reference to the letter of Dr. John J. Robertson, in THE LANCET of August 12th, p. 475, may I record a somewhat similar incident that has occurred here? On August 1st a lady rose to make a cup of tea at 6.15 A.M. The spirit lamp (with wick) was standing on the floor near the grate. Directly she took the cover off it flared up, and she was burned rather severely about her face and ear. The lamp had not been used since the morning before. A box of matches was on the mantel-piece, but had not been touched. The window was open top and bottom, but the sunlight was streaming through the glass on to the lamp. The patient told me that a similar accident happened ten years ago to her cousin. The lamp in that case was standing in a bay-window, and its ignition was attributed to the sunlight.

I am, Sir, yours faithfully,

W. J. ERNELY SUMPTER, M.D., &c.

Sheringham, August 29th, 1911.

A DERMOID CYST OF THE TESTICLE.

To the Editor of THE LANCET.

SIR,—Dr. Ernest E. Hughes's statement, in recording a case with the above title in last week's number of THE LANCET, that "a left-sided testicular dermoid has yet to be recorded," presumably means in English. Of the cases collected by Wilms and published in 1896, the side affected was stated in ten cases and was the left in four of them.

I am, Sir, yours faithfully,

F. J. F. BARRINGTON.

Medical School, University College Hospital, W.C., Sept. 4th, 1911.

A DISCOVERY IN REGARD TO THE FUNCTIONS OF THE KIDNEY: A CORRECTION.

To the Editor of THE LANCET.

SIR,—I trust you will allow me to correct an error in the Croonian lecture delivered before the Royal Society on June 15th by Professor T. G. Brodie, which I have only just noticed.

The "new conception of the glomerulus" of the kidney offered by Professor Brodie was discovered over 30 years ago by my brother, Dr. A. W. Smyth of New Orleans (better known in connexion with the first successful operation for subclavian aneurysm by tying the vertebral artery for the first time, and mentioned at length in Erichsen's Surgery and by Sir Frederick Treves and others). The discovery in regard to the function of the kidney was published in a pamphlet at the time and appears in the "American Encyclopædia of Biography" and elsewhere.

A. W. Smyth showed that there was no communication between the Malpighian corpuscle and the uriniferous tubules, as taught by Bowman; that there was no filtration; that the water reached the tubules by their own epithelial cells; that the glomerule was a vascular hydraulic ram acting with such force, as in one instance, to push a calculus half an inch in diameter down a ureter.

I am, Sir, yours faithfully,

WM. WOODS SMYTH,
Fell. Med. Soc. Lond., &c.

Maidstone, Sept. 1st, 1911.

ACUTE MANIA A COMPLICATION OF MEASLES.

To the Editor of THE LANCET.

SIR,—The few text-books which make any mention of such a complication of measles as acute mania only allude to it in the briefest possible manner, so that the following account of a case may be of some interest.

The patient was a well-built, well-nourished, strong, active woman aged 22 years. No history of disease of the nervous system or of mental disorder could be discovered amongst her relations past or present There was nothing of interest in the past history of the patient, who was one of a family of six. The attack of measles began in the usual way with nasal catarrh. Menstruation began two days previously and lasted four days and was normal in every way. Koplik's spots were seen quite distinctly on the second day, when the morning temperature was 100·2° F. The rash appeared on the evening of the third day, and when fully developed was very characteristic. It was first noticed behind the ears, and was not well out on the face until the evening of the fourth day. It had disappeared on the eighth day. The morning temperature was 99 8° on the third day, 102·8° on the fourth, 101·6° on the fifth, 99·2° on the sixth, and 98·4° on the seventh and eighth. There was never any earache, vomiting, diarrhœa, headache, or sore-throat. There was never any evidence of lung trouble beyond the bronchial catarrh usual in measles, which was not at all severe in this case. There was a good deal of injection of the conjunctivæ on the fourth day, but this soon abated. The eyes were bathed every four hours with boric lotion. At the end of a week the patient seemed to be on the high road to a rapid and complete recovery. She was hungry and cheerful. She had slept well for two nights, and showed no signs of the illness beyond a natural feeling of weakness.

In the light of after events there is an inclination to think that the patient was rather excited on the morning of the eighth day, but had she recovered from the measles in the ordinary way it is probable that no one would ever have recollected the excitement. About 9 P.M. on the eighth day she quite suddenly asked whether she would be well enough to go to a dinner party with some friends that day fortnight. The question aroused some interest because the day was Sunday and the friends were not people who were at all likely to give a dinner party on the Sabbath, and also no mention of any dinner party at their house had been made by anybody. However, nothing more unusual happened until about midnight, when the patient, who had been lying quiet in bed, though not asleep, for about two hours, suddenly sprang out of bed and literally bundled an old servant, who was dozing in a chair by the fire, neck and crop out of the room and downstairs before she had time to realise what was happening. At 12 30 A M the patient was sitting up in bed talking incessantly and incoherently. At intervals she made frantic struggles to get to the fire, and it was with considerable difficulty that two people were able to keep her in bed. Her face was flushed, her eyes bright and sparkling, her temperature 99·2°, pulse 96, and respirations 24. There was nothing abnormal to be detected in the thorax or abdomen. The pupils reacted well to light; the knee-jerks were normal; urine had been passed about 10 P.M.; the bowels had been open after an aperient the previous morning; the tongue was tremulous and coated with white fur. The patient was labouring under a delusion that all her relatives were devils, and she consigned them all, individually and collectively, to the nether regions in extremely vigorous language. She was given 40 grains of bromide of potassium and in about an hour she became much quieter so long as her relatives did not approach her. Any attempt on the part of any of them to do this irritated and excited her extraordinarily. From 2 A.M. to 5 A.M. she remained fairly quiet though not asleep, but about 5 A.M. she became as excited again as she was at midnight. After another dose of bromide there was comparative peace until about 9 A.M., when another phase of excitement began. There was neither sugar nor albumin in the urine. There was nothing abnormal to be seen with the ophthalmoscope. There was no nystagmus, no strabismus, no deafness, no tremor of the hands, and no anæsthesia or hyperæsthesia of the skin could be discovered. Forty grains of bromide of potassium were given every four hours, and during the day the patient was not violent, though at times she became very excited, and all day she was quite irrational. She took sloppy food well. The temperature was 99·4° in the morning and 100·8° in the evening. Thirty grains of chloralamide were given about 10 P.M., but the patient never slept at all during the night. Most of the time she talked incessantly, and two or three times was quite violent. On the tenth day a dose of 30 grains of bromide of potassium with 15 grains of chloral hydrate was given every four hours. The temperature was 99·8° in the morning and 100·6° in the evening. The face was much less flushed and was almost expressionless instead of being bright and excited. A daily dose of an aperient had to be given to overcome the constipation. The patient's main delusion now was that the doctor was Jesus Christ.

On the eleventh day the patient was a good deal worried by hallucinations of sight and hearing; and she imagined that she was the chief of sinners. She was quieter but very morose. Her memory seemed completely in abeyance. The morning temperature was 99·2° and the evening 99·8°. The pulse was 84. On the twelfth day the chief mental trouble was the appearance of pronounced erotic symptoms. When the doctor tried to put his stethoscope on her chest she flung her arms round his neck and tried to drag him into the bed. A Widal reaction proved negative. Sloppy food was taken well. The temperature was 99·0° in the morning and 99·6° in the evening. The chloral and bromide were still continued, but the patient had only had about four hours' sleep during the last four days. The erotic symptoms persisted for four days and then gradually subsided, and at the same time a gradual general improvement began. More sleep was obtained, the restlessness diminished, and the delusions disappeared.

At the end of three weeks the chloral and bromide were given up and occasional doses of chloralamide were given to ensure a good night's rest. The patient was free from delusions but was inclined to be melancholic. She took no interest in what went on around her, and her intellect seemed to have relapsed into the condition of that of a child of four. She answered questions childishly and was quite pleased when a book of nursery stories was read aloud. The presence of her relatives no longer worried her, and so they were readmitted to her room which they had not entered for ten days. At the end of a month there was a decided improvement, though there were occasional fits of depression, and a dose of chloralamide had to be given occasionally.

The patient began to get up soon after this, and though rather weak physically soon picked up strength. She went away to the seaside at the end of six weeks and made steady progress. She became more cheerful and much less childish. She amused herself with sketching and simple games, and took a good deal of walking exercise, but was incapable of any sustained mental effort for nearly six months, and her movements were performed in rather a jerky manner. No hypnotic was given after two months. Nine months after the onset of the measles the patient was quite herself again in every way and no traces of the illness remained.

I am, Sir, yours faithfully,

Sept. 2nd, 1911. A PHYSICIAN.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

A Nursing Home for Edinburgh.

A NEW nursing home for Edinburgh, Leith, and country districts for patients of limited means, which is to be established in Chalmers-street, Edinburgh, is the outcome of the successful experience of the working of the small nursing home of 12 beds in Rutland-square, in the development of which Dr. D. Chalmers Watson took an active part. For the past few years this institution has shown a working profit of £100, and all the original capital outlay has been paid up. The gradual growth of confidence, following on the characteristic Scotch caution with which the Rutland-square home was at first regarded by the Edinburgh medical men, led Dr. Watson to suggest this larger scheme, which has developed under the auspices of the Edinburgh branch of the British Medical Association and the Leith

Medical Practitioners' Association to the region of practicability. A block of three large houses in Chalmers-street has been secured, which will be converted into a well-equipped nursing home, with all modern facilities for the diagnosis and treatment of disease as soon as the necessary sum of £10,000 is in hand. The committee first appealed for donations on March 29th. By April 12th the sum of £3600 had been secured; by May 6th, £5600; by June 16th, £7300; by July 8th, £8600; and now only a balance of £800 is still required. Donations only are asked for; subscriptions will not be required, as it is confidently expected that as soon as the home is open it will become self-supporting. The aims of the home are best described in the following words of Lord Balfour of Burleigh:—"The very poor have a chance of getting assistance in our best hospitals. Those in the higher grades of the social scale can provide it for themselves, but between these two extremes there are many who, while they can, and ought, and are indeed willing to pay something, are quite unable to meet the whole expense of operations and a long residence in nursing homes." The proposed nursing home will contain 50 beds—viz., 18 at the rate of 1 guinea a week, 18 at 2 guineas, and 14 (in single rooms) at 3 guineas. Admissions at the 1 guinea rate must all be made on the recommendation of the medical adviser as being cases suitable for admission at this rate. Both sexes will be received, and for either medical or surgical ailments, and they will be attended by any qualified practitioner at their own selection. The charges include all maintenance and nursing, the patients being responsible for the fees of their medical attendants. The scheme has received the cordial approval of the council and executive committee of the City of Edinburgh Charity Organisation Society. Lord Dunedin is the chairman of the general committee, Mr. Richard Lodge is chairman of the executive committee, while Mr. John L. Somerville, of 6, South Charlotte-street, and Dr. Watson are respectively treasurer and secretary.

Strichen Hospital: Local Government Board Inquiry.

For some considerable time past trouble has been experienced in the working of the Strichen infectious diseases hospital. The hospital, which serves a wide radius, from as far south almost as Ellon, seawards to Boddam, and north-west to Aberdour, is managed by a subcommittee of the Deer district committee of the Aberdeenshire county council. Two medical practitioners in Strichen, Dr. G. S. Trail and Dr. J. H. Stephen, some 15 months ago were appointed medical attendants at the hospital for alternate periods of a year each. According to this arrangement Dr. Trail should have been taking up duty in place of Dr. Stephen in May last. On April 29th of this year the hospital subcommittee met and resolved to ask Dr. Stephen to continue in office after Whit-Sunday next (subject to the existing condition of three months' notice), and instructed the clerk to intimate this resolution to Dr. Stephen and to Dr. Trail. This action of the subcommittee was objected to by Dr. Trail's law agent as being illegal, and has given rise to repeated acrimonious discussions in the district committee. Eventually it was decided to communicate with the Local Government Board and ask that an inspector be sent down to report on the whole working of the hospital. This was done, and the inquiry began on August 29th. The commissioners who held the inquiry were Dr. T. F. Dewar, one of the Local Government Board's medical inspectors, and Mr. Alexander McKinna, of the Public Health Department of the Board. The inquiry was held in the Victoria Hall, Maud, on August 29th and 30th, and was conducted in private. All the members of the hospital subcommittee were cited to appear as well as Dr. Trail, Dr. Stephen, Dr. J. P. Watt (medical officer of health for the county), the matron of the hospital, and others. It will probably be some considerable time before the result of the inquiry is made known.

Accident to a Medical Man.

When returning from a visit to a patient on the evening of August 31st, Dr. Andrew Fowler of Ellon, who was riding a motor cycle, met a motor whose lights he mistook for those of a couple of cyclists, with the result that he struck the splash-board and was thrown with great force from his machine. Fortunately the car was travelling slowly at the time, and on his being conveyed home it was found that his injuries were confined to severe bruises and shock.

Perthshire Fever Accommodation.

At a meeting of the Perthshire Highland district committee, held on August 26th, it was reported that the net cost of the county fever hospital for the past year was £1765, the proportion payable by the Highland district being £424. It was stated that only four patients had been sent from the district last year, while 150 patients were sent from Perth district at a cost of £580. It was explained that the contributions from the district had nothing to do with the number of patients sent, and the fact that there were so few was testimony to the health of the district.

Sept. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Notification of Births in Dublin.

THE Notification of Births Act was adopted by the city council of Dublin last year, and came into operation on Nov. 1st, 1910. Sir Charles Cameron, in his annual report as medical officer of health, gives some information regarding its working during the first two months. Although the duty of notification is put by the Act primarily on the father of the child, it is noticeable that by far the greater proportion of births was notified by medical men and nurses. The total number of births notified was 628, of which 251 were notified by medical men, 312 by midwives and nurses, and only 53, or about 8 per cent., by parents. Inasmuch as (to quote Sir Charles Cameron), "the object of the Act is to give advice where necessary to mothers of the poorer classes on the feeding and rearing of infants," it is important to know how this duty was carried out by the sanitary authority. The figures concerning the number of visits paid by the lady sanitary inspectors, as given in the report, are self-contradictory, but we learn that 464 first visits were paid and 238 re-visits. The number of re-visits is very small and must be of little use in guiding the mothers in the rearing of the babies. If such visits are to be of use they should be regularly paid, and be maintained until the child is at least a year old. It is noticeable that in 408 of the cases visited breast-feeding was practised. The reports of the lady sanitary inspectors show that they realise the duties of their work and that they are able to fulfil those duties tactfully.

Death of Mr. J. C. Sellars.

The death occurred recently of Mr. J. C. Sellars, a medical man of Dundalk, and coroner for the county Louth. In former years he was a crack rifle shot, and was a member of teams representing Ireland in international competitions.

Bequest by Sir G. P. O'Farrell.

The will of the late Sir George Plunkett O'Farrell, Inspector in Lunacy, has been proved, his estate being valued at £20,295. In the event of his son and daughter dying without issue, half this sum is to go to the Irish Medical Association to form a "Sir George O'Farrell Fund" for the benefit of the widows and children of medical men dying destitute.

Health of Belfast.

At the monthly meeting of the city council of Belfast held on Sept. 1st the health report for the five weeks ending August 19th showed the death-rate of the city from all causes during that period to be 16·4 per 1000, as compared with 14·0 in the preceding month and 15 8 in the corresponding period of 1910. The zymotic death-rate was 4·1, as compared with 3·3 in the previous month, the increase being due almost entirely to diarrhœa, which caused 90 85 per cent. of the deaths from zymotic diseases. An unfavourable feature of the report is the increased notifications of enteric fever (of which there were 18 cases), and it is still more unsatisfactory to find that no cause can be assigned for this reappearance of the disease, and that the cases are scattered throughout the city.

Scarcity of Water.

All over the north of Ireland, in both urban and rural districts, there is a great scarcity of water, a very rare phenomenon in our part of the world. In many of the provincial towns the reservoirs are empty, and the city of Belfast since Sept. 4th has been placed on a short supply—that is, from 7 P.M. to 8 A.M. the water is cut off. It is clear the

water commissioners will be obliged to build new reservoirs in the Mourne mountains; they seemed never to have anticipated such a dry season as the present one. As an indication of the dryness of the year, it may be mentioned that in August there were only 2·54 inches of rain, while in the same month of 1910 the rainfall was 6·18 inches, the average for the past 36 years in that month being 4·33 inches. Up to the end of August the rainfall for the whole of this year was 18·55 inches, as against 31·78 for 1910. Owing to the low state of the rivers many salmon and trout have been killed by flax-water (that is, the water coming from holes in which the flax is "retted"), while, still worse, in certain places, such as River Roe, county Derry, poachers have poisoned the water.

Disease in Newtownards.

Mr. D. Jamison, medical officer of health of Newtownards, county Down, owing to the prevalence of English cholera and measles in that town has recommended the temporary closing of the schools.

Sept. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A New Use for Radium.

NEW applications for radium in the relief or cure of disease, and particularly of those forms of disease hitherto lacking any efficacious treatment, are being diligently sought. Dr. Dominici and Dr. Chéron are the latest contributors in this field. These authors have claimed to have obtained considerable amelioration, and even cure, of deep extra-pulmonary tuberculous lesions, such as chronic adenopathies, costal caries (in this case in association with Dr. Barbarin), and fistula consequent on incomplete extirpation of bacillary foci, by the introduction into the tuberculous tissues of silver tubes containing radium. These observations have demonstrated to the authors the superiority of the procedure. The efficacy of radium-therapy in regard to certain tuberculous lesions that have hitherto shown themselves rebellious to medication has, they say, been demonstrated. The authors conclude from their observations, not that radium-therapy is always, and necessarily, more valuable than other modes of treatment in tuberculous lesions, but that there is sufficient encouragement to continue the study of radium-therapy, combining it with surgical methods and the use of various physical agencies, such as X rays, hot air, and diathermia, as well as hygienic, drug, and orthopædic measures.

The Legal Regulations for Distributing Serums.

France has a law regulating the preparation, distribution, and sale of therapeutic serums. According to this law, attenuated viruses, therapeutic serums, modified toxins, and analogous products, of use in the prophylaxis and treatment of contagious diseases, as well as substances of organic origin for injection, of undefined chemical constitution, for use in the treatment of either acute or chronic affections, shall not be issued, either gratuitously or for payment, without first obtaining the Government authorisation granted on the recommendation of the consultative committee of public hygiene of France and of the Academy of Medicine. The penalty is three months' imprisonment and 50 francs fine. The Court of Cassation has recently handed down a judgment which will cause much consternation in medical circles. A medical man, Dr. Lorot, was prosecuted last year before the Correctional Tribunal of the Seine, under circumstances that gave rise to the question whether the law applied in the case of a medical man who himself injected into his own patients an antituberculous serum of his own discovery and preparation, without first obtaining the required Government authorisation. The tribunal acquitted him, holding that there had not been any issue of the serum. On appeal by the Procureur Général the case was taken into the courts, but the Chamber of Correctional Appeals confirmed the decision of the previous judges. The Procureur Général, however, carried the case to the Criminal Chamber of the Court of Cassation, which quashed the decree of the Chamber of Correctional Appeals that had acquitted Dr. Lorot. It follows from this judgment that a medical man cannot, under penalty of the law, inject his own patients with a serum of his own manufacture without first obtaining the Government authorisation. The Criminal Chamber will determine later the court before which Dr. Lorot is to be brought.

Sept. 4th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Report of the Canadian Commission of Conservation for 1910.

THE reports of agricultural surveyors of Canada for 1910 to the Commission of Conservation, which have now appeared, have many interesting medical points in them. In Prince Edward Island 97 per cent. of the inhabitants obtain their water-supply from wells, but no typhoid fever has been reported from any of the farms on the island during the past ten years. In Nova Scotia 74 per cent. of the inhabitants depend on wells and 21 per cent. on springs. In the same period 2 per cent. of the farms have reported typhoid fever. In New Brunswick 60 per cent. depend on wells and 35 per cent. on springs, while typhoid fever appeared on no fewer than 11 per cent. of the farms. According to the report this large percentage of disease goes to show great carelessness regarding the water-supply and the sanitary conditions of the farmhouses and premises. In the English-speaking part of the Province of Quebec 100 per cent. depend on wells, many of them poorly protected, and 5 per cent. of the farms have reported typhoid fever. In the French-speaking part of Quebec the water-supply is furnished by rivers, pipe lines, springs, and wells; 13 per cent. of the farms have reported typhoid fever. In Manitoba 100 per cent. depend on wells, and 6 per cent. of the farms have reported typhoid fever. In Saskatchewan over 80 per cent. depend on wells, and 7 per cent. of the farms have reported typhoid fever. In Alberta 90 per cent. depend on wells, but no cases of typhoid fever have been reported. In British Columbia about 40 per cent. of the inhabitants depend on wells, and 3 per cent. of the farms have reported typhoid fever. The reports also show that with regard to coal mine accidents fatalities therefrom are considerably higher in the United States and in Canada than in any other country of the world for which accurate statistics are available. Furthermore, the fatalities in the United States and in Canada are on the increase, while Great Britain, Belgium, Russia, and France show a gradual decrease. This state of affairs is thus commented on in the report: 1. The danger inherent in the work can never be entirely eliminated, but may be brought down to a minimum, as indicated by the low, constant death-rate in Belgium, Great Britain, and France. 2. Coal explosions occur very frequently in Canada and the United States, while they are more infrequent in other countries. It is not reasonable to expect that the loss of life and property can be entirely done away with, but at the same time experience has abundantly proved that careful and impartial investigations of such conditions will point the way to the remedying of at least some of the abuses.

Ottawa Typhoid Fever Epidemic.

An official report has appeared on the epidemic of typhoid fever which occurred in the city of Ottawa during the early spring of this year. By a process of elimination, milk, food-supplies, insanitary conditions, sewage, flies, and dust were excluded as primary causative factors, and consequently the only other common factor, water, remained. The immediate cause of the epidemic, which began in Ottawa on Jan. 1st, 1911, according to the report, was infection of the water-supply. The pollution of the water-supply began at about the middle of December, 1910, and was mainly due to the unusual lowness of the river and the freezing of the shallow places to the bottom, thus diverting the currents of polluting matter into the sources of public water-supply. The outbreak of the epidemic is now attributed to carelessness on the part of those responsible for the supervision of the water-supply of the city, who, firstly, allowed an old acqueduct to be converted into a sewer, and, secondly, neglected to follow the recommendation, made in October,

that the drinking-water of Ottawa should be subjected to treatment by hypochlorite of lime. The continuance and spread of the epidemic appear to have been due to various obvious causes, such as contact with persons ill of the disease and defective plumbing. Several points of interest were brought out in the investigation by the committee, for instance, that slums and insanitary conditions existed in Ottawa to an extent hitherto unthought of. The great lesson, however, to be learned from the typhoid outbreaks in Montreal, Toronto, Ottawa, and in other parts of Canada is that the only sure mode of protecting the public against the attacks of water-borne diseases is by the installation of an effective filtration system with, what is more important, the provision of adequate storage.

August 30th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Retirement of Government Health Officers.

THE proposal of the Government to retire Dr. A. John Gregory, the medical officer of health for Cape Colony, and Dr. G. Pratt Yule, the medical officer of health for the Orange Free State, was alluded to recently in THE LANCET.[1] It is now officially stated that the Government also proposes to retire Dr. E. Hill, the medical officer of health for Natal. This will leave only two comparatively junior Government health officers on the active list for duty in South Africa, and obviously this staff will be hopelessly inadequate. The decision of the Government, particularly in regard to Dr. Gregory, has provoked the utmost indignation throughout South Africa, and strong resolutions protesting against the proposal of the Government to retire Dr. Gregory have been passed by numbers of professional, municipal, and other public bodies. On July 7th, for instance, the subject was brought forward specially at the Western Cape Branch of the British Medical Association. At this meeting Mr. H. A. Moffat, in moving resolutions dealing with the matter, reviewed briefly the history of the agitation by the profession since the Union for the creation of a department of public health with a medical officer as its administrative head. He pointed out that there was one, and only one, obviously suitable man in South Africa to fill such a post—namely, Dr. Gregory. His length of service, great experience as an organiser and administrator, singled him out above all others. His claims were best shown by the history of public health administration in Cape Colony. There had been a gradual recognition of the importance of its administration, and there had been a gradual increase in powers accorded to the medical officer of health, until in 1907 a definite department had been created with Dr. Gregory as its administrative head. Dr. Gregory, during the whole 20 years of his service, had fought for the best form of public health administration and had finally gained it for the people of Cape Colony. The creation of the department in the Cape was the most eloquent tribute to Dr. Gregory as an organiser and administrator. He had successfully overcome the deep-rooted prejudice of Ministers, and had shown that a medical man could be entrusted with administrative duties. Dr. Gregory was a strong man and he had not chosen the paths of least resistance which would have brought him popularity. Instead he had pursued undeviatingly what he considered best for the country. Dr. A. Jasper Anderson, medical officer of health for Cape Town, in seconding the resolution, pointed out the arduous work Dr. Gregory had had to do as a pioneer in public health. He had been the first Government medical officer of health in South Africa. His had been a most difficult post to fill—one which had brought him into opposition to all sorts of vested interests and prejudices. Dr. Gregory's signal devotion to duty had always been most striking, and he had earned the gratitude and respect of all local authoritiees throughout the Province. Dr. Anderson supported the resolutions in their entirety because it was detrimental to the public interest to retrench an officer of such ripe experience and ability. Dr. Hewat, the president, expressed his accord with the resolutions, for he felt that it was impossible to find another man with the same practical knowledge of conditions in South Africa and of what was not merely theoretically desirable but of what was actually possible. He regarded Dr. Gregory's retirement, at an age when he was at his best and when his service would have been invaluable, as an immense loss to the State. A number of other members also spoke in a similar strain, and the following resolutions were then put and carried unanimously:—

1. This association learns with deep regret that the services of Dr. Gregory are to be dispensed with by the Union Government, and desires to record its sense of the signal value of Dr. Gregory's services as medical officer of health for the Cape Colony, and its appreciation of his devoted energy, integrity, courage, and ability in that capacity.
2. That the Association wishes to voice its convictions that in the organisation of the Public Health Department of the Union the services of Dr. Gregory, an officer of unrivalled experience and tried qualities, should have been retained to direct such organisation.
3. This Association is greatly concerned that the medical officer of health for the Union has not yet been appointed, as such appointment was definitely promised in Parliament by the Minister for the Interior.

It was also resolved that a copy of these resolutions, which are similar to those passed by other branches of the British Medical Association, should be forwarded to the Governor-General in Council, each Member of the Cabinet, the Executive Committee of the Province, the Council of every Municipality throughout the Union, the press, and Dr. Gregory. The Medical Council of the Cape, which is vested with certain advisory functions in regard to public health by statute, at its meeting on July 4th expressed itself in even stronger terms, for the following resolution was then passed:—

That this council deeply regrets the loss of Dr. A. John Gregory, one of its most valuable members, and takes this opportunity of expressing its grateful appreciation of the services rendered by him to it during his 11 years of membership. At the same time this council wishes to protest strongly against the failure of Government to recognise and retain for the Union the unrivalled knowledge and experience gained by Dr. Gregory during nearly 20 years of devoted service, and would further point out that the way in which the health department has been abolished and its head got rid of is contrary to the interests of the country and fraught with grave danger. That this be sent to the Minister for the Interior, the Acting Prime Minister, the Administrator and Council of the Cape Province, and to Dr. Gregory.

Discontent in the Profession.

As a result of the retirement of the three medical officers of health, there is grave discontent in professional circles with the Government. Medical men in other branches of the civil service appear to be realising that the State no longer offers security of tenure to its servants, and there may be difficulty in the securing of good men to fill posts as they fall vacant. Already several subordinate medical officials have handed in their resignations, and it is stated that others will follow suit as opportunity for other employment offers. Amongst those leaving the service shortly may be mentioned Dr. J. C. Mitchell, Government bacteriologist and pathologist for the Transvaal, who has secured the appointment of medical superintendent of the Transvaal Miners' Phthisis Sanatorium at Springkell. The general feeling of discontent has been still further accentuated by the manner in which the patronage of Ministers has been used in the filling of vacant district surgeoncies and other appointments of a similar character.

The Transmission of Leprosy.

The last International Conference on Leprosy held at Bergen suggested that leprosy might possibly be spread by the biting of insects. In a recent issue of the *South African Medical Record* appeared two papers on this subject by Mr. E. C. Long, principal medical officer, Basutoland, and Dr. T. L. L. Sandes, research medical officer, Robben Island. They have apparently been working independently of each other, and both show that bugs fed on the leprous nodules of patients contain in a fair proportion of cases, when killed and the alimentary tracts and contents are examined, bacilli which in shape, size, and staining reactions are similar to the bacillus lepræ. Dr. Sandes states that on May 2nd last he fed some bugs on a case of tubercular leprosy suffering from an acute exacerbation of the disease. On the 15th they were again fed on the same patient. Next morning one of them was found dead. In a smear made from the stomach contents there were a few bacilli, but in smears made from the body tissues field after field displayed numerous acid-fast bacilli. The appearance of these differed, in Dr. Sandes's opinion, from the classic lepra organisms. He states that they were shorter, and some almost coccoid; also that they were more homogeneous in staining, displayed no granularity, had occasionally a median

[1] THE LANCET, August 12th, p. 481.

constriction, and occasionally a terminal clubbing. The great majority were arranged in groups, the individuals in the groups showing a tendency to adhere in parallel formations. Dr. Sandes considered these to be young lepra bacilli in full prolific activity, not having as yet assumed the senile or degenerative forms usually observed in the impacted bacillary masses of human tissues. Dr. Sandes on comparing the organisms from this bug with those from cultures believes them to be identical.

South African Scurvy.

For some years past many practitioners have held the view that "scurvy" as met with in South Africa is different from the disease as met with elsewhere. For instance, it does not appear to follow deprivation of any special article of diet, is not quickly curable, and it appears to have a distinct seasonal variation. Years ago Dr. A. J. Gregory stated his belief that the disease was infectious, and that either the etiology of scurvy has been misunderstood or that the disease if not scurvy is an unrecognised disease simulating scurvy. In recent numbers of the *Transvaal Medical Journal* a lengthy article has appeared from the pen of Dr. W. Morton Hewetson, medical officer to the Wankie Colliery Company, Southern Rhodesia, entitled "The Etiology of Scurvy," which has attracted considerable attention. It would, however, appear very doubtful whether the author is describing the disease regarded elsewhere in South Africa as scurvy. It would seem rather to be pyorrhœa alveolaris, which is very common amongst native labourers. This is a disease, associated often with scurvy it is true, which is mildly infectious, occurs at certain seasons of the year, is unaffected by alterations in diet, is usually unaccompanied by other symptoms, and is readily cured by local treatment. Although Dr. Hewetson's paper has come in for considerable criticism at the hands of the profession, it is possible that the pyorrhœa alveolaris as met with in the compounds may be an early symptom of so-called "scurvy," and one would like to see research work undertaken from a bacteriological standpoint. There is no doubt that diet does play an important rôle in the causation of both conditions, but it is not an important factor in the cure of local inflammation of the gums. It is, however, a factor of great importance in the cure of South African "scurvy." The infectiousness of "scurvy" is now being more and more recognised. For instance, several district surgeons, on a prisoner being admitted to gaol with symptoms of "scurvy," insist on his isolation if possible, and if this cannot be done they prepare themselves for an outbreak of the disease.

Illicit Liquor Trading.

In spite of drastic legislation, the illicit selling of liquor to natives is on the increase, particularly on the Rand and in other mining areas. The traffic is causing much anxiety to those interested in the welfare of the native races of South Africa. It is not as though a sound liquor is supplied; on the contrary, most of that confiscated from time to time by the police is found to be a vile compound, of which "dop" brandy is the principal constituent. It is usually faked with Cape sherry and often fortified with rectified or even methylated spirit. It is often flavoured with bluestone, tobacco, or other deleterious substances. The effect of drinking such a liquor may be imagined. It is disastrous morally and physically; it is responsible undoubtedly for much of the crime on the Rand and elsewhere, and for much of the ill-health amongst native mine-workers, for which the former place particularly has become notorious. The profits are so enormous that the traffic is never likely to be suppressed under present conditions. There are some thinking men who hold that reasonable facilities should be afforded natives for obtaining pure liquors under official observation and regulation. Public opinion would not, however, tolerate this, but most practitioners would agree to a measure permitting the manufacture and sale of good kaffir beer. This is a native beverage which is harmless if not fortified by the addition of spirit. It is, moreover, an excellent anti-scorbutic. If the sale of this article of drink were legalised, and the existing laws relating to the sale of other liquors remained in force, the traffic in "fire-water" would be greatly diminished, if not entirely suppressed. The existing state of affairs demands rectification, but it is doubtful whether the problem will ever be tackled properly by the Government owing to the risk of alienating adherents with temperance sympathies.

Transfer of a Well-known Official.

Mr. Leonard Bostock, the well-known authority on malaria, who contributed a valuable chapter on the subject as relating to the Transvaal, in Sir Ronald Ross's latest book, "The Prevention of Malaria," has resigned his appointments as railway medical officer and district surgeon at Komatie Poort in the Transvaal, and has left to take up an appointment at Porto Amelia in Portuguese Nyassaland. Mr. Bostock has done much good anti-malarial work in the Transvaal, and the Portuguese authorities are to be congratulated on securing his services.

July 25th.

Obituary.

LEONARD CANE, M.D., B.S. LOND., M.R.C.S. ENG., L.S.A.,

CONSULTING PHYSICIAN TO THE PETERBOROUGH INFIRMARY.

Leonard Cane was born at Chichester on July 31st, 1848. He came of a professional stock, no fewer than 24 of his near relatives having been members of the medical profession. After leaving school he became a pupil of his uncle, Dr. Leonard Buckell of Chichester, with whom he lived for five years. During that time he matriculated at the University of London and passed the Preliminary Scientific Examination. In October, 1867, he entered upon his professional studies at University College, London, where he obtained the Atkinson Morley scholarship (£135), the Liston gold medal for clinical surgery, the gold medal for medicine, silver medals for clinical medicine, anatomy and physiology, and other distinctions. At University College Hospital he studied under the eminent men then connected with it, notably Sir William Jenner, Sir J. E. Erichsen, Sir J. Russell Reynolds, and Sir Henry Thompson, and had as fellow students and friends many who have since risen to great eminence in their profession, amongst whom may be mentioned Sir Thomas Barlow and Sir John Tweedy. Dr. Cane took the degree of M.B., B.S. Lond. in 1872, graduating with honours in both. He took the degree of M.D. Lond. in 1873, and held also the diplomas of M.R.C.S. Eng. and L.S.A. In 1875 he went into partnership with Mr. Thomas Southam of Peterborough, an old-established practitioner of that city. Here he succeeded in making a large general practice, and held several public appointments. In 1876 he was elected consulting surgeon to the Peterborough Infirmary, and in 1895 he was elected physician, which post he held until 1906, when he was compelled by paralysis agitans to retire from practice. He then went to reside at Eastbourne where he had built a house at the foot of the Downs.

Dr. Cane had three sons and one daughter. The eldest son, who took his M.D. degree at Cambridge a few months before his father's death, succeeded him in the practice at Peterborough and was appointed assistant physician to the infirmary. The second son joined the Royal Army Medical Corps, and the third son is also entering the profession. Here, indeed, is a family in whom the hereditary instinct for medicine, to which we alluded in these columns recently as becoming less pronounced, is extraordinarily in evidence. But that so first-class a practitioner of our science and art as he whose death we are now recording should have been closely followed by his children is not perhaps extraordinary, for as well as the example of a father they had that of a brilliant expositor always before them.

ARTHUR BEADLES, M.R.C.S. ENG., L.S.A.

THE death is announced of Mr. Arthur Beadles of Forest Hill, who died at Dover on August 19th. He was the son of John Nathaniel Beadles, who practised as a medical man at Broadway, Worcestershire. Arthur Beadles was educated at Irving's School, Mitcheldean, Gloucestershire, and in 1856 was apprenticed to his father in accordance with the usual routine of the day. After four years of this practical training he entered the medical school at Westminster Hospital, and obtained his diplomas in 1862 and 1863. After holding office as house surgeon at the Westminster Hospital, in 1866 he settled at Forest Hill, and there for many years he was one of the hardest worked of men in a large practice which he made

for himself. His powers of observation and his common-sense gave him a breadth of view and a grasp of many of the problems of clinical medicine that rightly inspired confidence in the public. For many years he was frequently hampered by recurrent attacks of rheumatic iritis. These were attended with gradual impairment of sight, which at last compelled his complete retirement in 1907 to Dover, where he died on August 19th. He was buried hard by the scene of his life's work at Elmer's End on August 23rd.

Dr. Eustace Smith sends us the following personal appreciation:—"Mr. Arthur Beadles was for many years the principal practitioner at Forest Hill, where his abilities and professional skill were universally recognised and esteemed. He was one of the old school of family physicians who brought a large fund of common-sense to bear upon his treatment, and whose intimate knowledge of drugs and their uses enabled him to treat the ailments and diseases of his patients with a readiness of resource and a success which commanded at once their gratitude and admiration. Mr. Beadles was in practice for many years before the days of microbes, but he was careful, in spite of his many engagements, to keep himself abreast of the advances of medical science, although he was never led by the allurements of the microscope or the charms of bacteriological research to forget that the primary object of his calling was the alleviation of suffering, to which his life was devoted. His amiable disposition and kindness of heart endeared him to all who had the privilege of his friendship, and his intellectual gifts and keen interest in literature and the arts made him a welcome companion. His loss will be felt by many besides the members of his own family."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Jonas Baron, professor of surgery in Budapest. Dr. Felici Filippo, *privat docent* of medical pathology in the University of Rome. Dr. T. Place, formerly professor of physiology in the University of Amsterdam. Dr. P. Girot, professor of natural history in the Clermont Medical School. Dr. L. Bruandet, professor of anatomy in the Rheims Medical School.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Külbs of Kiel has been recognised as *privat-docent* of Medicine.—*Bologna:* Dr. Teresio Rezzia has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Gratz:* Dr. Paul Mathies, *privat-docent* of midwifery, and Dr. Hans Spitzy, *privat-docent* of orthopædic surgery, have been granted the title of Extraordinary Professor.—*Heidelberg:* Dr. Tobler, *privat-docent* of pædiatry, has been granted the title of Extraordinary Professor. Dr. August Homburger has been recognised as *privat-docent* of Psychiatry.—*Innsbruck:* Dr. W. Trendelenburg of Freiburg has been appointed to the chair of Physiology in succession to Dr. F. Hofmann.—*Lemberg:* Dr. Paul Kucera, Extraordinary Professor of Hygiene, has been promoted to the Ordinary Professorship.—*Marseilles:* Dr. Olmer has been appointed Professor of Hygiene and Forensic Medicine in succession to the late Dr. Fallot.—*New York (College of Physicians and Surgeons):* Dr. Horatio B. Williams has been appointed Adjunct Professor of Medical Entomology.—*Prague (German University):* Dr. Hermann Schloffer of Innsbruck has been appointed to the chair of Surgery in succession to Dr. Wölfler.—*Rome:* Dr. Arsenio Brugnola of Sarsari has been recognised as *privat-docent* of Medical Pathology.—*San Francisco (University of California):* Dr. J. G. Fitzgerald has been appointed Adjunct Professor of Bacteriology.—*Sienna:* Dr. Luigi Rugani of Turin has been recognised as *privat-docent* of Laryngology and Otology.—*Tübingen:* Dr. A. Basler, *privat-docent* of Physiology, has been granted the title of Extraordinary Professor.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce the ninth edition of Dr. Frederick Taylor's "Practice of Medicine." The work, which will be in a larger form, has been very thoroughly revised. Considerable alterations and additions have been made in dealing with the subjects of cholera, dysentery, aphasia, hysteria, obstruction of the bronchi, phthisis, the physical examination of the heart and vessels, colitis and appendicitis, ankylostoma, gall-stones, anæmia and leukæmia, diabetes, and functional albuminuria. The subjects new to this edition are pellagra, meralgia pariæsthetica, pneumococcal meningitis, myotonia congenita, enterospasm, Hirschsprung's disease, intermittent claudication, congenital family cholæmia, peritoneal adhesions, lymphatism, bacilluria, and pneumaturia. The illustrations in the text have been increased.—Mr. William Heinemann of Bedford-street, Strand, will in the autumn publish a work by Dr. Nansen, entitled "Through Northern Mists," in two quarto volumes; it will be illustrated from old charts and engravings, as well as from drawings by the author. The same publisher also announces, under the title of the "Modern Criminal Science Series," translations of some of the most interesting volumes by continental writers on different phases of crime and criminality. The first four to appear will be: "Criminal Psychology," by Hans Gross; "Modern Theories of Criminality," by C. Bernaldo de Quiros; "Crime: its Cause and Remedies," by Cesare Lombroso; and "Criminal Sociology," by Enrico Ferri.

THE THIRD CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY.—The following is the programme of the Third Congress of the International Society of Surgery, which will take place this month at Brussels:—Sept. 25th: 2.30 P.M., Meeting of the International Committee. 8 P.M., Reception to the members of the Congress by Professor Dr. Lorthioir, President of the Belgian Society of Surgery. Sept. 26th: 9.30 A.M., Formal opening of the Congress; opening of the Exhibitions of Fractures and of Surgical Apparatus. 10.30 A.M., The Diagnosis of Pancreatitis, by Professor Dr. Gaston Michel of Nancy. 2 P.M., The Treatment of Pancreatitis, by Professor Dr. W. Körte of Berlin and M. Giordano. 9 P.M., Reception to the members of the Congress by Professor Lucas-Championnière, President of the International Society of Surgery. Sept. 27th: 9 A.M., Pneumothorax, Ways and Modes of Access; Emphysema, by M. Garré of Bonn; Acute Purulent Pleurisy, by Professor Dr. H. Gaudier of Lille; Pleural Fistulæ, by M. Girard. 2 P.M., Pleuro-pulmonary Wounds, by Professor Ch. Lenormant; Pulmonary Tumours and Parasites, by Professor A. H. Ferguson of Chicago. Sept. 28th: 9 A.M., Demonstrations of the Treatment of Fractures. 2 P.M., General meeting. 3 P.M., Pleuro-pulmonary Abscess and Gangrene, by M. Van Stockum; Bronchiectasia, by Professor Sauerbach of Zürich. 7.30 P.M., Banquet. Sept. 29th: 8 A.M., The Surgical Treatment of Pulmonary Tuberculosis, by M. P. L. Friedrich of Marburg. 10 A.M., Acute Colitis, by Professor E. Sonnenburg of Berlin. 3 P.M., Chronic Colitis, by M. Ségond, Dr. C. L. Gibson of New York, Mr. D'Arcy Power of London. Discussions will take place on all the papers. 8 P.M., Special performance at the Théâtre Royal de la Monnaie.

THE BRITISH HOSPITALS ASSOCIATION.—The second annual conference of this association, whose object is to promote the discussion of matters connected with hospital management and to give opportunities for the acquisition of a knowledge of hospital administration, will be held in Manchester on Thursday and Friday, Sept. 28th and 29th. The first day will be devoted to a discussion on the National Insurance Bill and its probable effects upon the voluntary hospitals, in which the following are expected to take part: Sir William Cobbett, chairman, Royal Infirmary, Manchester; Mr. Charles Lupton, chairman, General Infirmary, Leeds; Dr. D. J. Mackintosh, M.V.O., superintendent, Western Infirmary, Glasgow; and Mr. Howard J. Collins, house governor, General Hospital, Birmingham. On Friday papers will be read as follows: (1) Representation of Honorary Medical Staffs upon Boards of Management of Voluntary Hospitals, by Dr. E. S. Reynolds, chairman of the medical board, Manchester Royal Infirmary; and (2) The Methods of Distribution of Hospital Saturday and Sunday Funds, by Mr. Charles Hopkinson, member of the board, Manchester Royal Infirmary. The meetings of the conference will open each day at 10 A.M. in the Lord Mayor's parlour at the Town Hall. Members of the association will be entertained at luncheon each day by the United Hospitals of Manchester, and the Lord Mayor will hold a reception on the afternoon of the first day, while visits of inspection to the various local

hospitals will be arranged. The honorary local secretary is Mr. W. G. Carnt, Royal Infirmary, Manchester. Trustees, members of committees or executive, and professional heads of hospitals and kindred institutions are eligible for membership. Application should be made to Mr. Conrad W. Thies, Royal Free Hospital, London, W.C., the honorary treasurer.

PRESENTATION TO A MEDICAL PRACTITIONER.—Dr. R. F. Gill of King Henry's-road, South Hampstead, who recently retired from active work owing to ill-health, has been presented by his former patients and friends with a cheque for £120 and other gifts as a mark of their esteem.

LONGEVITY.—Mrs. Drew, of Arden Caple House, near Helensburgh, Dumbartonshire, celebrated the anniversary of her hundredth birthday on August 1st, and received a letter of congratulation on behalf of the King. In 1829 Mrs. Drew met and conversed with Sir Walter Scott in her aunt's house at Orbiston, Lanarkshire.

Dr. Halls Dally, whose paper on Pachon's Sphygmo-oscillometer was published in THE LANCET last week, wishes to remedy an oversight in his work. He omitted by accident to refer to a communication on the estimate of blood pressure by means of the sphygmo-oscillometer which was published in the *British Medical Journal* of Dec. 3rd, 1910.

NOTIFICATION OF ACUTE POLIOMYELITIS.—The London County Council has made an Order that in the Administrative County of London, Section 55 of the Public Health (London) Act, 1891, with respect to the notification of infectious diseases, shall apply to acute poliomyelitis or acute polio-encephalitis. The Order, which has been approved by the Local Government Board, came into operation on Sept. 1st, and will continue in force until March 12th, 1912.

THE SOUTHWARK MORTUARY.—At the Southwark coroner's court, on August 30th, Dr. F. J. Waldo again called attention to the necessity for new mortuary accommodation in the district, and said that perhaps an alteration would be made owing to the publicity which had been given to the matter from time to time. If an improvement was made, he thought it would be better for the health of the district, the death-rate of which had been very high. Dr. Waldo further mentioned that every time he called a jury, half an hour or more was wasted owing to the distance of the mortuary from the court. A jury had recently complained that the children in the churchyard playground adjacent to the mortuary were distressed by the foul emanations proceeding from the mortuary. Medical men also objected to making necropsies in such an atmosphere.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD: MEDICAL SCHOLARSHIPS AND EXHIBITIONS.—In addition to the scholarships previously advertised, two scholarships in arts and science and two scholarships in anatomy and physiology, tenable at Charing Cross Hospital Medical School, will be offered for competition at the September examination of the London Inter-Collegiate Scholarships Board. On the results of this examination, therefore, elections will be made to 32 entrance medical scholarships, tenable at the following schools of the University of London: University College, King's College, Westminster Hospital, St. George's Hospital, Charing Cross Hospital, London School of Medicine for Women, University College Hospital, and King's College Hospital. Further information may be obtained from the deans of the respective medical schools, or from the secretary of the board, Mr. Alfred E. G. Attoe, University of London, University College (Gower-street, London, W.C.).

BOOKS, ETC., RECEIVED.

UNIONE TIPOGRAFICO-EDITRICE TORINESE, Torino (Corso Raffaello, 28), Milano, Roma, Napoli.

Prof. D. B. Roncali. Trattato dei Neoplasmi Maligni, preceduto da uno Studio sulle Infezioni Chirurgiche in Generale. Volume primo. Price L.34.

UNIVERSITY OF CHICAGO PRESS, Chicago, Illinois. CAMBRIDGE UNIVERSITY PRESS, London and Edinburgh.

Contributions to Medical Science by Howard Taylor Ricketts, 1870–1910. Published as a Tribute to His Memory by his Colleagues under the Auspices of the Chicago Pathological Society. Price 20s. net.

UNWIN, T. FISHER, London.

The Town Child. By Reginald A. Bray, L.C.C. Second edition, revised. Price 3s. 6d. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Die Experimentelle Bakteriologie und die Infektionskranheiten, mit besonderer Berücksichtigung der Immunitätslehre. Ein Lehrbuch für Studierende, Aerzte und Medizinalbeamte. Von Dr. W. Kolle und Dr. H. Hetsch. Dritte, erweiterte Auflage. Zweiter Band. Price of the complete work in two volumes, paper, M.30 or K.36; bound, M.34 or K.40.80.

VOGEL, F. C. W., VERLAG VON, Leipzig.

Spezielle Diagnose der Inneren Krankheiten. Ein Handbuch für Aerzte und Studierende. Nach Vorlesungen bearbeitet von Dr. Wilhelm v. Leube, Professor der medizinischen Klinik und Oberarzt am Juliusspital in Würzburg. I. Band. Achte neu bearbeitete Auflage. Price, paper, M.14; bound, M.15.50.

WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE, University of Pennsylvania, Philadelphia.

University of Pennsylvania. Contributions from the William Pepper Laboratory of Clinical Medicine. (Reprints.) No. 7. 1909 and 1910. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

The Deaf Child. A Manual for Teachers and School Doctors. By James Kerr Love, M.D., Aural Surgeon, Glasgow Royal Infirmary. Price 4s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

FORDE, ROBERT MICHAEL, L.R.C.P. & S. Edin. (Principal Medical Officer), has been appointed an Official Member of the Legislative Council of the Colony of Sierra Leone.

HOLMES, PATRICK JOHN, L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Killaloe District of the county of Clare.

KIRK, THOMAS DICK, M.D., M.Ch. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Montgomery District of the counties of Montgomery and Salop.

MATHIESON, D. MORLEY, M.D. Edin., D.P.H., has been appointed Medical Officer of Health and Medical Superintendent of the Infectious Diseases Hospitals for the County Borough of South Shields.

MOXON, HERBERT W., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Matlock District of the county of Derby.

WHELAN, JOHN B. B., M.D. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ruskington District of the county of Lincoln.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

AYR DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BIRMINGHAM GENERAL HOSPITAL.—Dental Surgeon. Salary £50 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board, residence, and washing.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, attendance, &c.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, attendance, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

CROSSLEY SANATORIUM, Delamere Forest, Cheshire.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £125 per annum. Also Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum. With board, apartments, laundry, &c., in each case.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

DUNFERMLINE, CARNEGIE DUNFERMLINE TRUST.—Assistant Medical Officer. Salary at rate of £250 per annum.

EALING, KING EDWARD MEMORIAL HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, apartments, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician and House Surgeon. Salary in each case at rate of £75 per annum, with board, residence, and laundry.

EDINBURGH SCHOOL BOARD.—Assistant Medical Officer. Salary at rate of £250 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician and Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—House Physician for six months. Salary at rate of £70 per annum, with board and residence.

HASTINGS, EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing. Also Assistant House Surgeon. Salary at rate of £50 per annum with residence, board, and washing.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOLBORN UNION INFIRMARY, Archway-road, Upper Holloway, N.—Second Assistant Medical Officer. Salary £80 per annum, with board, apartments, and washing.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER BOROUGH LUNATIC ASYLUM.—Medical Superintendent. Salary £800 per annum.

LEICESTER INFIRMARY.—House Physician. Salary at rate of £100 per annum, with board, lodging, and washing.

LEITH HOSPITAL.—Out-door Visiting Physician for six months. Salary at rate of £100 per annum, with board.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

LIVERPOOL DISPENSARIES.—Head Surgeon, unmarried. Salary £170 per annum, with board and apartments. Also Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LONDON COUNTY COUNCIL.—Medical Officer of Health of the County of London. Salary £1250 a year and travelling expenses.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, 26, Margaret-street, W.—Honorary Physician. Also Honorary Dental Surgeon.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich road, S.E.—Senior and Junior House Surgeon, each for six months. Salaries at rate of £100 and £80 per annum respectively, with apartments, board, attendance, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

PRESCOT UNION WORKHOUSE AND INFIRMARY, Whiston.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, board, washing, &c.

PRESTON ROYAL INFIRMARY.—Senior House Surgeon, unmarried, for six months. Salary £80 per annum, with board, residence, and washing.

PRETORIA LUNATIC ASYLUM.—Junior Medical Officer. Salary £360 per annum, with quarters, rations, fuel, light, washing, and attendance.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

RAROTONGA, COOK ISLANDS.—Assistant Medical Officer. Salary £350 per annum.

ROCHDALE INFIRMARY.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Dental Surgeon.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Act at Slaithwaite, in the West Riding of Yorkshire.

Births, Marriages, and Deaths.

BIRTHS.

BUTT.—On August 31st, at Randfontein, Transvaal, the wife of H. T. Hayward Butt, M.B., M.R.C.S., L.R.C.P., of a son.

HANSON.—On Sept. 5th, at Frognal, Hampstead, the wife of Reginald John Edward Hanson, F.R.C.S E., of a son.

HEATH.—On August 31st, at Weymouth-street, W., the wife of P. Maynard Heath, M.S., F.R.C.S., of a son.

NIMMO.—On August 7th, at Chakrata, United Provinces, India, the wife of Captain Wilfrid C. Nimmo, R.A.M.C., of a daughter.

PORTER.—On August 29th, at St. James's-road, Surbiton, the wife of George Porter, M.D., of a daughter.

MARRIAGES.

BRUCE—OWEN.—On August 31st, at St. Michael's, Playden, by the Rev. J. Casper Lintott, Harold Wilson Bruce, M.D., to Ethel Madeline, second daughter of the late Frank Owen of Rye.

DICK—DUKE.—On August 30th, at St. Andrew's Church, Muswell Hill, John Lawson Dick, M.D., F.R.C.S., to Norah Winiefred, daughter of the late Captain W. E. Duke.

GOODING—SEEL.—On Sept. 2nd, at the Church of the Holy Innocents, South Norwood, Simonds Gooding, M.D., to Edith May, daughter of Thomas J. Seel.

MORLEY—DIXEY.—On Sept. 1st, at Union Chapel, Islington, Edwin B. Morley, M.B., B.S., to Ada Mary, daughter of Albert Dixey.

ROBERTS—NICHOLSON.—On August 31st, at St. Michael's Church, Hoveringham, Notts, by Rev. J. E. Kent, M.A., Chaplain to Royal Army Medical Corps, Territorial, and Rev. A. M. Y. Bailey, M.A., Vicar, Charles Roberts, F.R.C.S., to Ethel, second daughter of Arthur Nicholson, of Burnside, Hoveringham. At home, Ravensbourne, Victoria Park, Manchester, Oct. 24th, 25th, and 26th.

WARING—RELTON.—On August 29th, at St. John's Cathedral, Hong-Kong, Captain Arthur Durham Waring, R.A.M.C., to Gladys Frances Lyons Relton, daughter of Arthur John Relton.

DEATHS.

CANE.—On Saturday, Sept. 2nd, at St. Oswald's, Meads, Eastbourne, Leonard Cane, M.D., aged 63, late of the Mansion House, Peterborough. Cremated at Golder's Green on Wednesday, Sept. 6th, at 2.30 P.M.

WYNNE.—On Sept. 1st, at Eryl Môr, Newquay, John Kendrick Wynne, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HUSTLE.

THE following breathless itinerary was handed to a correspondent of THE LANCET by the cicerone of a party of Americans from the Southern States who were "doing the English lakes" between the evening of one day and the afternoon of the next. The travellers were not unintelligent. Indeed, they were mostly ladies with the courtesy of manner which American writers claim to be peculiar to Georgia and Virginia. This demeanour was in strange contrast to the austere bluffness of the people among whom for a brief spell they found themselves. Naturally they looked excessively tired, and the medical eye discovered among them the traces of dyspepsia and nerve-strain due to accomplishing a tour almost identical with that here printed. The document *donne furieusement à penser* both on psychological and hygienic grounds. It is also an ethnological curiosity.

VISITING ENGLAND, FRANCE, BELGIUM, HOLLAND, GERMANY, AUSTRIA, SWITZERLAND, AND ITALY.

July 22nd, Saturday.—Sail on ss. *Cincinnati* (18,000 tons), Hamburg-American Line ($105.00 berth).

July 31st, August 1st, 2nd, 3rd, 4th, Monday, Tuesday, Wednesday, Thursday, and Friday.—In London.

August 5th, Saturday.—Leave for Paris *viâ* Newhaven-Dieppe, stopping at Rouen.

August 6th, 7th, 8th, 9th.—In Paris (Grand Hotel du Louvre).

August 10th, 11th, 12th, Thursday, Friday, and Saturday.—Motor *viâ* Versailles to Blois, to Orleans, Touraine Country, Fontainebleau, and return to Paris.

August 13th, Sunday.—In Paris.

August 14th, Monday.—To Brussels.

August 15th, Tuesday.—In Brussels (Grand Hotel).

August 16th, Wednesday.—Leave *viâ* Antwerp to the Hague.

August 17th and 18th.—In the Hague and Scheveningen (Hotel Paulez).

August 19th and 20th, Saturday and Sunday.—Amsterdam and Isle of Marken (Hotel Victoria.)

August 21st, Monday.—To Cologne (Hotel Disch).

August 22nd, Tuesday.—Up the Rhine to Mayence (Rheinerscherhof).

August 23rd, Wednesday.—*Viâ* Wiesbaden to Heidelberg.

August 24th, Thursday.—In Heidelberg (Schloss Hotel).

August 25th, Friday.—Leave for Munich.

August 26th, Saturday and Sunday.—In Munich (Hotel Bellevue).

August 29th, Tuesday.—Down Danube to Vienna.

August 30th and 31st, Wednesday and Thursday.—In Vienna (Hotel Metropole).

Sept. 1st, Friday.—To Innsbruck.

Sept. 2nd, Saturday.—To Lucerne.

Sept. 3rd.—In Lucerne (Hotel des Balances).

Sept. 4th, Monday.—Travel *viâ* lake and train to Andermere and coach over Furka Pass to Rhine Glacier (Rhine Glacier Hotel).

Sept. 5th, Tuesday.—Coach 32 miles along the Rhone River to Brieg and train to Zermatt.

Sept. 6th and 7th, Wednesday and Thursday.—In Zermatt (Mont Cervin Hotel).

Sept. 8th, Friday.—Leave *viâ* Visp to Brieg and coach over the famous Simplon Pass to Pallanza along Lake Maggiore (Grand Hotel Pallanza).

Sept. 9th, Saturday.—Italian Lakes to Milan.

Sept. 10th, Sunday.—Morning to Milan and afternoon to Venice.

Sept. 11th, 12th, 13th.—In Venice (Grand Hotel on Grand Canal).

Sept. 14th, Thursday.—To Rome.

Sept. 15th, 16th, 17th, 18th, 19th, 20th.—In Rome (Hotel Michel).

Sept. 21st, Thursday.—To Naples (Grand Hotel Santa Lucia).

Sept. 22nd, 23rd, 24th.—Pompeii, Sorento, Capri, and in Naples.

Sept. 25th, Monday.—To Florence.

Sept. 26th, 27th, 28th, 29th.—In Florence (Grand Hotel de la Ville).

Sept. 30th, Saturday.—*Viâ* Pisa to Genoa.

Oct. 1st, Sunday.—Afternoon to Monte Carlo.

Oct. 2nd, Monday.—Motor over Upper Corniche Road to Nice and train to Marseilles.

Oct. 3rd, Tuesday.—To Paris.

Oct. 4th and 5th.—In Paris.

Oct. 6th.—Sail *viâ* s.s. *Bluecher*, Hamburg-American Line ($90.00 berth).

Oct. 14th.—Due in New York.

HOSPITALS AND CHARITABLE INSTITUTIONS IN URUGUAY.

His Majesty's Minister in the Republic of Uruguay, Mr. R. J. Kennedy, in his annual report, states that the total population is a little over 1,000,000, and includes 1324 British subjects. Only those are returned under this head who were born outside of Uruguay; children born in the country of British subjects are Uruguayans, enjoying all the privileges and liable to all the obligations appertaining to Uruguayan citizenship. In 1886 a National Commission of Charity and Public Benefaction was created as a State institution under the supervision of the Ministry of the Interior. The Hospital of Charity was placed under the management of this Commission, and the property held by it is valued at £570,000; the principal source of revenue, amounting annually to about £270,000, is the profit derived from the sale of State lottery tickets. A charge, fixed periodically by the Commission, is made for admission to the various institutions under its management. Amongst these may be mentioned the Orphans and Foundlings Asylum, the Mendicants and Incurables Asylum, the Lunatic Asylum, the Isolation Hospital for Infectious Diseases, three asylums for children between the ages of 2 and 8 years, and a deaf and dumb institute. The cost of maintenance in these institutions is estimated per month as follows: Monte Video Hospital of Charity, £4 2*s.* *d.*; Mendicants and Incurables Asylum, £1 18*s.* 4*d.*; Orphans and Foundlings Asylum, £2 9*s.* 5*d.*; Lunatic Asylum, £1 8*s.* 6*d.*; Isolation Hospital, £4 12*s.* 4*d.* Besides these institutions there are in Monte Video several private hospitals and nursing homes, and a British, an Italian, and a Spanish hospital; also, all the chief provincial towns are provided with hospitals managed by the local authorities. During the year 1910 617 indoor patients were treated at the British Hospital, and of this number 437 were discharged as cured and 94 as improved.

The British Hospital was founded 22 years ago as a British seamen's hospital, and is probably at the present time the best managed hospital institution in Monte Video. It contains accommodation for about 50 patients, including paying patients who occupy private or semi-private rooms, and it receives sick persons of all nationalities on the recommendation of subscribers, preference being always given to British or North American nationality. The building occupied by the hospital is old and out of date, and for several years this has been impressed upon those interested. A new and up-to-date building in a more suitable place than its present overcrowded locality has been greatly needed, but the difficulty with which the hospital committee (of which the British Minister is *ex-officio* chairman) was confronted was the want of funds. This has now been solved by devoting to the building of a new hospital the subscriptions paid into the King Edward VII. Memorial Fund. Nearly £6000 are thus available, and that sum, together with the estimated value of the old hospital (which is to be sold) and the issue of bonds to the value of £6000 (all taken up privately by friends and well-wishers), will provide the full amount necessary. Plans and estimates have been prepared; the new building will be begun this year, and it will be known as "The British Seamen's and King Edward VII. Memorial Hospital." The generous manner in which many Uruguayan commercial firms subscribed towards this memorial testifies in an eloquent manner to the warmth of Anglo-Uruguayan friendship.

CHILDREN'S COUNTRY HOLIDAYS FUND.

To the Editor of THE LANCET.

SIR,—I venture to ask the hospitality of your columns on behalf of the Children's Country Holidays Fund. The object of the Fund is to send to the country for a fortnight the children of the poorest classes in London. Those of us who are now enjoying our annual holidays are best able to realise what such a fortnight must mean to children whose horizon would otherwise always be bounded by streets and slums, and we venture to appeal for assistance in order to carry out this work.

The expenses of the Fund increase annually, and this year they have been exceptionally heavy, and unless we are able to speedily obtain the sum of £3000 the work of the Fund will have to be seriously curtailed. Subscriptions and donations will be gratefully received and acknowledged by me here.—I am, Sir, yours faithfully,

ARRAN,
Honorary Treasurer, Children's Country Holidays Fund.

18, Buckingham-street, Strand, W.C., August 31st, 1911.

SOME SAMOAN DISEASES.

Mr. T. Trood, Acting British Vice-Consul for Samoa (or Navigator Islands), in his report for 1910 describes a visit to Samoa from Dr. N. Leber, of the Imperial University Hospital for Eye Diseases, Berlin, and Dr. von Provaczek, from the Institute for Ship and Tropical Diseases, Hamburg. These gentlemen investigated the epidemic eye diseases prevalent in Samoa for several years, their main object being to find out the causes as well as the means whereby they can be stamped out. Their visit was a great boon to the islands, for many of the native inhabitants were suffering from eye diseases. Their treatment has been singularly successful, for the Government having brought them out,

they rendered advice gratis to all native patients. The report says further: "Dr. von Provaczek has made experiments regarding the 'hook-worm' disease and other tropical complaints. He has also examined horses suffering from disease peculiar to the climate, and, I am told, strongly recommends the appointment for Samoa of a veterinary surgeon. In Tutuila for many months past the medical gentlemen attached to the Government staff and navy have been combating the 'hook-worm' disease, very prevalent there formerly, with great advantage to the Tutuila residents, foreigners as well as natives."

A WARNING.

To the Editor of THE LANCET.

SIR,—A consulting-room thief is on the warpath, and his method is a variant on some older ones. He is a foreigner—German, I think—speaking English indifferently. He presented a card bearing the name of a Toronto firm (which I forget), and had a slip of paper on which was written the title of an old article of mine. He was anxious to get this and any other useful books and pamphlets, explaining that a large sum of money had been left for the purpose of forming a library. I paid little heed to his incoherent story, and, being anxious to get rid of him, I told him to apply to THE LANCET Office, and left the room for less than a minute to get the date of the article from the Medical Directory. He was profuse in thanks and apologies, and backed himself—and my opera-glasses—out of the house. As my house is a home for nerve cases and bears no professional plate, and is situated in a retired spot, the thief must have had local knowledge.

I am, Sir, yours faithfully,

St. George's-terrace, N.W., Sept. 5th, 1911. J. SCOTT BATTAMS.

*** Dr. Scott Battams has perhaps made the acquaintance of a gentleman against whom the profession was warned in THE LANCET of August 5th, 1911 (p. 419).—ED. L.

"A GATE BEAUTIFUL."

THIS is the title of a sixpenny publication issued from the offices of the Ragged School Union, 32, John-street, Bedford-row, London, W.C. Tens of thousands of children in London are beneficiaries of its activity, which is expended in looking after the health, food, clothing, religious training, physical development, and recreation of the little dwellers in "slum-land," the "drift children." It is profusely illustrated, the pictures giving a good insight into the far-reaching domain of its work. The Ragged School Union was one of the fortunate recipients of a gift, on the apportionment of the King, out of the munificent sum left by the Maharaja of Gwalior for distribution. A picture on the cover shows a boy scout helping along a little cripple.

WEATHER INSTRUMENTS FOR AMATEUR METEOROLOGISTS.

WE have received a sixpenny booklet entitled "Weather Instruments and How to Use Them," by Mr. D. W. Horner, which describes in clear and simple language the meteorological instruments employed at the "second order" stations of the Royal Meteorological Society. It is intended as a companion work to the author's little handbook on "Observing and Forecasting the Weather," and both are published by Witherby and Co., 326, High Holborn, London, W.C. There must be many people who take a mildly scientific interest in the weather, and who would like to know how to set up and read and take care of, or at least how to understand, such common meteorological instruments as the rain gauge, the wet and dry bulb thermometer, the barometer, the sunshine recorder, and the wind gauge. This small work tells them how to do so in a very readable way. Every amateur who reads it will in future study the weather reports in the newspapers with new interest and understanding, and will be able, if he wishes, to make his own meteorological observations and records in a scientific manner.

H.—(1) The costs are very usually borne by both in common; (2) there is no such place, charitable institutions being compelled to decline such responsibilities.

Everybody's Mug has not confided his name and address to us.

ERRATUM.—*Anderson's College Medical School, Glasgow.*—We are informed by the house superintendent of the Glasgow Maternity and Women's Hospital, which is alluded to in our Students' Number under the heading of this school, that the fee for students for three months' attendance at the hospital is 4 guineas and 2 guineas for the nine months immediately following; and not, as was stated in the Students' Number, 3 guineas for six months.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement.

The following Congresses, Conferences, and Exhibitions are announced for September, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
August 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Etudes Médicales."
Sept. 2nd–9th (London).—Bakers' and Confectioners' Exhibition.
,, 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 9th–20th (Turin).—International Congress of the Applications of Electricity.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–13th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 17th–20th (Turin).—Second National Congress of Guardians of Training Schools and Prisons.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–23rd (Paris).—International Conference of Genetics.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th and 29th (Manchester).—Conference of British Hospitals Association.
,, 28th–30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. I. Back: Clinique (Surgical).
THURSDAY.—4 P.M., Dr. C. Wall: Clinique (Medical).
FRIDAY.—4 P.M., Mr. R. E. Bickerton: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON) Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.
TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.
THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.
FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (16th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

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Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 6th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 31	30·27	S.W.	0·11	118	75	54	56	58	Fine
Sept. 1	30·19	S.W.	...	121	79	55	58	61	Fine
" 2	30 07	S.E.	...	129	89	60	63	69	Fine
" 3	30 22	N.W.	...	109	76	61	62	65	Cloudy
" 4	30·29	E.	...	110	74	60	61	64	Cloudy
" 5	30·21	N.E.	...	110	79	61	60	63	Fine
" 6	30·27	S.	...	119	84	60	60	64	Fine

The following journals, magazines, &c., have been received:—
Medical Chronicle, School Hygiene, Annals of Tropical Medicine and Parasitology, Guy's Hospital Gazette, Indian Public Health and Municipal Journal, Transvaal Medical Journal, Practitioner, Archives of Pediatrics, Archives of the Roentgen Ray, Public Health, Edinburgh Medical Journal, Monthly Cyclopædia and Medical Bulletin, Polyclinic, International Journal of Surgery, Dominion Medical Monthly and Ontario Medical Journal, Journal of the Royal Sanitary Institute.

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ABSTRACT OF A

Presidential Address

ON

A REVIEW OF THE VITAL STATISTICS OF IRELAND SINCE 1864.

Delivered before the Vital Statistics Section of the Congress of the Royal Institute of Public Health, Dublin, on August 15th, 1911,

BY SIR WILLIAM J. THOMPSON, M.D.,
REGISTRAR-GENERAL FOR IRELAND.

GENTLEMEN,—The reason for taking 1864 as the starting-point is that the General Register Office for Ireland was first opened on Jan. 1st of that year, 27 years in the wake of the English Office and nine years after that of Scotland. This office, as it is now constituted, is therefore 47 years old, although the registration of Protestant marriages dates back to 1845, so that we are able to review approximately half a century's record of marriages, births, and deaths.

DECREASING EMIGRATION.

I think we can safely say there is no country in Europe which has so steadily declined in population as Ireland since the year 1845. From a comparative view of the Census populations for nine decades it will be seen that the population increased in 1831 and 1841, and that decreases were recorded in 1851, 1861, 1871, 1881, 1891, 1901, and in 1911. We observe with pleasure that the decrease for the last decennial period is only 1·7 per cent.

The first published annual report of the Registrar-General for Ireland was that for the year 1864, and the last for the year 1910. The birth- and death-rates have varied little for the past 30 years; the marriage-rate shows an upward tendency, and the rate for emigration a decided fall. We have good reason to be pleased with the birth-rate, seeing that in France, England, the United States, and other countries it shows a steady and continuous decrease. That it has shown so little variation in this country is the more remarkable, having regard to the high rate of emigration during the past 30 years, and to the fact that practically 85 per cent. of emigrants leave between the ages of 15 and 35, the period in the life of the individual which is of the most economic value to the State. The average annual number of emigrants for the ten years 1900–1909 was 35,886—a very great decrease on the ten years 1890–1899, the average annual number emigrating being 44,955—while going back for a further decennial period, 1880–1889, we get the appalling average annual number, 80,491. Comparing the number of emigrants last year, 32,457, with this figure, 80,491, we see that the emigration-rate in the ten years 1901–1910 was practically only half what it was in the decade 1881–1890. The emigration figures for the present year, up to the end of July, show a decrease of 353, as compared with the same period of last year. The average yearly decrease in emigration for the period 1900–1909 is having its effect on the marriage-rate, which for the past 20 years has, if anything, increased, a good sign of increasing prosperity, as it is generally recognised that people do not engage in matrimony in times of commercial or agricultural depression.

PRINCIPAL EPIDEMIC DISEASES.

If we investigate the death-rate further, which in the period under review has shown a tendency to fall, we find that the deaths from practically all the principal epidemic diseases have become less in number. Taking quinquennial periods from 1866 to 1910, in the first of these periods the rate for scarlet fever was so high as 5·5 per 10,000 living, at which figure it remained for about 10 years. It then commenced to fall and has continued to do so steadily ever since, until it has now reached the low figure 0·3. The reduction of this death-rate is Ireland is much to the credit of the medical profession and all those working in the field of public health.

An investigation of the rates for typhus fever shows that the death-rate has fallen from 1·4 in the quinquennial period, 1871 to 1875, to 0·1 in the last period shown.

We come now to enteric fever, the death-rate for which has fallen from 1·8 per 10,000 for the period 1871–1875 to 0·8 for the period 1906–1910. Typhoid fever, considered generally, is a disease of middle life, and the saving of life at that age is a most valuable asset to the country. These three fevers—scarlet fever, typhus, and typhoid—are compulsorily notifiable diseases, and the substantial reduction of their death-rates in Ireland is a strong, and, in my opinion, an unanswerable, argument in favour of compulsory notification of infectious diseases. This point comes out more prominently and forcibly when we examine the charts for measles and whooping-cough, epidemic diseases which are voluntarily notifiable. From the chart for measles we see that the death-rate per 10,000 living was 1·9 for the period 1866–1870, and 1·4 for the period 1906–1910. Again, the death-rate for whooping-cough only shows a fall of 0·9—viz., from 3·3 to 2·4 for the same periods. The Registrar-General can only deal with figures, not with causes and effects, but this point—viz., that the death-rate for infectious diseases which are compulsorily notifiable has decreased much more than that for infectious diseases which are voluntarily notifiable—is one, in my opinion, deserving the serious consideration of all those who have the health and welfare of our country at heart.

TUBERCULOSIS.

Tuberculosis is now recognised as an infectious disease, and the active campaign carried out as a part of the propaganda of the Women's National Health Association, an association inaugurated, guided, directed, and presided over by the President of our Congress, reinforcing and coöperating with the efforts of local health authorities, has had a most telling effect since its inception in 1907, as shown in the reduction of the death-rate in four years from 2·7 to 2·3 per 1000 living, the lowest rate yet recorded. There were 1663 fewer deaths from tuberculosis in 1910 than in 1907, representing a decrease of no less than 32 deaths per week as compared with the number in 1907. We will now consider the death-rate for males and females (*a*) from all forms of tuberculosis and (*b*) from phthisis. We see these are about equal. It will be seen that the female sex has the higher death-rate between the ages 10–15 and 15–20, the figures for the first period being: females, 1·7; males, 0·9; and for the second period: females, 2·8; males, 2·1 respectively; while for all the other periods (except the last, 85 years and upwards) the male death-rate is the higher, particularly so in the period 45–55, when it is 2·7, the female rate at that period being 1·9. This is the first time this point has been so clearly brought out, and it is most instructive.

INFANTILE MORTALITY.

When we come to consider the deaths of infants under one year, our general death-rate in Ireland for such is comparatively low, and we compare favourably with both England and Scotland. The rate of infant mortality for the three countries is: for Ireland, for the year 1909, 92 per 1000 births registered; England, for the year 1909, 109 per 1000 births registered; Scotland, for the year 1908, 121 per 1000 births registered. In 1910 our rate increased slightly—95 per 1000 births. For the past few years the infant mortality rate for England has decreased, whereas ours has remained about stationary. In England and Scotland a vigorous campaign, both voluntary and in connexion with the Early Notification of Births Act, has been going on in regard to this high infant death-rate, with beneficial results in England. In Ireland the infant death-rate in Dublin, Belfast, and Cork compares somewhat unfavourably with some of the great English and Scotch towns, but the rate in the rural districts, as in all agricultural countries, is low, hence our average rate is less than three figures. There is, therefore, an opening in these three cities for good and effective work.

The principal causes of deaths of children under one year are atrophy and debility, which are practically double that of diarrhœal diseases. A large number of these deaths might be prevented. We cannot, I think, blame the mothers too much, because they have never had the opportunity of being instructed in the management of infants, and lack of nourishment from absolute poverty and the evils consequent on overcrowded and bad housing are responsible for much. Efforts in these directions, however, are now being made, both by municipalities and philanthropic associations. Ireland has been a pioneer, for instance, in the establishment of Babies'

Clubs, another of the many good works inaugurated under the auspices of your noble President.

INFLUENZA AND CANCER.

Turning now to diseases which show an upward death-rate tendency, influenza and cancer stand out most prominently. Twenty-two years ago influenza was almost unknown amongst us, but for the past 21 years it has claimed a great number of victims. The rates of death for this disease are particularly high for the two years 1892 and 1900 respectively. I think the medical profession will agree with me that the deaths from influenza are too numerous. This is owing, in a great measure, to the fact that it often comes on insidiously, and patients or their friends do not recognise its seriousness, with the result that the doctor is not called in until too late. Incidentally this leads up to another subject, the high percentage of uncertified deaths in Ireland as compared with England and Scotland. It is a well recognised fact that no profession does so much gratuitous work as the medical profession, and there is, therefore, no cause for such a large percentage of uncertified deaths, medical aid being easily procurable for our poorest people.

The other disease which has increased, not only in Ireland, but also in England and Scotland, is cancer. Last year there were no less than 3664 deaths registered in Ireland from malignant disease. The death-rate from cancer in Ireland has risen from 2·7 per 10,000 living in 1864 to 8·4 in 1910, an increase of 5·7. In England the increase has been 5·6, from 3·9 per 10,000 living in 1864 to 9·5 in 1909, and in Scotland the death-rate for this disease has ranged from 4·3 in 1864 to 9·6 in 1908, an increase of 5·3. Ireland shows a greater increase than England or Scotland. It is asserted by some medical authorities that this is more apparent than real and that the increase is due, in part at least, to a more accurate diagnosis of malignant disease. This is a theory which it is difficult to contradict definitely, and, if true, it applies equally to England and Scotland. With the advance of medical education and the introduction of post-graduate classes medical men are more scientifically trained, and, consequently, likely to be more accurate in diagnosis. Besides, certain morbid conditions are now classified as cancer that some quarter of a century ago were not placed in this category.

SUMMARY.

Summing up the deductions from this review of Irish vital statistics for the past 47 years, we find that (1) emigration has enormously decreased; (2) the birth-rate, notwithstanding emigration and a decreasing population, has remained almost stationary; (3) the marriage-rate has increased of late years; and (4) the death-rate, after many fluctuations, is decreasing. If to these we add some facts which have been brought out in the preliminary report of this year's Census, facts of such significance as would require a separate paper—(*a*) the number of inhabited houses in Ireland has increased; (*b*) the number of houses being built has also increased; (*c*) the number of families has increased; (*d*) the number of uninhabited houses has decreased—we cannot do otherwise than conclude that Ireland is to-day a better, healthier, and more prosperous country than it was half a century ago.

ELEMENTARY MEDICAL TRAINING FOR MISSIONARIES.—Much attention has recently been devoted to the preparation of missionaries for work abroad, and it has been shown that some elementary knowledge of medical subjects is a necessity for all. The time which should be spent in this study varies according to the part of the world in which the intending missionary expects to work, those labouring in isolated spheres needing the longest periods of training. Livingstone College, which makes special provision for this branch of missionary training, has arranged courses of study, theoretical and practical, suitable for the case of all men going to the foreign mission field, varying in length from nine months, which is the full session, to one week of lectures on tropical hygiene. This last is the only course which is open to women as well as men; not that it is less necessary for women to have some knowledge of elementary medical subjects, but because in their case a short course of practical nursing is probably the best preparation for missionary life abroad. The principal of the college will be pleased to advise any who will write to him at Livingstone College, Leyton, E. The new session will commence on Oct. 2nd.

A Clinical Lecture

ON THE

TREATMENT OF CONSTIPATION.

Delivered at the Queen's Hospital, Birmingham,

BY SIR JAMES SAWYER, M.D. LOND., F.R.C.P. LOND., F.R.S. EDIN.,

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GENTLEMEN,—When you enter into your practice, perhaps the treatment and the cure of habitual constipation will engage your attention oftener than other details of our remedial art. Although this subject is of the tritest, it is well worth frequent revision. We must keep it always in our minds in our daily work as medical men, and it becomes us to reconsider it often by the lights, respectively and combinedly, of physiological, clinical, pathological, and therapeutic progress. In this great subject, as in so many others of ours, clinical observation and physiological investigation go on working together in converging directions, with the best results in practice, sometimes the one anticipating, and each confirming, the other.

Constipation is retarded progress of fæces from the cæcum to the rectum, or it is retention of fæces in the rectum (dyschezia), or it is both of these. In our conceptions of the causes, progress, and cure of habitual constipation we must include the knowledge that human fæces consist in great part of excrementitious matters excreted by the glands of the intestinal mucous membranes as well as of insoluble and superfluous food, mixed with intestinal mucus and biliary and pancreatic excretions. Human excrement, then, is made up of glandular and other excretions, as well as what may be called alimentary refuse. We must recognise both these factors and not contemplate the dietetic effluent only. The manifold errors of what may be called habits of life and ways of living, of defæcational effort, and of diet, which are causal as to constipation, are well understood. In their continued and persistent rectification may be found the cure, without the exhibition of drugs, of most of the slighter forms of costiveness. In a severer case, in one in which drugs, manipulative efforts, and even instrumental aid cannot be avoided, all that well-ordered and daily habits, well-directed efforts, and well-chosen diet, can accomplish—and they can accomplish much—are indispensable adjuvants of mere physicking in the cure of habitual constipation under skilled medical guidance.

There are three canons which should guide your treatment: (1) You should not leave the medicinal treatment of their constipation to your patients; (2) you should not prescribe a drug in the treatment of habitual constipation until you find that the constipation in the particular case before you cannot be cured without drugs; and (3) you should not prescribe drugs in the treatment of habitual constipation without the conjoined use of a judicious combination of the numerous adjuvants of natural alvine relief which are at your disposal, and which you should select especially accordingly to your experience of their use in practice, and combine them in particular cases of costiveness suitably to the individualities of your patients.

You should ascertain fully the characteristics and ways and circumstances of life of each patient, and then arrange the details of your treatment in each case upon such knowledge. In all therapeutics the individuality of the patient is the supreme law. None but a skilful prescriber can treat constipation best. To "open the bowels," to force the appearance of a copious "stool," cures not constipation, but only relieves for a few hours one of its symptoms.

The second of these canons you should remember, that of withholding drugs until drugless methods shall have failed, is a counsel of perfection which is basic in its aim, and should be followed generally; but the insistence of constipated patients for a purgative dose teaches one that patients are sometimes right in this matter (perhaps *fas est ab ægro doceri*), and that medicinal catharsis may give a fair

start for a cure in some cases, which you will be able to distinguish in practice, by disciplinary and dietetic methods. Sometimes an immediate evacuation is desirable, but no real cure of the malady is possible unless disciplinary and dietetic methods have play.

In costiveness our therapeutic clues arise well from an old definition of it—namely, "in constipation the fæces are hard, and may be retained from that cause, from weakness of the muscular coat of the large intestines, or from diseases of the anus, making defæcation difficult or painful." Habitual constipation is a penalty of our imperfect civilisation. It is due to habitual abstinence from emptying the rectum whenever the natural impulse thereunto, the physiological call for defæcation, is felt; it is due to habitual attempts at defæcation when seated upon the usual seat, 18 inches high; it is due to habitually diminished activity of the psoæ and iliaci, of the respiratory muscles, and of the muscular fibres of the large intestines, and to rectal paresis from rectal distension; it is due to habitual abstinence from fruits and other vegetable foods rich in cellulose. It is due in some women from habitual diminution of beverages, from the design of minimising urination. It is due to insufficient mastication of food, especially of meat. The curative treatment of habitual constipation may have to begin in the mouth, and it may be upon the dinner plate. Each of these causes is avoidable. Each of these causes must be sought out and avoided before a drug be taken for the treatment of habitual costiveness; if the avoidance of these causes should not be curative, such avoidance should concur continuously with all medicinal exhibition.

Many hearts throb to the fetich of a punctual fæx. By long-continued habit in health the act of voiding fæces can become to some extent a rhythmical process, done at a fixed time, by an acquired periodicity each 24 hours. Perhaps the best time is after breakfast. Before bed is the best time for a patient who has hæmorrhoids. Defæcation strains and protrudes piles, and the horizontal rest of a night in bed yields venous subsidence. Chosen the time, the voiding effort should be made daily, at the chosen time, whether the "call" to defæcation be felt or not. Besides this, defæcation should always be attempted immediately whensoever the rectal prompting thereunto shall arise. Such feeling, such *mens consoia recti*, should never be "put off." By putting it off the rectum empties itself, if it can, into the sigmoid flexures, or the feeling of rectal pressure subsides in the exhaustion of the local neuro-muscular sense into an unfelt rectal retention of fæces, and habitual constipation, with or without dyschezia, with or without rectal coprostasis, is caused and kept up. Perhaps this holding up of returned fæces in the sigmoid bendings may be a determinant of cancer there. Cancer there is much more frequent in men than in women. Women are more likely than are men to neglect to try defæcation at a rhythmical time; but men put off the act more than women do. Men like to defæcate at a given time, and at no other time. Again, as between the sexes, habitual constipation is more frequent amongst women than it is amongst men, from irregularity in the time of alvine effort, from procrastination therein, from intrinsic feebleness of the muscular factors of defæcation, from the wearing of waist-belts, of "stays," of corsets, of tight skirts, and from "inimbition."

The best position of the body for the complete accomplishment of the act of defæcation is the natural one, in crouching. In such a position only are the parts acting in the proper voidance of fæces in the best position for doing it; the anus is in the best position for opening and the rectum for emptying its contents, all the muscles concerned in the act are in the best position for their efficient play, and the parts liable to injury from strain are guarded by their natural protections, certain hernial orifices, for example. Failure of defæcation upon the usual seat will often at once issue successfully if the effort be renewed forthwith in the physiological attitude.

In a case of habitual constipation you should amplify and explain these considerations to the patient, and counsel acting upon them before placing perilous reliance upon purgative drugs. Further, you should keep in mind that certain faulty and habitual somatic postures are apt to lead to, and to keep up, sluggishness of fæcal movement in the larger bowel, even to coprostasis—namely, stooping forwards, slouching, and slackness of attitude and gait, and especially that form of arching backwards of the lower spine and doubling-up of the belly which occurs while sitting "all in a heap" in a large and low "easy" chair. Such habits of bodily postures are declared by the production of transverse wrinkles in the skin across the epigastrium. Look for these wrinkles in every case of habitual constipation, and counsel correction of postures which cause them. These postures hinder and hamper normal movements of the contents of the belly in many ways and with many ill-effects. They tend to the production of two more angles in the greater gut, one in the ascending colon and one in the descending colon, by an antero-posterior bend on each side, below the hepatic and the splenic flexures respectively.

So there must be physical uprightness in the cure of habitual constipation before drugging, and, if you give drugs, during their exhibition, and always, excepting during horizontal rest, afterwards. One of the many good physicians who were also fair poets wrote long ago:—

> "To lean for ever cramps the vital parts,
> And robs the fine machin'ry of its play."

Daily bodily exercise, especially out of doors and in the sunshine, favours defæcational normality. In the successful treatment of habitual constipation further helps may well be given by exercises which promote biliary flow, such as developed respiratory movements, by physical exercises which bring into play the muscles of the abdominal walls, and by such exercises as promote movement of those portions of the larger intestine in which fæcal stagnation is most apt to occur, that is in the cæcum and in the sigmoid flexures, for which last the psoæ and the iliaci must move well, as in running up stairs two steps at a stride, or as in "knees-up" exercises.

The best diet in the cure of costiveness is what is known as a mixed diet, the ordinary diet in use in English households. If, in a person living upon such diet, habitual constipation does not yield to habitual and physiological alvine effort, aided by suitable physical exercises of the kind I have described briefly to you, then food of a laxative character—that is, foods full of cellulose—should be increased in the dietary, such as cooked green vegetables, fruits, fruit jams, and chiefly marmalade of oranges. The fibres of cellulose appear to be the chief natural stimulant of the muscular movements of the intestines, as was shown, especially in favour of preparations of oranges, by certain striking experiments a few years ago.

Cathartics increase the peristaltic movements of the human intestinal canal, evacuate its contents, usually augment its mucous secretions, and often promote the separation of the secreted products which Liebig taught us it is the province of the intestines to separate from the blood and from the tissues. These medicines may be distinguished according to their energy of action as laxatives, which promote the gentle evacuation of the intestinal contents, and purgatives, which increase secretion and accelerate evacuation. This was Royle's and Headland's practical and excellent definition of them, and it is a good one to keep in mind in our prescriptions. Numerous are the cathartics at our disposal; their distinctions and several utilities are well known in medical practice.

For a case of habitual constipation which does not cure without medicines my favourite remedy is Socotrine aloes, suitably combined and exhibited as a pill, at bedtime. "Myrrh and aloes and cassia" can still make coprostatics glad: myrrh, with its old repute of giving an impetus to the digestive organs, and an increase of muscular power to the digestive canal, Socotrine aloes and cassia pulp, of each equal proportions, made into a pill of the weight of 5 grains with syrup or with castor oil. One pill or more may be given for a dose, as found to be needed, and their administration should be gradually reduced and omitted altogether so soon as may be. I give you this formula only as an example.

Many other cathartics are at our therapeutic disposal in pilular and in other forms, and you must learn to choose from amongst them by your experience in practice according to the particular indications in each patient. No case of habitual constipation can be treated by "rule of thumb." It will always be your duty to your patient and to yourself to investigate each case skilfully, by complete methods, with your full acumen, and by adequate clinical study of it, as to the causal relations and other associated details of the malady in the

individual instance of it in question, as to sex and as to temperament, and each case must be diagnosed *in propriâ personâ* and individually prescribed for, watched, and guided by an experienced adviser in the science and art of medicine. Faulty habits of life must be corrected appropriately, diet must be confirmed or rearranged if need there be, and you must make a suitable selection of medical gymnastic exercises, to restore and improve the health of the body at large, and of the intestines in particular, and fitting medicaments must be prescribed if their employment be unavoidable. And all this must be done with a lively remembrance of the manifold conditions which ever modify the effects of medical treatment, for, as one of the best therapeutists of a recent day, Dr. Scoresby-Jackson, taught, "the general habits of the patient his profession, business, or occupation, his diet, and other circumstances connected with his daily pursuits, influence the actions of medicines; and there are certain indications of treatment in the cases of the rich and the poor, the spare and the plethoric, the man of active and the man of sedentary habits, which are far more easily learned from careful clinical observation than from volumes of literature."

For counsels of perfection in the cure of habitual constipation you must win and sustain the patience and perseverance of your patient, and you must have the courage to insist that the habitual use of cathartics alone to meet a troublesome symptom is harmful, and may lead to the worst results.

A CASE OF ACUTE POLIOMYELITIS IN AN ADULT.

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AND
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CASES of acute paralysis of sudden onset, rapid progress, and fatal termination are fortunately not common, if vascular lesions of the brain are excluded. The difficulties of correct diagnosis in the early stages of such attacks of acute paralysis are very considerable, and in a large number of fatal cases no adequate pathological examination has been obtained. There is a special interest therefore attaching to cases in which a microscopical examination has been possible, and it is for this reason that we think the details of the following case, which occurred in the practice of one of us (B. T. P.-S.), worthy of record. It is greatly to be regretted, however, that the circumstances of the case did not allow of a perfectly satisfactory pathological examination being made. Although it was quite possible to make a definite diagnosis from the material which was obtained, no bacteriological examination was made, nor were any inoculation experiments on monkeys or other animals possible. The following is a brief record of the clinical aspects of the case.

The patient, aged 22, complained of headache and general debility on August 22nd, 1910, which compelled him to return early from business. His previous health had been very good, and so far as is known he had not been exposed to any infection previously to the onset of his illness. It is noteworthy that a brother shared his room with him, and had been in close contact with him in the period immediately preceding the onset of the illness. This brother and the other members of the family remained in perfect health. The patient passed a very restless night on August 22nd, and his condition was obviously worse the next morning. He vomited frequently, the pulse was rapid, and he was evidently extremely ill. During the evening he complained of severe pains in the lower part of the back, and at the same time noticed that the legs were decidedly weak. During the night power in the legs was completely lost. On examination the following morning the patient was observed to be lying perfectly still, breathing with some difficulty, and at a rapid rate—viz., 38 per minute. The pulse was 120, of small volume and low tension. The face was pale and perspiring, the mouth was open, and the alæ nasi working. The temperature was 100° F. Intelligence and memory were unimpaired. With regard to the motor system, movements of the head and facial muscles were possible, and there was no ocular palsy or other cranial nerve defect at this time. The upper extremities were markedly paretic, and coördinated movements were carried out only with great difficulty. There was marked hypotonia of the muscles. The trunk muscles were more affected, the intercostal muscles acting hardly at all, and the diaphragm only very weakly. The patient was quite unable to make any attempt to raise himself in bed. The lower limbs were quite powerless and flaccid. Sensation was absolutely normal, the patient recognising all forms of sensory stimuli readily, naming them correctly and without difficulty. The deep reflexes (sphincters) were unaffected, but the tendon reflexes were all absent, and no superficial reflex could be obtained. During the afternoon the paralysis progressed rapidly and became complete in the trunk and upper limbs. It spread further, however, and involved the tongue and facial muscles to some extent. Speech now became slow and difficult, though consciousness was fully maintained. Respiration became more shallow, and the patient died at 8.30 P.M. on August 24th, two days after he was first taken ill.

The spinal cord and a portion of the cerebral cortex were received for microscopical examination. Sections were made and stained by the following methods—Marchi, Nissl, and hæmatoxylin and Van Giessen.

Cortex.—Nothing abnormal was found in the portions of cortex examined, nor in the meninges, blood-vessels, or nerve cells.

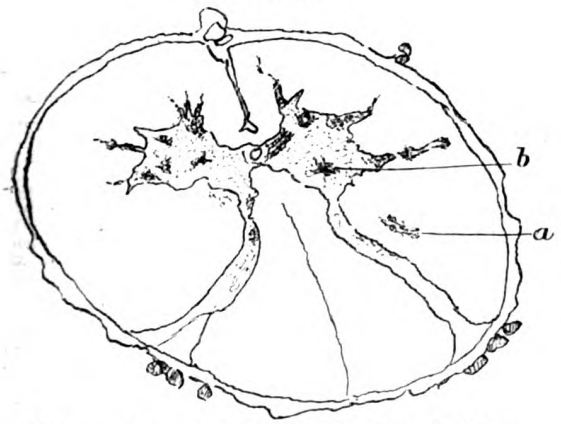
Spinal cord.—The Marchi method, as might be supposed, owing to the rapid course of the disease, showed no changes. In the following examinations the hæmatoxylin and Nissl methods were used:—1. Meninges: For the most part the meninges were quite normal, and there was no widespread inflammatory exudation into them. In a few places, however, particularly in relation to the anterior spinal artery, posterior spinal arteries, and in the anterior fissure of the cord there was a slight amount of small, round-celled exudation, which was most conspicuous in a perivascular distribution, though it extended actually beyond the immediate vicinity of the blood-vessels. 2. Blood-vessels: (*a*) Meningeal blood-vessels: No gross defect was noted in connexion with these, beyond the patchy perivascular exudation referred to above. There was no evidence of thrombosis, though the vessels were considerably engorged. (*b*) Intra-medullary vessels: The same perivascular cell exudation was to be seen in these vessels both in the white and grey matter. The vascular engorgement was marked, but there was no evidence at all of any thrombosis having occurred. The cells of the inflammatory exudation seemed to be almost all of the lymphocytic type, but there were a few endothelial cells also present. Polymorphonuclear cells were conspicuously absent. 3. The spinal cord itself: Throughout the whole cord from the sacral to the cervical region the grey matter macroscopically had appeared darker than normal, and on making microscopical sections was found to be the seat of widespread inflammatory changes. The extent and distribution of these changes are indicated in the diagrams (1, 2, 3). It will be seen that, with the exception of the perivascular exudation in the meninges and in the white matter, the inflammatory changes are confined to the grey matter. It will at once be evident, on glancing at the diagrams, that the cell exudation is not confined to the anterior horns, but that the changes are very intense also in the vicinity of Clarke's column and in the posterior horns. The inflammatory change in the grey matter was diffuse throughout the whole length of the cord, while here and there dense foci of cell collections were to be seen. Some of these were perivascular, but the majority did not appear to be so. The cells of this inflammatory exudation were, in part at least, lymphocytiic in character, but there were numerous other cells the nature of which it was not easy to determine. They did not appear to be derived from the blood, and were probably in part derived from the vessel wall, and in part a product of neuroglia proliferation. A few plasma cells were seen, but they were rare.

With regard to the nerve cells of the grey matter, a striking feature was the alteration in the ventral horn cells. Both in the cervical and lumbar enlargements many of these cells had disappeared altogether, or existed as mere ghosts of their former selves. Those that remained showed every stage of

chromatolysis, and practically not a single quite normal ventral horn cell remained. The cells of Clarke's column appeared to have survived better than the ventral horn cells, but they, too, were seriously affected. Unfortunately, the bulb and pons were not available for examination, so it was impossible to determine the upper limit of the inflammatory process, but clinically it had reached the facial nucleus in the lower part of the pons. The involvement of the pons only occurs in very severe cases, and is uncommon even in them.

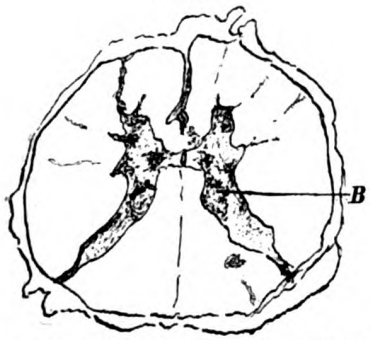
The pathological evidence makes it quite clear that the case was a very severe and widespread one of acute poliomyelitis. The clinical evidence during life was not so conclusive, the first diagnosis, which was offered tentatively, being that of Landry's paralysis, the chief reason for this diagnosis being the ascending character of the paralysis, the patient's age, and the absence of sphincter involvement.

FIG. 1.



Upper cervical segment of spinal cord. Diffuse infiltration with foci of more acute inflammatory reaction (*b*), chiefly in anterior horns, but the posterior horns have not escaped. Vessels in white matter (*a*) show perivascular exudation of small round cells. (Edinger projection × 5.)

FIG. 2.

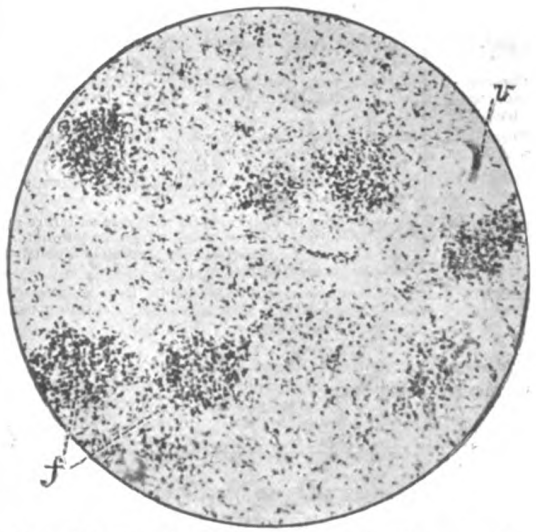


Lower dorsal segment of cord. Infiltration of whole of grey matter. Clarke's column suffers particularly. Intramedullary vessels of white matter show inflammatory changes. B = microphotograph, Fig. 5. (Edinger projection × 5.)

FIG. 3.

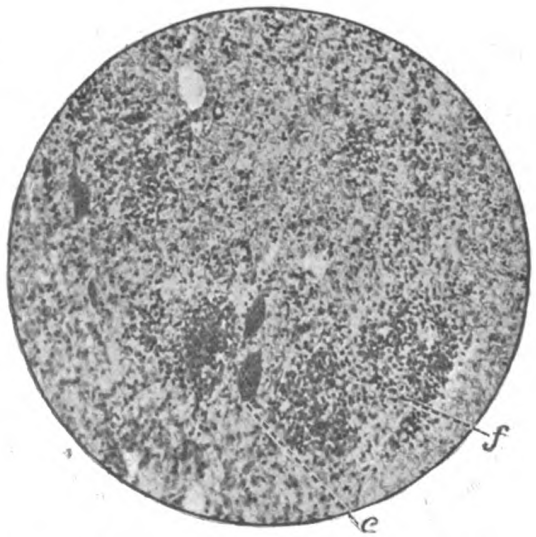
Lumbar segment of cord. Intense inflammatory reaction in posterior horns, as well as anterior. Destruction of ventral horn cells. Inflammatory perivascular exudation in meninges. A = microphotograph, Fig. 4. (Edinger projection × 5.)

FIG. 4.



Microphotograph of part of ventral horn of lumbar segment (vide A, Fig. 3). Note absence of motor cells, and diffuse inflammatory exudation, with patches where this is very intense. *v* = Surviving but damaged ventral horn cell. *f* = Foci of acute inflammatory exudation.

FIG. 5.



Microphotograph of cells of Clarke's column showing intense inflammatory exudation in their vicinity (vide B, Fig. 2). *c* = Cells of Clarke's column. *f* = inflammatory exudation.

None of these features are, however, incompatible with a diagnosis of acute poliomyelitis. In cases of acute paralysis of this kind there are four possible conditions to consider, as Dr. E. Farquhar Buzzard pointed out in his Goulstonian lectures in 1907.[1] These are: (1) acute poliomyelitis; (2) Landry's paralysis; (3) acute toxic polyneuritis; and (4) acute

[1] THE LANCET, March 16th (p. 705) and 23rd (p. 785), 1907.

ascending myelitis. Is it possible to make a certain diagnosis between these conditions during life? Up to a certain point it is, but errors have been made in the past, and will no doubt be made again even by those who have had most experience of these particular forms of infective or toxic conditions of the central nervous system. Acute ascending myelitis is probably the easiest to recognise with certainty, owing to the fact that there is most pronounced sensory loss which ascends *pari passu* with the paralysis, and that the sphincters are early affected. The following points are of some value in making a differential diagnosis, and for the sake of clearness they are arranged in tabular form. It must not be supposed, however, that exceptions do not occur to the brief descriptions set forth below.

Table in which are Particularised Some Points which are Helpful in Making a Differential Diagnosis.

—	Acute poliomyelitis.	Landry's paralysis.	Acute toxic polyneuritis.	Acute ascending myelitis.
1. Onset.	Sudden; progress rapid.	Sudden; progress less rapid.	Onset and progress more gradual.	Sudden.
2. Constitutional symptoms.	Often severe. Temperature 101–103° F.	Not so severe; little or no febrile disturbance.	Often no constitutional disturbance.	Severe; often great constitutional disturbance.
3. Muscular condition.	Flaccid palsy; as a rule some groups of muscles more affected than others. Rapid muscular wasting. Cranial nerves rarely affected.	Flaccid palsy; more uniform distribution. Little muscular atrophy. Cranial nerves rarely affected.	Peripheral muscles more affected than proximal groups. Cranial nerves not uncommonly affected.	Ascending paralysis involving successive segments of the spinal cord.
4. Sensory symptoms.	Severe pains in back and on passive movement common in early stages. No loss of cutaneous sensibility.	Severe pain rare; paræsthesiæ not uncommon. No loss of cutaneous sensibility.	Paræsthesiæ common; tenderness on pressure. Some degree of loss of cutaneous sensibility common.	Pain in back common. Marked degree of loss of cutaneous sensibility; ascending with paralysis.
5. Reflexes.	Deep reflexes abolished in affected muscles. May have extensor plantar in early stage.	Deep reflexes absent. No extensor response.	Absence of all reflexes.	Lost as disease progresses, but may be + in legs with extensor plantar.
6. Sphincters.	Unaffected.	Unaffected.	Unaffected.	Affected early.
7. Prognosis.	Good as to life, except in very severe cases.	Not so good as to life, but muscular recovery likely to be more complete.	Good as to life and recovery of muscular power.	Exceedingly bad.

FURTHER OBSERVATIONS ON THE TREATMENT OF HAY FEVER BY HYPODERMIC INOCULATIONS OF POLLEN VACCINE.

BY J. FREEMAN, M.D. OXON.

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THIS paper is the sequel to Mr. L. Noon's paper on Hay Fever in THE LANCET of June 10th, 1911, in which was described research work for treatment by hypodermic inoculations of pollen toxin.

Previous Work.

Dunbar had described a simple ophthalmo-reaction as a diagnostic test for that susceptibility to pollen which constitutes hay fever; a watery extract of pollen of a certain strength dropped into the eyeball of a normal man produces no effect, but will cause a miniature attack of hay fever in susceptible persons. The test is quantitative in nature, and by noting the dilution of pollen which will just cause the eye to react it is possible to obtain some measure of the patient's susceptibility. Changes in susceptibility presumably have an inverse correlation with changes in immunity to the pollen toxin, and Noon applied this quantitative test to the study of changes in immunity produced by subcutaneous inoculations of pollen vaccine. In this way he demonstrated that *suitable* doses of pollen toxin increased the patient's immunity, while unsuitable doses either did not affect, or even decreased, this immunity; this brings the pollen inoculation work into line with the bacterial inoculation work of Wright and his school. These points established, Noon set to work to immunise hay fever patients during the off season in preparation for the season which we have just passed through. Unfortunately, circumstances compelled him to give up work last February, and the research passed into my hands; it is now possible to tabulate some laboratory data about these and subsequent inoculated hay fever cases, and also to give the clinical results of the treatment as disclosed by the past summer season.

Laboratory and Clinical Evidence in Table.

Explanation of table.—Adjoined is the tabulated list of the 20 cases treated on this system by hypodermic inoculations of pollen toxin; it is important to note that the list is not a collection of flattering "unsolicited testimonials," but gives an account of every case which had any systematic treatment, excluding only one or two people who were seen once and then lost sight of.

The first column gives the reference number of each case. The cases are arranged in the order in which they arrived for treatment; those who were already suffering from hay fever when they first presented themselves are marked with an asterisk.

The second column gives the dates of the beginning and end of treatment; these dates refer especially to the parallel figures in the next two columns.

The third column gives the state of pollen-immunity as judged by the ophthalmo-reaction at these dates. The unit of measurement here employed was explained fully by Noon in his paper last June; it is convenient shortly to redescribe it here. The quantitative measurement of the ophthalmo-reaction is made by noting the weakest dilution of pollen extract of which one drop, when dropped on the eyeball, will just produce a slight flushing of the inner canthus of the eye. The unit of measurement is a one-millionfold dilution of Phleum pratense pollen in water—which is spoken of as one unit of pollen, or shortly as 1 U.P. Thus, a hundred-thousandfold dilution of pollen would equal 10 U.P., a thousandfold dilution would equal 1000 U.P., and so on.

The fourth column gives the hypodermic doses of pollen extract which were used at these two dates respectively; these doses are also given in terms of pollen units, 1 U.P. being 1 cubic centimetre of the millionfold extraction, or, to put it another way, the amount of pollen toxin extracted from one-millionth of a gramme of Phleum pratense pollen.

The fifth column gives a short summary of the fate of the patients during the hay fever season this year as reported by the patients or their friends.

In the sixth column I sum up my own impression of the case.

Laboratory evidence in table.—In studying this tabulated list of inoculated cases, the first point to be noted is the increased tolerance of pollen toxin which was produced by the inoculations in every case. This is shown in Column 3 by the ophthalmo-reaction which the patient gives at the beginning and end of treatment; and as the personal equation, the "functional error," of the observer enters very little into the results of this reaction, it is claimed that this change in the ophthalmo-reaction represents an undoubted change in the immunity of the patient.

Then, again, it is clear from Column 4 that the doses also were increased. Now, it was found by experiment that it

was impossible at the commencement of treatment to give much larger inoculations than those indicated in the list without producing symptoms of an overdose—symptoms clinically, and as noted in the laboratory by a falling off in the ophthalmo-reaction. If the dose *were* increased markedly, one might produce even in mid-winter such unpleasant things as swelling, pain, and urticaria at the site of inoculation, a general malaise, and all the nose and eye symptoms of a thorough attack of hay fever. Yet as immunisation progressed it was found by repeated ophthalmo-reactions that larger doses could be given with advantage, and though some of these were enormously greater than the initial dose, they were given without any clinical symptoms and without lowering the ophthalmo-reaction.

As denoted by the asterisks, most of the people at the end of the list were already suffering from hay fever when they came, but it was found that in these cases also there was an increase in immunity and an increase in the dose employed. The original scheme was one of prophylactic immunisation, and this was much more suitable for the preliminary research work because the effects of each dose could not be obscured by chance doses of pollen from the atmosphere; but clearly phylactic inoculations are of more use if only they will answer reasonably well. At first thought it might be argued that phylactic doses of pollen toxin will only add poison to an already poisoned patient, but this objection is no more valid in the treatment of hay fever than it is in the treatment of boils by staphylococcus vaccine; the answer is the same in both cases. Though it may or may not be true that at the seat of the disease the tissues are over-poisoned, yet the rest of the body may, under the stimulus of an inoculated vaccine, respond by an increased production of antibodies; this surmise is justified when it is found that such an inoculation *is* followed by a demonstrable increase in immunity.

Case.	Month and year.	Resistance.	Dose.	Patient's opinion.	Writer's opinion.
1	July, 1910. May, 1911.	40 U.P. 5000 U.P.	4 U.P. 2000 U.P.	Extremely bad with hay fever for last four years. Inoculated persistently during the off season; stopped treatment in May. Tested well, but absolutely immune.	Eminently satisfactory.
2	July, 1910. (Did not continue.)	40 U.P.	2 U.P.	Refused treatment owing to article on anaphylaxie. Had hay fever worse than ever this year.	(Satisfactory.)
3	Sept., 1910. May, 1911.	20 U.P. 400 U.P.	4 U.P. 120 U.P.	Inoculated irregularly and also with two bacterial vaccines. Had hay fever, but probably not so bad as formerly, and was sooner over.	Disappointing.
4	Feb., 1911. May, ,,	20 U.P. 170 U.P.	6 U.P. 25 U.P.	Certainly much better, though not clear of hay fever.	Fairly satisfactory.
5	March, 1911. June, ,,	40 U.P. 400 U.P.	18 U.P. 20 U.P.	Has been practically free from hay fever this season, but has felt "on the verge of it" once or twice. Went in hay fields, motored, &c. (which was impossible formerly).	Satisfactory.
6	March, 1911. June, ,,	40 U.P. 1000 U.P.	12 U.P. 100 U.P.	"Have had no hay fever this year, except one attack lasting an hour after walking through a hay field, and no asthma. In former years had bad hay fever for at least six weeks and asthma at night."	Eminently satisfactory.
7	April, 1911. July, ,,	6 U.P. 1000 U.P.	2 U.P. 18 U.P.	"I think I may fairly say that though I had it pretty badly occasionally, it was not in so severe a form nor so easily excited. Susceptibility diminished, perhaps one-third. Effects less pronounced in the same proportion."	Inconclusive.
8	May, 1911. June, ,,	13 U.P. 170 U.P.	4 U.P. 20 U.P.	"Quite a marked improvement, if not an absolute cure."	Moderately satisfactory.
9	May, 1911. June, ,,	40 U.P. 500 U.P.	4 U P. 25 U.P.	This case was handicapped by the inoculations being given rather irregularly. "The attacks were less violent on the whole, and certainly did not last as long."	,,
10*	May, 1911. June, ,,	130 U.P. 170 U.P.	4 U.P. 10 U.P.	Did not improve after several inoculations, and as he could with difficulty spare the time he decided to postpone the treatment for prophylaxis in the winter.	Failure.
11	May, 1911. July, ,,	13 U.P. 170 U.P.	1½ U.P. 10 U.P.	Had a little sneezing, but was clear of hay fever most of the time—probably not a very severe case. He reported, "the cure still continues to work marvellously."	Satisfactory.
12	May, 1911. June, ,,	40 U.P. —	4 U.P. 10 U.P.	"I do not want to boast, but I think I am quite done with the accursed thing for this year. There can be no sort of doubt, seeing the kind of season it has been, that I should have suffered, and that severely, if I had not had these inoculations."	,,
13*	May, 1911. June, ,,	5 U.P. 17 U.P.	1 U P. 5 U.P.	"I *did* have a return of the hay fever after the cure" (i.e., three inoculations), "but only slight, and have not had it for over three weeks now."	,,
14*	May, 1911. July, ,,	170 U.P. 500 U.P.	10 U.P. 15 U.P.	"Since the inoculations began I have had practically no running at the eyes and nose, nor do my eyes get bloodshot."	Fairly satisfactory.
15	June, 1911. June, ,,	170 U.P. 500 U.P.	10 U.P. 300 U.P.	A Canadian who gets bad hay fever in August, but not earlier. Has had none this year up to date.	No test.
16*	June, 1911. June, ,,	17 U.P. 170 U.P.	1 U.P. 6 U.P.	"She is certain that the condition improved after the third, and she thinks it was better after the second dose. Afterwards she had very little return of symptoms till treatment was discontinued, when there was a slight return."	Satisfactory.
17*	June, 1911. July, ,,	5 U.P. 50 U.P.	1 U.P. 6 U.P.	Reported a distinct improvement after the second and third doses, and had no hay fever after the fourth.	,,
18*	June, 1911. July, ,,	170 U.P. 1700 U.P.	10 U.P. 50 U.P.	Reported himself very much better after the second dose, and was clear of hay fever from June 16th onwards.	,,
19*	June, 1911. June, ,,	5 U.P. 17 U.P.	1 U.P. 3 U.P.	"The hay fever inoculations, although I came to you having hay fever rather severely, did me an immense amount of good, and I intend next spring ..."	Fairly satisfactory.
20*	June, 1911. July, ,,	17 U.P. 150 U.P.	1 U.P. 5 U.P.	"First inoculation (given during severe attack) gave immunity for two days. Second gave complete immunity from Monday till Sunday. Third (rather stronger than before) brought on attack which lasted three days. I have perfect confidence in its power of giving immunity if the right strength is found."	Satisfactory.

Thus, Columns 3 and 4 both denote an increase in pollen immunity during treatment. This increase as here shown varies partly no doubt with the individual, but also with the thoroughness with which the inoculations were undertaken. It might be thought that both an increased ophthalmo-reaction and tolerance of an increased dose were tests of the same thing, and that therefore they must run parallel; this was not the case. At the commencement of treatment the dose could not with advantage be increased as rapidly as the increase of the ophthalmo-reaction, while at the end of treatment there was a tendency to a sticking-point in the ophthalmo-reaction, but the dose could gradually be made larger without producing symptoms either clinical or laboratory.

It is claimed that this increase in immunity produced by pollen vaccine is in itself the best proof of the soundness of this line of treatment, whether prophylactic or phylactic. It is true that one does not know if this increase is sufficient for all purposes, but the change is certainly in the right direction, and must be doing good.

Clinical evidence in table.—In judging a system of treatment by "results" there are obvious sources of error which should be taken into account; and in criticising Column 5 let us give due weight to (1) the natural bias of the operator; (2) the bias of the patient; and (3) outside circumstances—i.e., luck, affecting the result. Every medical man so desires that his patient's condition shall be improved by his treatment that there is a constant tendency to detect such improvement in adventitious fluctuations of health. To avoid this danger most of the results were summarised for me either by the patients or their friends. On the patient's side there is also the desire for improvement, reinforced by the impression made on the mind by a rather novel system of treatment and a certain atmosphere of "science." As a set-off to such faith-healing, most of the patients had undergone several "cures" which they had been told were infallible, and they therefore submitted themselves to treatment in a critical, sceptical, or even hostile spirit. There is another point: any one who works at hay fever research will have a highly intelligent and critical material to work with—a very high proportion of the people in the above list have been accustomed by their position or employment to give discriminating judgments. Lastly, luck, or outside circumstances; was this year a better year for hay fever patients? Apparently not. The general, though not universal, opinion seems to be that the season was, on the contrary, more severe than usual—that it began and ended earlier. As some test of the season many of the patients were urged to select another hay fever case as similar as possible to themselves as a control case for observation; all these controls had much worse hay fever than the inoculated patient.

Considering all the cases generally, there seems little doubt that there has been a distinct amelioration of symptoms. This improvement took several forms; a greater freedom from attack, the attack not so bad as in former years, and the attack sooner over, the constitutional disturbance not so great, less asthma. The people who had already developed hay fever when they commenced treatment were, perhaps, the most generous in their comments, possibly because they had recently had a reminder of what hay fever was like.

Application of Treatment.

Diagnosis.—It remains to be considered how this treatment is to be turned to account prophylactically next winter and spring, and phylactically next summer. Whatever the treatment, the diagnosis is important; though an uncomplicated case will usually present no difficulty, yet it is sometimes convenient to have a test of susceptibility to pollen toxin, and this is almost a necessity when prophylactic inoculations are to be commenced in the off season. But there are many reputed cases of hay fever which are partly, and even wholly, caused by a bacterial infection; indeed, it seems probable that an attack of hay fever may be the starting point of a bacterial infection, or that a catarrh of the air passages may predispose to hay fever, and before treatment of any kind it is essential to disentangle these two factors. During the present research several so-called hay fever cases were excluded from treatment because the eyeball was unaffected by pollen toxin—one of these confessing to malingering, and the remainder being the victims of bacterial infections. A case treated by a colleague is a good illustration of the value of a diagnostic test. A lady reported to have hay fever had slightly inflamed eyes which streamed with clear tears; as she did not react to pollen toxin hay fever was excluded. The tears were found to be swarming with staphylococci, a vaccine was made, and in a short time the symptoms disappeared.

In the list of cases treated last season the first ophthalmo-reaction will be seen to vary between 5 U.P. and 170 U.P.; those who did not react to 5000 U.P. were said to give a negative test; there were no unaccountable cases—i.e., people whom subsequent events proved to have been negative giving a positive result, and *vice versâ*.

Initial dose.—Whether or no the help of such a test is required in fixing the diagnosis, it will at any rate be required in fixing the initial dose, should vaccination treatment be decided on. Noon suggested as a suitable initial dose one-third of a cubic centimetre of that dilution of pollen toxin which gives the ophthalmo-reaction. On this plan a man giving a diagnostic reaction of 6 U.P. would receive 2 U.P. hypodermically, and a man who reacted to 100 U.P. would receive 33 U.P. This seems to be about correct, or perhaps to err on the side of over-dosing, especially when hay fever is already developed. In this connexion it should be said that the cases in the tabulated list are not all to be taken as models, as experience was being gathered all the time. In addition, there were several deviations from the ideal course to suit special circumstances.

Subsequent doses.—The patient was, as a rule, re-inoculated every week or ten days: the larger doses were given after a longer interval, while the very small doses were repeated after three or four days. Those cases which were being treated phylactically usually finished treatment with the fifth or sixth dose, the prophylactic inoculations were naturally much more numerous, as an attempt was being made to produce as high an artificial immunity as possible.

All these doses were determined on with the assistance of ophthalmo-reactions. These were taken not only at the time of inoculating but also frequently between the doses; and it is urged that whenever this is possible it enables the operator to mark the success of his treatment, to detect mistakes, and, if necessary, to adapt his doses to the idiosyncrasies of his patient. Clearly that dose should be selected which will give the greatest increase to the immunity of the patient; if a dose or a series of doses fails to increase the patient's immunity as measured by the ophthalmo-reaction, then it is to be presumed that the dose is either too small to be efficient or so large as to be overdosing the patient, and this latter will be the case if the resistance of the patient is not only not increased but is even diminished after the doses. As a result of such tests it was generally found advisable not to increase the dose quite as rapidly as the increase in the ophthalmo-reaction, at any rate at first. Later in the process of immunisation the ophthalmo-reaction ceased to rise so quickly, and it was sometimes possible to regain the 1 : 3 ratio between the dose and the reaction. Lastly, in the case of very highly immunised patients—e.g., Case No. 1—the ophthalmo-reaction at last became stationary, but the dose was still increased.

It is, perhaps, possible by the ophthalmo-reaction to detect three stages in immunisation. In the first stage favourable doses are followed by an immediate rise in resistance, but should not be followed by a corresponding increase in the size of the next inoculation. In the second stage a larger dose is required, giving first a slight negative phase followed by a slow rise in immunity. In the final stage the eye reaction becomes stationary, but apparently the doses may be increased with advantage so long as there is no evidence, either laboratory or clinical, of an overdose.

Rule-of-thumb inoculations.—Owing to the nature of hay fever there is no danger to life and only temporary danger to health by inoculating "blindly"—i.e., without controlling the doses by ophthalmo-reactions; but it is thought that in order to make a diagnosis and to fix the first dose, at least one eye-testing will be necessary. As a rule-of-thumb, the second and third doses seemed to be usually half as much again as the first dose, while the fourth, fifth, and sixth are perhaps twice as much as the first, though in several cases the size of the dose was increased more rapidly than this.

Pollen supply.—With regard to the pollen extract necessary for testing the eye and for injecting as a vaccine, Dunbar's method of extraction is to be followed. The brief directions given by Noon in the previous paper should enable anyone, who has sufficient time and a laboratory, to construct his own pollen dilution. This will prove inconvenient to many, and it is proposed that the Inoculation Department of St. Mary's Hospital shall make arrangements to put these dilutions of pollen toxin on the market through Messrs. Parke, Davis, and Co., the proceeds to go to the upkeep of the department as in the case of their bacterial vaccines.

A final word as to the species of pollen employed. Noon selected that of timothy grass (Phleum pratense), because the pollen of this grass gave in his hands the strongest extract as tested on the eyes of the patients. This spring I tested various pollens as they matured, rushes, sedges, grasses, &c., but none gave so strong an extract as this timothy grass. The pollen of Alopecurus pratensis gave good results, but only possessed one-quarter the strength of Phleum pratense. The grasses and flowers dreaded by the hay-fever patients differ considerably in different cases, and the question arises—Is one kind of pollen more active in one case and another in another case? Though the question

cannot be regarded as settled, apparently this is not so. For one reason, the ratio between the strength of, say, a phleum extract and an alopecurus extract remains about the same with different patients—i.e., 4 : 1. Furthermore, a patient inoculated with alopecurus pollen vaccine is found to become immune to the phleum pollen extract as tested by the ophthalmo-reaction. Apparently, therefore, we need not select different types of pollen for treating different patients.

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SOME POINTS IN INJURIES TO THE ELBOW-JOINT.

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INJURIES to the elbow-joint form a very large proportion of the cases submitted by surgeons to X ray examination, and of these a great number are cases of supracondylar fracture with displacement backwards of the bones of the forearm together with the small lower portion of the humerus. In an X ray examination of this injury (the supracondylar fracture) it is quite impossible at times to decide how much of the humerus is damaged; whether it is an epiphyseal separation or a true fracture above it. This difficulty is due, first, to the cartilaginous and transparent nature of the end of the humerus in children, and, secondly, to the extreme difficulty of keeping a child's upper arm steady during the X ray exposure, however short it may be. A displaced epiphysis may be replaced by the time the radiographer is asked to examine it, and if it goes back accurately into place he cannot tell in a recent injury whether it had been displaced or not. The difficulty of steadying a child's upper arm, and even the upper arm of adults, during an X ray exposure is well known to radiographers. Unsteadiness results in a blurred photographic plate and only gross injuries are decipherable. The lower fragment in any case is so small that the displacement is almost identical with that due to a true dislocation.

Simple dislocation of both bones backwards is a very rare injury in children, and any surgeon having to deal with a case presenting signs of backward displacement of the forearm in a child should suspect fracture of the humerus just above the condyles.

The readiness with which, in supracondylar fracture, the deformity can be reduced, only to recur at once when the limb is let go, and also the readiness with which the deformity recurs when the limb is actually put in splints, is well known to all who have handled such cases. It is therefore imperative, if the surgeon wants to protect himself against blame, as well as to furnish himself with the accurate knowledge that leads to successful treatment, that such cases should be radiographed some days after the limb is in the splints in order to make sure that the deformity has not recurred. To this end, splints should be used of wood or aluminium, or if of metal should be of the hoop iron pattern applied on the outside of the limb, so as to allow an X ray photograph to be taken without undoing the splint. If the bones are in good position no harm is done, and if not further attempts can be undertaken to correct the position of the bones.

Mr. Robert Jones of Liverpool has drawn the attention of the profession to the difficulty of treating these cases, and his paper read before the Surgical Section of the Royal Society of Medicine, and published in THE LANCET of Nov. 19th, 1910, p. 1479, is a masterpiece in the literature of joint injuries. I have adopted his method of treating these injuries in the first case by putting the limb up in a very flexed position, not an easy thing to accomplish with the ordinary splints, which do not go beyond a right angle. If splints are to be applied in the case of a child, cardboard cut like a V can be placed on the under side of the arm, or a thin strip of tin plate or light hoop iron or aluminium can be placed on the outer aspect of the bent limb, the metal being bent on the flat. Passive movement to "establish the right of way" should be begun early—that is, after seven days—and the direction "cause no pain" attended to during movement.

Fracture of the coronoid process of the ulna is, if it occurs at all, an extremely rare condition—that is, tearing off of the tip of the coronoid without fracture of the shaft of the bone. That is an injury to the bone similar in character to a fracture of the styloid or olecranon, and not associated with other injuries but dislocation.

My experience as an X rayist dates from 1896 (Roentgen's discovery was in 1895) and I am still actively engaged in this work, and up to the present I have never seen a case that to my mind presented unmistakeable signs of this injury in a "negative."

Mr. Jones points out the frequency with which, after apparently simple dislocation backwards of both ulna and radius, bony growths occur in the brachialis anticus muscle—a myositis ossificans. This condition I have met with on numerous occasions, all resulting from dislocation, and the subject was recently dealt with in the *Annals of Surgery* by an American writer.

The occurrence of bony growths in the muscle begins always near the coronoid and spreads upwards, and it seems to me that the muscle is torn near its attachment and does not lift off a plate of bone in the same way that the ligamentum patellæ does when it is torn from the tibia, or as the tendo Achillis does when separated from the os calcis.

Skiagrams show that in dislocation of both ulna and radius backwards at the elbow the tip of the coronoid process never gets beyond the lowermost point of the trochlear surface of the humerus. Even at that position the brachialis anticus must be tightly stretched over the forward projecting trochlear surface of the humerus and badly bruised. This damage is accentuated in many cases by ignorant attempts on the part of laymen to correct matters by vigorous pulling in a straight line, thereby stretching to bursting point the already over-extended brachialis anticus. I regret to say that many medical men resort to the same procedure in the belief that traction in a straight line can do no harm if not too vigorous, and will tire out the muscles and so facilitate reduction. It is quite immaterial whether force or not is used in this procedure—the damage is due to straightening the forearm, itself a powerful lever. By the act of dislocation the forearm has been put further away, in a downward direction, from the humerus than nature ever intended. The elbow now pivots on the top of the coronoid, and straightening the arm must elongate with irresistible power the already overstretched structures in front of the joint. I have always advocated, on this account, reduction of elbow dislocations while the joint is in the flexed position, and I have not found any special difficulty in this. By grasping the upper arm with interlocked fingers the pressure of both thumbs on the olecranon will frequently reduce the dislocation without other aid than that afforded by an anæsthetic. There is, of course, no objection to traction performed at a right angle—i.e., with elbow bent.

The coronoid process forms such a large mass of bone of a low truncated cone shape that *a priori* one would not expect it to be broken in the common accidents that cause dislocation. The teachings of the class-rooms of former days die hard, and attempts to classify injuries, to facilitate teaching, frequently led to undue importance being placed in students' minds on rare or suspected injuries. Recounts of these filled up the note-book or the examination paper and gave a rounded outline to a description of the fractures met with in any one bone. The ulna has two processes—"*argal*," both had to suffer—the styloid suffered in those days not from fracture but neglect, and damage to it in association with Colles's fracture was only recognised as of frequent occurrence on the advent of the Roentgen ray. Likewise the clavicle, divided into four parts for lecture purposes—each *had* to be fractured, and the portion external to the conoid and trapezoid ligaments was credited with getting broken with ridiculous frequency and amazing deformity. The X ray here has exonerated the bone at this place from anything except a very rare longitudinal split or dislocation from the acromion.

Dublin.

LITERARY INTELLIGENCE.—New editions of Sir Malcolm Morris's "Diseases of the Skin," Sir Arthur Whitelegge and Sir George Newman's "Hygiene and Public Health," and Sir Frederick Treves's "Surgical Applied Anatomy," revised by Professor A. Keith, are announced for publication by Messrs. Cassell in September, as well as "A Manual of Physics for Medical Students," by Mr. Hugh C. H. Candy, based upon the late Mr. Frederic Page's "Elements of Physics."

TRAUMATIC RUPTURE OF ABDOMINAL VISCERA.

REPORT OF THIRTY CASES.

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Scope of report.—Included in the following list are all the cases of serious injury of the various abdominal organs that I have been able to collect from the records of the Bristol Royal Infirmary for the ten years 1900 to 1909. I have not added those brought in dead, except in one case of special interest. The total number of surgical in-patients during the same period was 21,143. I have endeavoured by correspondence to trace the after-history of the survivors, and have examined personally as many as could be brought to the infirmary.

Ruptured liver.—Eight cases, two recoveries. In three cases other viscera were injured at the same time (the pancreas, the kidney, and the spleen).

TABLE I.—*Ruptured Liver.*

No.	Sex and Age.	Year.	Operation.	Result.
1	M., 25.	1900	Five hours after injury. Abdomen full of blood. Rent large. 3¾ yards of gauze packing stuffed into the tear.	Recovered. Five months later operated on for incisional hernia.
2	M., 30.	1902	Patient came up from Avonmouth. Extensive tear. Abdomen full of blood. Packed with gauze.	Died under 24 hours.
	M., 35.	,,	None. Kidney also ruptured.	,,
4	M., 7.	,,	None. Dying.	,,
5	F., 4.	1905	None. Dying. Spleen torn.	,,
6	M., 78.	,,	None. Dying.	Died in 10 minutes.
7	F., 14.	1906	Two days after injury. Small tear of liver; spots of fat necrosis everywhere. No tear of pancreas actually seen. Nothing done.	Recovered, after a severe attack of pneumonia. Seen and examined in February, 1910. Quite well since, except one attack of abdominal pain a year before, lasting one day.
8	M., 56.	1908	Two and a quarter hours after injury. Tear 4 inches long in liver. Not much hæmorrhage. Sutured with catgut.	Died two days after.

Five cases were admitted dying, and are of little interest as regards symptoms. In three others the symptoms were as follows. (The notes are sometimes scanty and imperfect).

TABLE II.—*Symptoms in Ruptured Liver.*

No.	Injury.	General condition.	Pulse and temperature.	Pain.	Abdomen.
1	Case of glass fell on him.	One hour later, "signs of internal hæmorrhage."	Pulse at first 84, then 62. Temperature subnormal.	Much.	Distended.
7	Fell on edge of pavement.	On admission, exceedingly pale.	Temperature, 99·2° F.	Some.	Moved on respiration; slight guarding.
	—	Two days later, worse; vomiting frequently.	Pulse 128.	More.	Muscles very hard and retracted. No shifting dulness.
8	Knocked down by motor-car.	Three-quarters of an hour later, walked into infirmary. Very collapsed, however.	Pulse "slow."	Yes.	Guarding, especially over right rectus.

Ruptured intestine.—There were six cases, and of these four patients recovered.

TABLE III.—*Ruptured Intestine.*

No.	Sex and age.	Year.	Operation.	Result.
1	M., 44.	1900	None. Fractured pelvis, ruptured cæcum. Dying.	Died under 24 hours.
2	M., 18.	1900	21 hours after injury. Jejunum severely torn. Sewn up.	Died six hours later. At necropsy a second smaller rent was found in jejunum.
3	M., 50.	1901	Six and a half hours after injury. Tear ½ inch long, probably of jejunum. Sewn up.	Recovered. Subsequent history unknown.
4	M., 22	1902	Four hours after injury. No leakage of fæces. Tuberculous peritonitis present. Sewn up.	Recovered. Seen in February, 1910. Slight incisional hernia. Quite well ever since and in full work.
5	M., 31	1904	Five hours after injury. Half circumference of jejunum torn, close to duodenum. Sewn up.	Recovered. Seen in February, 1910. Quite well ever since, but mentally weak.
6	M., 16	1906	Six hours after injury. Jejunum torn right across; mesentery torn; much blood. Sewn up end to end; mesentery sutured.	Recovered. Was seen six months later; quite well.

Some general remarks will be made later. A table of the recorded symptoms in five cases follows.

TABLE IV.—*Symptoms in Ruptured Intestine.*

No.	Injury.	General condition.	Pulse and temperature.	Pain.	Abdomen.
2	Kick by horse one hour before admission.	Much collapsed; improved under morphia; later got worse.	Pulse 30, temperature 96·8. Later, pulse 80.	Yes.	Hard, retracted, very tender.
3	Struck by handle of miner's pick.	On admission, two and a half hours later, anxious appearance; retching, but not vomiting.	Pulse 80, moderate volume, soft.	Great, in paroxysms.	Hard and retracted, very tender.
4	Cycled into shaft of cart.	Soon after accident, not collapsed; after an hour or two very anxious appearance; vomited three times.	Pulse 88, good; increased to 104 in an hour.	Much.	Intensely tender and very rigid. Rent in the muscles.
5	Pole of swing boat struck abdomen.	Immediately vomited "dark stuff." Walked to tramcar. On admission, very collapsed; abdominal facies. Vomited blood (℥ii.) three times. No improvement in four hours.	Pulse 62, strong, high tension. Temperature 95°. Four hours later, pulse 70, temperature 97°.	Much.	Did not move with respiration. Very tender and rigid; retracted.
6	Block of crane fell on him.	On admission, was concussed; not very collapsed. Four hours later, paler, collapsed.	Pulse 100. Temperature 97·8°. Four hours later, pulse 130.	Much.	Upper part moved on respiration. Very rigid and tender, especially in hypogastrium. Dulness over pubes and left Poupart's ligament.

Ruptured pancreas.—Two cases; one recovery. One of these has already been described under the heading of ruptured liver (Case 7, Table I.). The injury to the pancreas was not actually found, but was diagnosed on the evidence of fat necrosis, scattered throughout the subcutaneous, subperitoneal, and intra-abdominal adipose tissue. This case was operated on two days after the injury, but nothing was done. She nearly died from pneumonia a few days afterwards, but eventually recovered. I saw her in February,

1910, when she was perfectly well. There had been one attack of acute abdominal pain.

The other case, a boy, aged 12 years, was admitted in 1907, shortly after having been run into by some trucks. He was very collapsed, vomiting, and in considerable pain. The pulse was 99 and the temperature 97·4° F. The abdomen was very rigid and tender. Being watched for some hours, his condition became more alarming, though details are not given. Laparotomy was performed; the pancreas was found torn right across and there was much effusion of blood coming from the lesser sac. Two arteries were found and tied. The rent in the pancreas was plugged with gauze. He did well for a while, then developed pneumonia of both bases after one week. The edges of the wound appeared softened and digested. Eventually he became noisy and delirious, with irregular fever, and died from gangrene of the lung three weeks after the injury. At the necropsy there was a large subphrenic abscess under the left dome of the diaphragm communicating with the tear in the pancreas, and a good deal of tissue digestion.

These two cases are very characteristic of the types of clinical picture described in the literature as following injury of the pancreas. Pneumonia, fat necrosis, and subphrenic abscess are all frequent.

Ruptured spleen.—Three cases; all of them were fatal.

TABLE V.—*Ruptured Spleen.*

No.	Sex and age.	Year.	Operation.	Result.
1	M., 33	1903	Seven hours after injury. Great internal hæmorrhage; large rent of spleen. Splenectomy.	Died under 24 hours.
2	M., 24	1905	Seven or eight hours after injury. Huge internal hæmorrhage; spleen in two pieces. Splenectomy.	Died nine days after.
3	F., 4	1905	Admitted dying two days after injury. No operation.	Died under 24 hours. Rupture of liver and spleen found post-mortem.

TABLE VI.—*Symptoms in Ruptured Spleen.*

No.	Injury.	General condition.	Pulse and temperature.	Pain.	Abdomen.
1	Crushed by wheel of cart.	Condition on admission did not give rise to anxiety. No notes.	—	—	—
		Six hours later, pale and collapsed.	Very weak pulse.	Yes.	Dull on left side. Splash over præcordial area.
2	Fork of bicycle broke.	Immediately after injury seemed all right.	Pulse 90, good volume.	None.	No tenderness or rigidity.
		Six and a half hours later, very collapsed; intensely white.	Pulse 98, weak. Temperature 95°.	Yes.	Full, rigid, not tender.

Ruptured kidney.—Six cases; three recoveries. In one of the fatal cases the liver was also ruptured. In another the pelvis of the kidney was torn by the injury, and in the course of months following a saccular distension took place. The fatal result was brought about by the performance of a nephrectomy. A large number of patients whose only symptom was a transient hæmaturia have not been included in the list.

Ruptured bladder.—Five cases; only one recovered. In this case, the pelvis was also fractured. Four were intraperitoneal ruptures; in the other case the bladder was torn completely away from the urethra. In one case there was apparently no injury; the patient was in a drunken sleep, and was awakened by the pain of the rupture. No stricture and no ulceration of the bladder were found. This occurrence, though very unusual, is not unique.

TABLE VII.—*Ruptured Kidney.*

No.	Sex and age.	Year.	Condition and treatment.	Result.
1	M., 21	1900	Admitted in October, 1899, for "? ruptured bladder," after fall from ladder; no operation.	—
			Admitted later for recurring lump in abdomen associated with hæmaturia, which proved to be a saccular bulging of the pelvis of the right kidney. Drained from in front. Finally, lumbar nephrectomy was performed. The kidney was reduced to a mere shell.	Death from shock, eight months after injury.
2	M., 20	1901	Pain, fever, vomiting, hæmaturia, tender mass felt in left loin, diagnosed as perirenal hæmatoma. Treatment: rest.	Cured. Seen and examined in February, 1910. Quite well ever since. Successful cricketer.
3	M., 16	,,	Collapse, vomiting, mass in left loin diagnosed as perirenal hæmatoma; hæmaturia. Treatment: rest.	Cured. Wrote in February, 1910, to say that he has been perfectly well since.
4	M., 35	1902	Ruptured liver and kidney. Dying. No operation.	Died under 24 hours.
5	F., 25	1906	Fell down four days before admission. Admitted collapsed, with large swelling in loin. Operation: perirenal hæmatoma found; kidney ruptured and full of blood. Nephrectomy.	,, ,,
6	M., 51	1908	Hæmaturia. Swelling in loin. Treatment: rest.	Cured. Seen in February, 1910. Perfectly well ever since.

TABLE VIII.—*Ruptured Bladder.*

No.	Sex and age.	Year.	Operation.	Result.
1	F., 4	1901.	On the evening after the day of injury. Abdomen opened above pubes; bladder found completely torn away from urethra; urine in peritoneal cavity. Fractured pelvis. Bladder opened and drained above pubes; catheter put in.	Died next day.
2	M., 24	1902	One week after injury. Abdomen opened; at least 13 pints of urinous fluid in peritoneum. Intraperitoneal rupture of bladder. Rent sewn up; catheter passed and left in.	Died two days later.
3	M., 38	1905	Several hours after probable time of rupture; the subcutaneous tissues in front of the bladder were explored on the theory of extraperitoneal rupture and none found. Seven or eight hours later abdomen opened; intraperitoneal rent found and sewn up; catheter tied in.	Died immediately afterwards.
4	M., 75	1906	About six hours after injury. Abdomen opened; intraperitoneal rent of bladder found and sewn up; catheter tied in.	Died under 24 hours.
5	M., 31	1909	Ten hours after injury. Abdomen opened; intraperitoneal rupture of bladder; torn by splinter of a fractured pelvis. Rent sewn up; catheter tied in.	Recovered. Seen in January, 1910. Some pain over the site of fracture. Mild cystitis; no other bladder trouble.

A table of the symptoms in each of the five cases is appended. Some general remarks are made in the summary at the end.

TABLE IX.—*Symptoms in Ruptured Bladder.*

No.	Injury.	General condition.	Pulse and temperature.	Abdomen.	Bladder.
1	Run over by train.	Seen soon after; sent home; no pain; facies normal.	Pulse quiet.	Soft.	Could not pass urine that night.
		Next day, in out-patient-room, was pale and anxious-looking, in great pain; admitted. Symptoms increased later in the day; vomiting.	Pulse 148, small.	Distended, rigid; dull in flanks.	No urine passed. Only blood withdrawn by catheter. Fluid injected did not all return.
2	Fell into ditch when drunk, one week before admission.	On admission, little or no pain. Did not appear very ill.	Pulse 88, small, regular. Temperature 98°.	Tense, greatly distended, not rigid; dull in flanks. Œdema of skin.	Had been passing urine sometimes and using catheter sometimes.
3	Bladder ruptured whilst asleep, drunk. No obstruction.	Admitted some hours after. Looked ill; much pain.	Pulse 120, temperature 98°.	Distended; very tender; rigid in hypogastrium. Effusion into abdominal wall.	Only blood by catheter. Thought to be surgical emphysema of rectum.
4	Ashes fell on him.	Admitted soon after. Very collapsed; great pain.	Pulse not palpable.	Tender in hypogastrium. Rigid.	(No notes.)
5	Immense stone fell against him, and pinned him down.	(No notes.) Admitted eight hours after.	—	Distended, tender, bruised.	(No notes.)

Ruptured inferior vena cava.—A boy, aged 10 years, was brought in dead in 1906, having been knocked down by a vehicle in the street. Death was almost instantaneous. At the necropsy there was a rent one-third of an inch long, obliquely placed, in the inferior vena cava just below the pancreas. There was a little blood (3 oz.) in the peritoneal cavity. This was the sole injury. The condition must be very rare, if not unique.

Ruptured mesenteric or omental vessels.—A boy, aged 12 years, was admitted in 1908, presenting symptoms of internal hæmorrhage after a fall on the abdomen. An operation was performed and a blood effusion found, but no source could be discovered. He got well.

General Conclusions.

These remarks may be classified under the headings of Diagnosis and Prognosis.

Diagnosis.—The great outstanding lesson is to enforce the need for cautious and patient observation after any abdominal injury, especially if it is of such a nature that the blow might be unexpected or severe. Above all, no favourable opinion must be based solely or principally on the rate or character of the pulse. Excluding cases admitted moribund, out of ten patients with ruptured liver, intestine, pancreas, or spleen, the pulse-rate when they were first seen was in one case 100, in another 99, and in seven about normal. In one it was only 30. *In every case of rupture of any abdominal viscus in which the pulse-rate on admission exceeded 100, the patient died within 24 hours.* It is often mentioned that the volume and tension were good. The text-books usually state that the pulse-rate will rise if there is a serious injury. This was true in at least six cases, but in one of ruptured liver it fell from 84 to 62.

The temperature seems to be of more value. It is only recorded in the notes nine times; in five of these it was markedly subnormal. Pallor or anxious appearance is often remarked upon. Abdominal pain and rigidity were almost constant, except in the tragic and deceptive cases shortly to be narrated. Vomiting was not usual. Only one patient vomited blood. The diagnosis was usually made by observing that after some hours the appearance, the abdominal condition, and the pulse did not improve; in many there was a decided change for the worse.

Several cases illustrate well the extraordinary way in which the patient may come up with few or no alarming symptoms after a mortal injury. A girl (Case 1, Table VIII.) whose bladder was torn completely away from the urethra, and whose pelvis was fractured, was seen soon after the injury in the casualty room; the appearance was normal, the pulse slow and of good volume, and the abdomen soft. It was not until she came up with an out-patient note on the following day that a diagnosis was made.

A man (Case 2, Table VIII.) fell into a ditch whilst intoxicated and ruptured his bladder into the peritoneum. He did not come to the infirmary for a week. During that time he saw his medical man, who passed a catheter several times; often he could pass urine himself. He was up and about part of the time. On admission his abdomen was immensely distended; at the operation at least 13 pints of urinous fluid was evacuated, and 12 sutures were needed to sew up the rent in the bladder.

The report further illustrates the deadly nature of injury to the spleen, on account of the frequency with which it passes unrecognised. Both the cases recorded were, when first seen, apparently little the worse for their hurt, though about six hours later both were in a dying condition. It cannot be too thoroughly impressed upon the new generation of medical men that all cases of unexpected or possibly severe blows on the abdomen must be watched for several hours, however good the pulse may be, before they can be regarded as safe.

Prognosis.—It will be observed that there is an excellent series of recoveries after ruptures of the intestine, and several after severe injuries of the kidney, but that only one here and there is saved after other abdominal injuries. It is gratifying to find, however, that those who survive the immediate trouble seem to do well afterwards. Two got small incisional hernias. Apart from these the writer has seen or heard from one case of ruptured liver and pancreas, two cases of ruptured intestines, three of severe injuries of the kidney, and one of ruptured bladder. Each gave a gratifying account of subsequent progress, and all were as well and strong as ever they were, with the exception of the last. An exception must be made in regard to ruptures of the pancreas. Both cases got pneumonia, and one died several weeks later of a subphrenic abscess and gangrene of the lung.

Clifton, Bristol.

CHRONIC OBSTRUCTION OF THE BOWEL IN A HYDROCEPHALIC IMBECILE; RESULTS AT POST-MORTEM EXAMINATION.

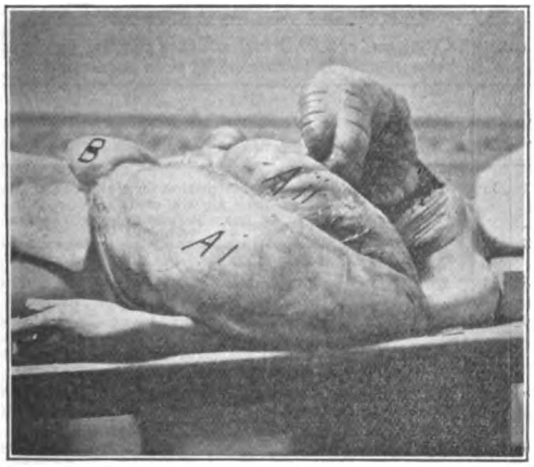
BY A. L. E. F. COLEMAN, M.B., CH.B. ABERD.,
AND
H. D. EVERINGTON, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

A MAN, aged 28 years, was admitted into the Croydon General Hospital, under the care of Dr. John Wayte (by whose kind permission these notes are published), on May 11th, 1909, with symptoms of obstruction. The history of the case showed that the patient, an imbecile, had always had difficulty in getting his bowels to move. The difficulty was becoming greater and he became "stouter and stouter." Pain began to be complained of, but medical advice was not sought until the day of his admission into hospital. He was hydrocephalic and the legs were paralysed, but he had been able to crawl about and had seemed fairly happy.

On examination the abdomen was found to be enormously distended. It was resonant in places, but for the most part was dull, and a hard mass 8 or 9 inches broad could be felt in the middle line. The patient complained but little of pain in spite of the obviously serious condition. Enemata of turpentine and gruel were begun, and after three injections a small motion was passed. Castor oil in small repeated doses was administered, but neither of these measures availed,

and the patient gradually sank and died at 9.40 A.M. on the 13th.

Necropsy.—The abdomen measured 52 inches at its greatest circumference, and on being incised the tissues began to tear owing to the internal pressure, showing that the muscular walls had not entirely accommodated themselves to the swelling, and that the condition was therefore to some extent acute. On opening the peritoneum a hollow viscus at once protruded and had to be punctured to prevent its bursting. The abdomen was then completely laid open and the front wall of the chest was removed. What appeared to be an enormous stomach was then seen, extending from the level of the third rib above down into the pelvis. The heart was not to be seen, and the lungs could just be detected at the sides; the diaphragm was completely displaced. The viscus mentioned proved to be an immensely dilated sigmoid flexure and rectum, terminating on the one hand (A ii) in the lower end of the descending colon, and on the other (A i) at the anus. The length of this loop of intestine was 45 inches and its greatest circumference 23 inches. On laying it open it was found to contain nearly 3½ gallons of fæces of a clay-like consistence and dark brown colour. The walls of the sac were very thick and the vessels exceedingly large, as may be seen from the illustration. The rest of the large bowe



Reproduction of a photograph showing immensely distended sigmoid flexure and rectum.

was somewhat distended with gas and measured at its greatest circumference 17 inches, but beyond this increase in size it was normal. The small intestine and stomach appeared to be normal. The bladder was entirely covered by peritoneum and was pedunculated, as appears in the illustration in the right groin at B. The chief point with regard to the other organs was the small size of the lungs—13 oz. each—and these were compressed into a small space at the apex of each side of the thoracic cavity. The skull measured 26 inches in the occipito-frontal diameter; the fontanelles were closed, but the bone was everywhere thin. The ventricles of the brain contained over a pint of clear fluid.

This case well illustrates how greatly the wall of the large bowel may be stretched and its lumen increased in chronic constipation, and to what extent the abdominal parietes will accomodate themselves to the altered conditions. That such a condition could arise without the greatest distress and pain can only be accounted for by the fact that the patient was an imbecile.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the town-hall, Ottery St. Mary (Devon), on August 21st, Sir John Kennaway, on behalf of a large number of subscribers, presented Mr. Felix P. Bartlett, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Lond., with a silver salver as a mark of respect and esteem on the occasion of his leaving Ottery St. Mary for Australia. Mrs. Bartlett received a rose-bowl.

THE OPERATIVE TREATMENT OF RETROVERSION AND PROLAPSE OF THE UTERUS.

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PROLAPSE of the uterus occurs from the following causes: (1) Tearing or stretching of the posterior segment of the pelvic floor, which consists chiefly of the levator ani and the deep pelvic fascia; (2) increased intra-abdominal tension and alteration in the line of projection of the intra-abdominal pressure; and (3) stretching of the parts forming the anterior segment of the pelvic floor. In the early stages of prolapse one or all of these causes may be at work, in the later processes all are involved.

A short description of the normal conditions of the pelvic cavity will help in understanding this. In the natural condition of the pelvic cavity the uterus in the erect position of the body, and with the bladder entirely or almost empty, lies somewhat anteflexed upon the bladder, and when pressure is put upon the uterus by any increase of intra-abdominal tension the direction in which it is exerted is at a right angle forwards and downwards and tends to still further antevert the uterus. When the bladder is full the uterus is pushed backwards, and any increase in the intra-abdominal pressure tends to aggravate the condition. In this position a stretching of the anterior pelvic segment takes place, and the backward pressure may become such that a permanent retroversion or retroflexion is produced. These two factors of themselves will, however, not cause prolapse unless the third factor be weakened or destroyed—viz., the posterior segment of the pelvic floor. This, as we have seen, consists of the levator ani and the fascial planes constituting the perineal body. Under increased intra-abdominal pressure this body contracts to oppose the effect of the contraction of the abdominal muscles and closes the outlets of the pelvis, the rectum, and vagina during this period of strain. When the perineal body is torn or stretched not only does this counteracting force disappear, but the angle at which the force from above is directed is changed. Instead of being downwards and forwards, it now becomes downwards and partially backwards. When the force acts in this manner on a relaxed posterior segment, and especially on an enlarged and flabby uterus such as is present after parturition, first retroversion, then complete descent of the pelvic contents, takes place.

The sequence of events is, then, as follows:—A torn perineum with stretching of the utero-sacral ligaments and vesico-vaginal septum, together with a large, flabby, sub-involuted uterus, allows any increased intra-abdominal strain, such as lifting, &c., to produce a prolapse more or less complete.

Any operation, therefore, undertaken to cure this condition must aim at three things: (1) Restoration of the perineal body; (2) replacement of the uterus to its normal position, so that the intra-abdominal pressure is again exerted in the normal direction—viz., downwards and forwards; and (3) improvement of the condition of the anterior uterine segment.

As many of these cases of procidentia occur in women who have not passed the menopause, a further important desideratum is that the possibility of conception shall not be interfered with, and in the event of pregnancy that the patient shall not incur any special risks during parturition. All operations which have as their result the fixing of the uterus to the anterior abdominal wall are to be condemned. Not only may this suspension interfere with the natural course of pregnancy, but post-partum hæmorrhage is said commonly to follow labour when the uterus is thus fixed. Moreover, the adhesions formed are apt to stretch and to produce a band between the uterus and the anterior abdominal wall which may be a source of danger as the incarceration of a loop of intestine under it can occur.

The operation I am about to describe obviates, I think, all these disadvantages, and is easy to perform. The time occupied in the whole operation need not exceed half an hour and no special instruments are required. Since my first operation in June, 1909, I have operated on 25 cases varying in age from 20 to 73 years, and all have

been successful both as to the operative result and subsequently. The preparation of the patient for the operation is similar to that for any pelvic operation by the combined abdominal and perineal route. The patient stays in bed for at least two days before the operation. Her vagina is douched twice a day with 1 in 2000 sublimate lotion; a dose (ʒi.) of castor oil is given two nights before the operation; on the evening preceding the day of operation a hot bath; and on the operation morning a simple enema is administered. Two hours before the time fixed for operation the abdomen and vulva are shaved dry and painted with tincture of iodine (B.P.) and the parts are covered with a sterile towel. The patient is first nearly anæsthetised with chloroform, and ether by the open method is given during the remainder of the operation. The patient is placed in the lithotomy position for perineorrhaphy and the abdomen, vulva, and vagina are again painted with tincture of iodine. I invariably do the flap-splitting operation devised by Lawson Tait, making the alteration in the technique of stitching the raw surfaces together in layers with buried catgut sutures. A Pezzer retaining catheter is inserted into the bladder and remains for a week; the vagina is plugged with a gauze tampon powdered with boric acid, and the patient is then transferred to the Trendelenburg posture. Surgeon and assistants meanwhile put on fresh sterile gloves before undertaking the abdominal part of the operation. The parietal incision is made in the middle line, the lower end reaching the pubes below. After opening the peritoneum the pelvic contents are examined; the uterus is grasped with forceps and pulled upwards. The intestines are then packed off afterwards with gauze mops. Each round ligament is seized with clip forceps about its centre. Another pair of forceps is passed through each broad ligament close to the uterus and 1 to 2 inches below its superior margin, care being taken to avoid the veins of the pampiniform plexus. The round ligaments are now caught in the forceps, passed through the broad ligaments, and drawn through the latter until their loops meet behind the uterus. A strong silk suture is passed through them, including the back of the uterus, and is tied. In severe cases of prolapse a second suture is inserted in the same way an inch lower down to obtain a broader sling from which the uterus hangs. The position of the uterus is now entirely changed. It is raised high up in the pelvis, anteverted, and lying on the bladder. The broad ligaments are tightened up by the passage of the round ligaments through them; the utero-sacral ligaments are also drawn upwards, and both anterior and posterior vaginal walls are tightened. As soon as the patient is released from the Trendelenburg position the intestines fall down into Douglas's pouch, and this should be seen before closing the abdomen. The abdominal wall is sutured in tiers, the wound is painted with iodine and dressed with aseptic gauze and wood-wool wadding.

After-treatment.—The vaginal tampon is removed in two days, after which a douche of 1 in 5000 sublimate lotion is given night and morning. A simple enema is administered every day. The Pezzer catheter remains in the bladder for a week and urine is allowed to escape at six-hourly intervals by removing the plug in the end of the catheter. During this time large quantities of distilled water (half a gallon per day) should be drunk by the patient to prevent the deposit of salts on the catheter from the urine. No restriction is made as to the position the patient may select as she lies in bed, where she remains for three weeks.

The after-history in all of the cases on which I have performed this operation is excellent. No bladder trouble such as might be expected is complained of, the patients being able to retain their urine for as long as eight hours.

One patient (Case 4) returned complaining of "something coming down," but examination showed the uterus to be high up in good position. There was, however, a slight prolapse of the anterior vaginal wall, but the bladder was not affected, and this was rectified by removing an elliptical portion of the mucous membrane. In this case the prolapse was of many years' standing, and the vaginal mucous membrane was very much thickened from exposure and friction on the patient's thighs.

Appended herewith is a list of all the cases I have operated on up to the end of last year. As none of these patients have become pregnant since the operation I have had no opportunity of recording the behaviour of the uterus during this period and subsequently. It is not too much to hope that the round and broad ligaments with their muscular and elastic tissue will accommodate themselves to the growing requirements of the enlarging uterus and return to their normal condition when it has emptied itself, as we know these ligaments do in the normal state.

TABLE I.—*Cases of Retroversion of the Uterus for which Suspension only was performed.*

Case.	Age.	Date of operation.	History.
1	42	6/1/10	No children. Dysmenorrhœa. "Bearing-down" pains. Uterus retroverted and enlarged.
2	29	5/4/10	Ill for nine months. Three children. Youngest 3 years. Metrorrhagia and dysmenorrhœa. Uterus retroverted and enlarged.
3	20	16/8/10	"Pain and falling of the womb." No children. Frequent micturition. Uterus retroverted and pushed down. Cystic swelling in Douglas's pouch size of goose's egg. Right cystic ovary removed. Uterus suspended.
4	37	18/11/10	Three children, youngest 6. Metrorrhagia and menorrhagia. Uterus retroverted and enlarged (4½ in.).
5	39	21/11/10	No children. Menorrhagia and dysmenorrhœa. Uterus retroverted and enlarged.
6	24	—	—

TABLE II.—*Cases of Prolapse of the Uterus for which Suspension and Perineorrhaphy were performed.*

Case.	Age.	Date of operation.	History.
1	35	30/6/09	Frequency of micturition for eight years. Complete prolapse for six years. Four children, youngest 3 years. Perineum torn to rectum.
2	35	23/7/09	Complete prolapse for two years. Four children, youngest 4 years. Perineum ruptured.
3	38	28/7/09	Complete prolapse since birth of last child two years ago. Perineum torn.
4	42	31/8/09	Complete prolapse for 14 years. Cervix very elongated. Four children, youngest 9. Perineum torn. Subsequent colporrhaphy for prolapse of vaginal mucosa.
5	43	11/11/09	Slight prolapse and cystocele. Four children, youngest 9. "Bearing down" and frequency of micturition. Perineum torn.
6	35	10/1/10	Slight prolapse and retroversion. Menorrhagia. Frequent desire to micturate. Three children, youngest 18 months. Perineum torn.
7	67	23/1/10	Complete prolapse for 20 years. Uterus constantly outside vulva.
8	35	24/2/10	Two children, 6 and 1¾ years. Perineum torn at first confinement. Uterus prolapsed slightly after this; completely since last child was born.
9	42	19/4/10	Seven children, youngest 5. Complete prolapse for seven years. Perineum torn.
10	42	11/5/10	Six children, youngest 7. Complete prolapse for some years. Perineum torn into rectum.
11	28	1/6/10	Three children, youngest 2. Has had "bearing down" since birth of last child. Complete prolapse. Perineum torn.
12	73	16/6/10	Ten children, youngest 32. Complete prolapse for many years. Patient unable to go about.
13	32	24/6/10	Complete prolapse since birth of last child eight years ago. Frequency of micturition. Perineum torn.
14	56	26/8/10	Six children, last 18 years ago. Constant desire to micturate. Complete prolapse for several years. Perineum torn.
15	39	28/8/10	Six children, youngest 5. Complete prolapse for three years. Perineum torn.
16	24	24/9/10	One child, 18 months ago. Large cystic swelling in Douglas's pouch. Uterus retroverted and prolapsed, but not outside vagina. Small ovarian cyst removed from left side. Uterus suspended. Perineorrhaphy.
17	38	28/9/10	Ten children, last seven weeks ago. Uterus prolapsed for four years. Perineum badly ruptured.
18	30	3/10/10	Three children, youngest 11 months. "Falling of womb" for two years. Perineum torn at first confinement.
19	26	2/11/10	Three children, youngest 2. Has had a "bearing down" since birth of first child. Complete prolapse. Perineum torn.

Sunderland.

PHTHISIS IN WALES.

BY HUGH R. JONES, M.A., M.D. CANTAB., B.SC. LOND., D.P.H.

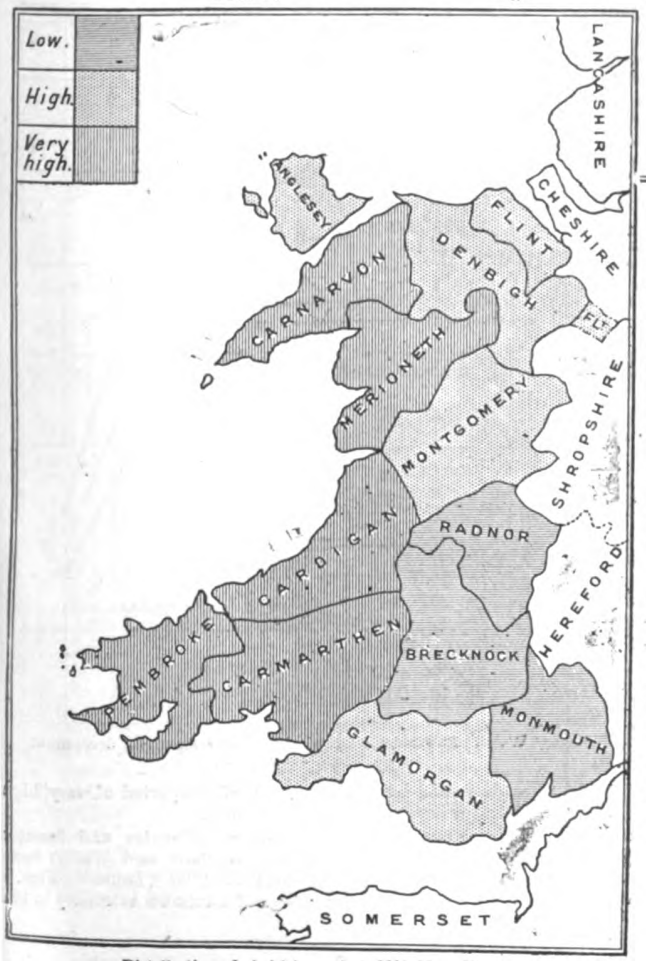
IN the Registrar-General's report for 1909, corrected death-rates are published for the quinquennium 1905–09, for 18 counties in which the highest mortality from phthisis was recorded. (Table I.) Ten of the 18 counties were Welsh, and in six of them the mortality was higher than in any English county. Yet the death-rate from phthisis in Wales has fallen fully 37 per cent. during the last 25 years—from 2·04 per 1000 in 1881–1890 to 1·28 in 1900–09, while that in England and Wales fell 33 per cent.—from 1·77 in 1881–1890 to 1·19 in 1900–09.[1]

TABLE I.—*Corrected Phthisis Death-rates per Million.*

Phthisis 1905–09.	Persons	Males	Females
England and Wales	1125	1325	938
England, excluding Monmouthshire	1120	1333	920
Wales, including Monmouthshire...	1213	1195	1229
Cardiganshire...	2237	2320	2159
Carmarthenshire	1525	1409	1633
Merionethshire	1512	1567	1462
Carnarvonshire	1501	1588	1420
Pembrokeshire	1393	1383	1401
Anglesey	1356	1167	1534
Montgomeryshire	1217	1316	1125
Flintshire...	1151	1284	1026
Brecknockshire	1148	1031	1257
Glamorganshire	1134	1122	1145

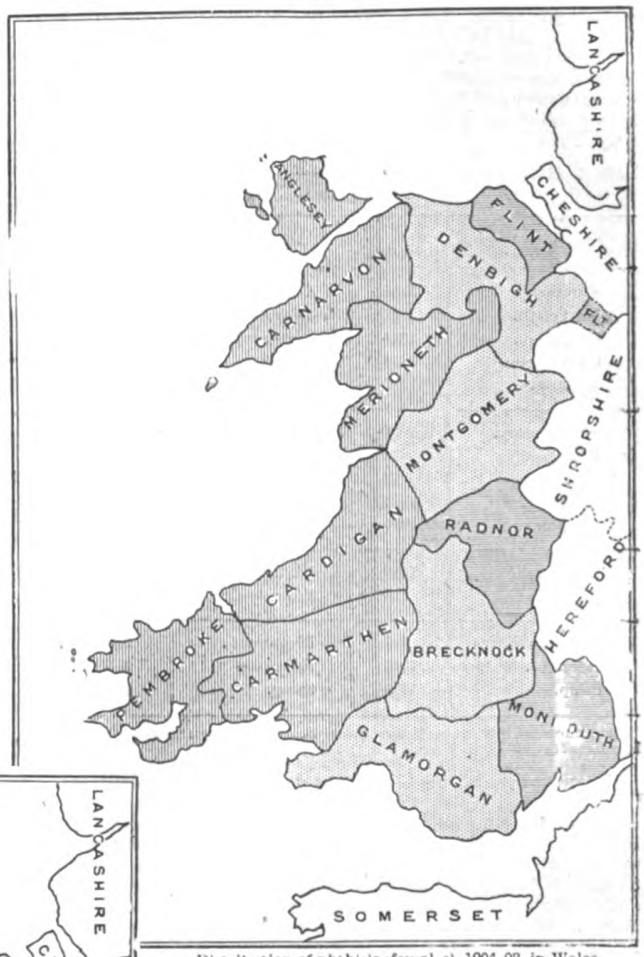
[1] Crude death-rates are quoted unless otherwise stated.

FIG. 1.



Distribution of phthisis (males), 1904–08, in Wales.

FIG. 2.



Distribution of phthisis (females), 1904–08, in Wales.

The mortality of males in Wales is, however, less than that in the whole country—1·30 per 1000 compared with 1·40 for the decennium 1900–09—notwithstanding that it was in excess in 5 out of the 12 Welsh counties. It is intermediate between the mortality in the urban and rural counties. It must be remembered that there are no unhealthy industries in Wales, and that two of the chief occupations—viz., mining and agriculture—are favourable to a low mortality from phthisis, while the mortality in a third—stone and slate quarrying—though twice as high as in the others, is not much above the average, the comparative mortality figures being for all occupied males, 175; coal-miners (South Wales and Monmouthshire), 93; stone and slate quarries, 186; and agriculturists, 79. The recorded mortality of males cannot therefore be regarded as satisfactory.

On the other hand, the mortality of females is very much higher than in the whole country (being 1·27 per 1000, compared with 0·99), with the result that the phthisis mortality of both sexes in Wales exceeds that for England and Wales by 0·09 per 1000. The female mortality in Wales is lower than the male mortality only by 2·3 per cent., while for the whole country it is lower by more than 29 per cent.

If the statistics of South and North Wales be compared it is seen that while the mortality of

TABLE II.—*Crude Phthisis Death-rates per Million, 1904–08.*

—	Males.	Females.
England and Wales	1362	963
South Wales	1215	1260
North Wales	1407	1261

females is nearly the same in both divisions, the male mortality is appreciably higher in North Wales than in South Wales. (Table II.)

The counties with the highest mortality—both male and female—are situated on the west littoral, those with the lowest mortality on the English border, and the mortality in the intervening counties is intermediate. (Table III., Figs. 1 and 2.)

TABLE III.—*Welsh Counties—Crude Phthisis Death-rates per Million, 1904–08.*

Males.		Females.	
Cardigan.	2304	Cardigan.	2134
Merioneth.	1762	Carmarthen.	1613
Carnarvon.	1663	Carnarvon.	1524
Carmarthen.	1434	Anglesey.	1433
Pembroke.	1358	Merioneth.	1428
		Pembroke.	1346
Montgomery.	1296		
Flint.	1238	Brecknock.	1205
Denbigh.	1167	Glamorgan.	1128
Anglesey.	1164	Montgomery.	1087
Glamorgan.	1121	Denbigh.	1038
Brecknock.	1008	Radnor.	974
Radnor.	616	Flint.	960
Monmouth.	948	Monmouth.	929
Hereford.	1048	Hereford.	913
Salop.	1076	Salop.	863

Reference to the maps shows how the mortality from phthisis increases from East to West.

Coincidently with the fall in the death-rate from phthisis in England and Wales, the age of maximum mortality from phthisis has been postponed both in males and in females. In 1851–60 the maximum male mortality occurred between the ages of 20 and 25 years, in 1861–70 between the ages of 35 and 45 years, and in 1891–1900 between the ages of 45 and 55 years. The maximum mortality among females in 1861–90 was between the ages of 25 and 35 years, and in 1891–1900 between the ages of 35 and 45 years.

In Wales a sustained high mortality of males between the ages of 20 and 65 years was recorded in the three decennia 1881–90, 1891–1900, and 1900–09 (Table IV., Figs. 3 and 4);

TABLE IV.—*Wales—Phthisis Mortality per 100,000 in Three Decennia.*

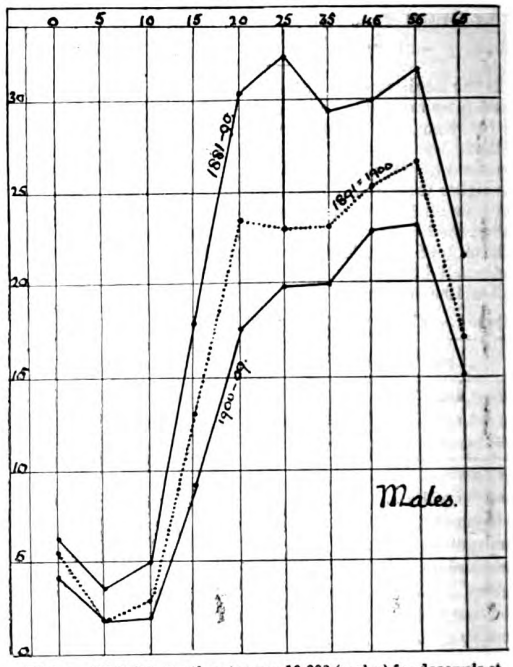
Age-period.	Males.			Females.			Persons.		
	1881–90.	1891–1900.	1900–09.	1881–90.	1891–1900.	1900–09.	1881–90.	1891–1900.	1900–09.
0—	63	56	42	61	46	34	62	49	38
5—	36	17	17	47	28	21	41	22	19
10—	49	29	20	110	72	57	80	50	39
15—	178	130	93	277	194	143	226	160	118
20—	303	234	174	335	240	181	319	237	177
25—	323	230	197	372	267	220	346	248	208
35—	293	231	198	329	253	203	311	242	201
45—	297	253	227	237	185	160	266	219	194
55—	316	265	231	198	159	129	255	208	178
65—	214	169	151	115	96	82	160	128	113
All ages ...	196	153	130	210	157	127	204	156	128

The 1900–09 figures supplied by the Registrar-General.

but a similar postponement of the age of maximum mortality is observed—from the age-period 25–35 in 1881–90 to the 55–65 period in the last two decennia. Among females the mortality rose to a maximum at the age-period 25–35 in the three decennia, but the duration of the period of very high mortality is shorter than among males.

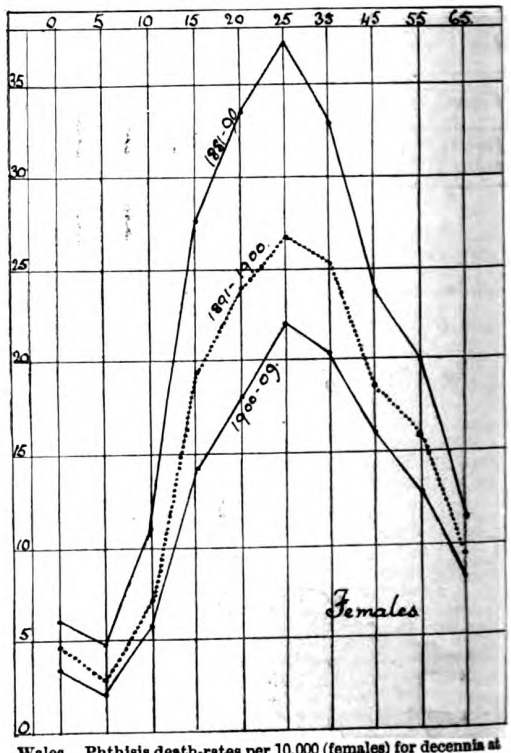
For comparison, the death-rates of males and females (North Wales, South Wales, and England and Wales) have been charted for the decennium 1891–1900. (Table V., Figs. 5 and 6.) Except for the earlier age of maximum mortality in the

FIG. 3.



Wales. Phthisis death-rates per 10,000 (males) for decennia at age-periods.

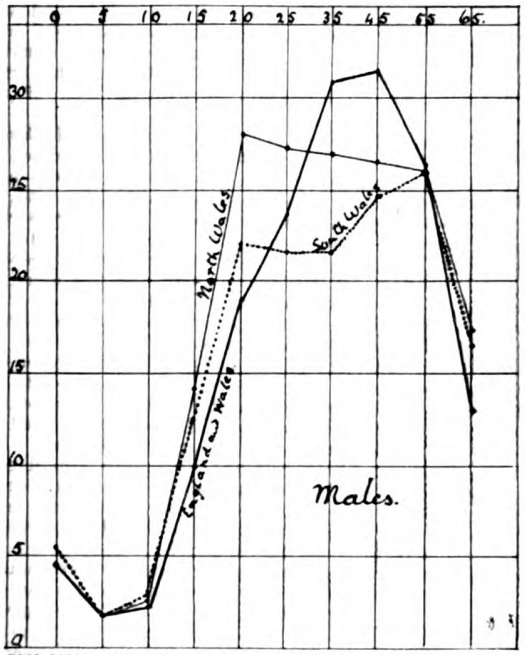
FIG. 4.



Wales. Phthisis death-rates per 10,000 (females) for decennia at age-periods.

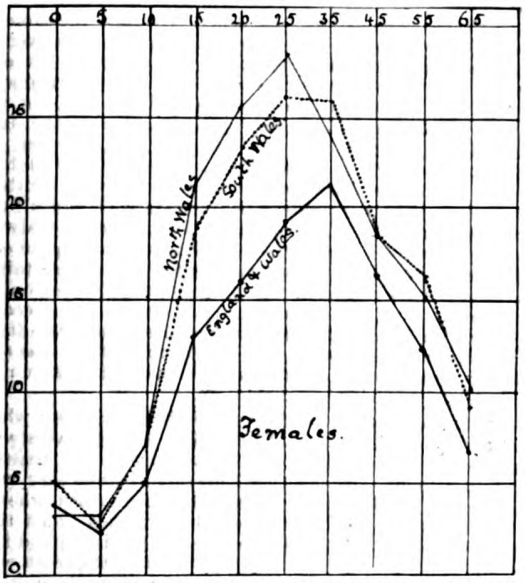
Welsh divisions, the three curves of female mortality are very similar in form. The curve for South Wales shows that the age of maximum mortality is being postponed. The curves of male mortality in the Welsh divisions differ materially in form from the curve for England and Wales. In North Wales the age of maximum mortality is 20–25 years, and a high rate of mortality is maintained until the 55–65 age-period.

FIG. 5.



1891–1900. Phthisis death-rates per 10,000 (males) at age-periods.

FIG. 6.



1891–1900. Phthisis death-rates per 10,000 (females) at age-periods.

In South Wales a similar period of high mortality is recorded, but the maximum mortality occurs at the 55–65 age-period. In England and Wales the mortality from phthisis increased to a maximum at the 45–55 age-period. At the earlier age-periods it was lower than the mortality in Wales, but in the 25–35 age-period it exceeded that of South Wales, and in the next age period that of North Wales also. The discussion of the significance of the differences in the age incidence of phthisis must be deferred until the county statistics for the last decennium are published.

TABLE V.—*England and Wales. 1891–1900. Death-rates from Phthisis at Age-periods per 100,000 living.*

Age-period.	Males.			Females.		
	England and Wales.	South Wales.	North Wales.	England and Wales.	South Wales.	North Wales.
0—	44	55	45	38	51	32
5—	17	17	17	24	26	33
10—	23	29	27	50	71	72
15—	99	125	142	129	188	211
20—	189	221	280	159	233	256
25—	237	216	272	192	261	284
35—	309	216	269	212	259	239
45—	314	247	265	164	186	185
55—	282	260	261	124	162	152
65—	130	166	173	67	92	102

Liverpool.

NOTES ON THE CLINICAL APPEARANCES IN TWO CASES OF CEREBRAL DISEASE,

ONE BEING GRAVE ORGANIC DISEASE AND THE OTHER PURELY FUNCTIONAL.

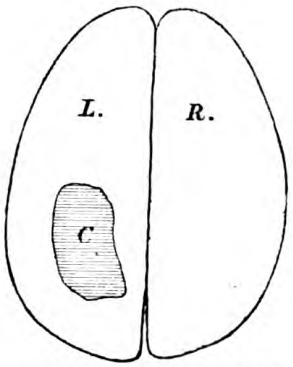
BY JOHN H. AYTOUN, M.B., C.M. EDIN.

MY reason for publishing the two following cases is to show the resemblance which a case of grave organic disease of the brain may bear to one of purely functional disease of that organ; and also to show the difficulty which may exist in general practice in making a diagnosis in such cases. In both cases a correct diagnosis was made, but in neither of them could it be made for at least several hours from the time that they were first seen.

CASE 1.—The patient was a female, aged 29 years, born in the North of Scotland. Her mother had died at an advanced age. Her father, when I first saw her, was still alive and in fair health at the age of 60 years. Two of her father's brothers had died from apoplexy with paralysis, in each case the attack beginning after the age of 40 years. The patient had never been very robust. Some years before the attack for which I attended her she fell, injuring the dorsal region of her back. This part subsequently had the actual cautery applied. Since then she had always worn a poro-plastic support round the chest. She was a person of considerable intelligence, earning her living by acting as a housekeeper, but her work was light. She took her meals quite regularly and was strictly temperate. For some months before her attack she had become most religious and had attended a number of missionary and other religious meetings. During this time, also, she often complained of a feeling of weakness and of breathlessness on exertion. It was noticed that she was unusually pale. Her employer said that for a week before her attack she was "queer." She seemed, however, to be in her usual spirits, and on the evening before her attack she went with her employer to call on some friends. On the day before her attack she told her employer that she had a peculiar sensation in her right arm. On the morning of her attack she got up as usual, made breakfast, and took some herself. After breakfast she went on with her ordinary work. Very soon she complained to a neighbour of feeling ill, and said that the left side of her head (pointing to the temporal region) was very painful. She was immediately put to bed in her clothes. She vomited a small quantity of bile-stained frothy liquid—the vomiting being accompanied by a considerable amount of gurgling in the abdomen. She moved about uneasily in bed and moaned frequently. At 10 A.M. I saw her for the first time; this was an hour after she became ill. She was lying in bed in her clothes, slightly on the right side. Her face was very pale. She rolled about in bed a little, and occasionally vomited a small quantity of mucus. Her eyelids were quite closed. On raising the eyelids the pupils were seen to be of equal size and neither

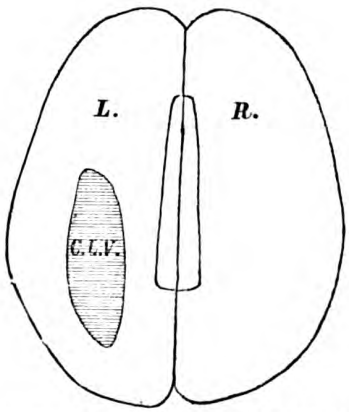
markedly dilated nor contracted. The conjunctival reflex was present on both sides. I noticed that on touching the left conjunctiva, in addition to spasmodic closure of the eyelids, there was also a marked drawing up of the angle of the mouth on the left side. The pupils reacted to light. On attempting to pass a finger into the mouth the teeth became violently clenched and the head was turned to the right side. I noticed that she was "unwell," and that the rectum was empty. The pulse was 84 per minute, regular, and of moderate force and volume. The vessel walls seemed to be healthy. The respirations became periodically slightly stertorous for a minute or so and then this symptom passed off. The temperature in the axilla was 97·8° F. Both legs and arms were quite flaccid and fell down when raised. Both knee-jerks were normal and no ankle clonus was present on either side. She could swallow, with some difficulty, a teaspoonful of milk when put into the mouth, but seemed to be quite unconscious. At 1 P.M. the patient's condition was very similar. There was slight retching of mucus occasionally. The teeth were still tightly clenched whenever a teaspoonful of milk was attempted to be poured into the mouth. No urine had been passed. At 7 P.M. the temperature was 101° and the pulse 150, small, and could only be counted with difficulty. The breathing was now stertorous, the face

FIG. 1.



Horizontal section of the brain at the level of the centrum ovale minus, showing clot in brain substance, C.

FIG. 2.



Horizontal section of the brain at the level of the centrum ovale majus, showing clot in the left lateral ventricle, C.L.V.

was still very pale, the eyelids were still closed, and the pupils continued equal, but did not react to light. The conjunctival reflex was entirely absent on the right side, and very slightly present on the left side. The teeth were still clenched. The left arm and leg were now both in an extended position and in a state of tonic rigidity, while the right arm and leg were flaccid, as if paralysed. In half an hour the conjunctival reflex was totally abolished on both sides. The face became livid, breathing more stertorous, and the patient died the same night.

Post-mortem examination.—On removing the calvarium the posterior half of the left cerebral hemisphere was seen to be bulged in a very marked manner. On horizontal section, exposing the centrum ovale minus, a large mass of dark clotted blood was seen to occupy the posterior and outer part of the left cerebral hemisphere. On making a similar section exposing the centrum ovale majus, a continuation of the same clot was seen, somewhat further from the surface and more elongated antero-posteriorly. It extended into the left lateral ventricle, which was much distended with blood-clot. The total weight of the clot I estimated to be from 3½ to 4 oz. I append diagrams showing the situation and shape of the clot as seen on sections of the brain. The right side of the brain showed no sign of any abnormality.

CASE 2.—Three weeks after the occurrence of Case 1 I was sent for in the morning to see a girl who had become unconscious. The history I got was that the patient, aged 18 years, had always been a strong healthy girl, and, as far as could be gathered, her family history was very good. She was accustomed to hard work. Early in the morning of the day that I was sent for she had become "unwell." She had got up as usual, and was going on with her work when she suddenly uttered a cry and fell on the floor, giving her head rather a hard knock and becoming apparently unconscious. She was carried to bed with her clothes on and was kept quiet. I saw her an hour after this occurrence and found that she was lying on her back in bed with her eyelids slightly open. She retched a little now and then, but nothing was vomited. She tightly clenched her teeth when any attempt was made to separate the jaws. The tongue was clean. Both legs and arms were quite flaccid, and dropped as if dead after being raised. The conjunctival reflex was present on both sides, and the pupils were equal and reacted to light. The pulse was 86 per minute, regular, and of moderate tension; the vessel walls were healthy; the respirations were regular and quiet; and the temperature in the axilla was 99° F. The patient lay apparently unconscious, taking no notice of anything and giving no answers to questions. Both knee-jerks were present, and there was no ankle clonus. On forcibly opening the mouth and pouring a teaspoonful of milk into it the milk was immediately rejected. The heart and lungs showed no abnormality, and the urine contained no abnormal ingredients. The patient's condition remained the same all day. The temperature came down to normal in the evening and the pulse remained good. The unconsciousness continued. I concluded that it was a case of hysteria major. The patient was allowed to remain quietly in bed, but was always watched by one person. She remained in the same state all the second day. On the third day, however, she became less drowsy and answered questions in monosyllables. She took for the first time a little nourishment without opposition. The temperature had remained during all this time between 99·2° and normal. The pulse was always regular and slow. The patient gradually became quite conscious and soon made a perfect recovery. She maintained that she had no remembrance of what had occurred on the two previous days. A month later, when she became "unwell," a similar attack came on in a less severe form. It lasted for a day and a half. No other attack has ever come on since, and she has now been married for a number of years and has had several children.

I think that the clinical features of these two cases which are worthy of note are:—1. The first patient was always delicate, while the second was always strong and healthy. 2. Both patients became rather suddenly ill while they were "unwell." 3. Both were apparently unconscious when I saw them for the first time. 4. Both retched when they first became ill, the retching in Case 1 persisting and that in Case 2 soon stopping. 5 In both cases the teeth were tightly clenched whenever an attempt was made to separate the jaws. 6. In both the conjunctival reflex was present on both sides when first seen.

It was really only the difference in the course of the disease in the two cases when watched for a few hours that made it possible to form a correct diagnosis in each case.

I have purposely given no opinion as to the predisposing or exciting causes of the attack in each case, as I wished merely to give the clinical symptoms and physical signs.

Broadstairs.

Medical Societies.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Social Legislation and the Medical Profession.—Erysipelas following an Intranasal Operation.—Exhibition of Cases.

THE first meeting of the session of this society was held on Sept. 7th at the Queen's-road Dispensary, Brighton, Mr. T. H. IONIDES, the President, being in the chair.

Dr. W. BROADBENT showed a girl aged 8 with Friedreich's Ataxy. She had been perfectly normal up to four years of age, and was then noticed to be constantly tripping and falling. The child could not now walk at all and had ataxic choreiform movements of the upper limbs. There were curvature of the spine and talipes equino-varus. The knee-jerks were absent and the plantar reflexes extensor. There was an external squint in the left eye, said to have come on since the illness started; the discs were normal and there was no nystagmus.

Dr. DONALD G. HALL showed a baby aged 5, a Cretin, who was improving on small doses of thyroid extract.

Mr. G. MORGAN showed an Anencephalic Fœtus born at the eighth month.

Mr. J TURTON read a paper entitled "Social Legislation and Legislative Proposals in their Relations to the Profession of Medicine." He traced the history of State or communal control of diseased persons from early times to the present day, and in reference to the latest proposal—the National Insurance Bill—he pointed out that the importance of the question of the health of the individual in its bearing upon the welfare of the State was so great and so obvious that legislative proposals in that connexion were at once removed from the arena of political party conflict, and the principles of such proposals being accepted by all parties their discussion immediately resolved itself into a mere question of detail; and paradoxical as it might sound, it might be asserted that in this fact lurked the great danger that in this branch of legislation the Statute Book might be the receptacle of many a crude and ill-digested enactment; for while the ordinary party questions were discussed and re-discussed in principle and detail, for more or less lengthened periods, in Parliament, by the press, and by the public, proposals like those of the National Insurance Bill which effected a revolution in the relations between the public and the profession, excited in Parliament merely an academic discussion on points of detail and formed the subject of negotiations intended to reconcile conflicting views, while the public generally displayed only a languid interest in a matter of great moment and of the very gravest importance to those engaged in the practice of medicine.—The paper was discussed by several members.

Dr. L. A. PARRY read notes of a case of Erysipelas following an Intranasal Operation, complicated with Meningitis, which ended in recovery. The patient was a healthy young man, who, for rather slight symptoms of nasal obstruction, was operated on by a London laryngologist in a nursing home. Two days later he was allowed to travel to Brighton, and in a few days developed an attack of pharyngeal erysipelas, which subsequently spread to the face. A typical attack of meningitis was the next event, and both Dr. E. Hobhouse and Sir Victor Horsley, who saw the patient, gave a practically hopeless prognosis. Large and frequent doses of polyvalent anti-streptococcic serum were given and the patient made a good recovery. Dr. Parry raised the question of the danger of intranasal operations, and deplored, firstly, the very trifling symptoms to relieve which this class of operation was so readily undertaken by the nasal specialists, and, secondly, the short period of after-treatment which the operators seemed to consider necessary. Patients were allowed to be up and out at a time when they should be in bed and having careful nursing.

Reviews and Notices of Books.

The Medical Diseases of Children. By REGINALD H. MILLER, M.D.Lond., M.R.C.P.Lond. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. Bristol: John Wright and Sons, Limited. 1911. Pp. 518. Price 12*s.* 6*d.*

THIS new work on the medical diseases of children will occupy a somewhat ill-defined position in the library of pædiatrics. Its limitations will preclude it from ranking among the larger text-books on the same subject, while it is far removed from the category of a cram book or "aid" for examination purposes. In his preface Dr. Miller states that his aim has been to produce a book of teaching value, and judged by this standard the work is an undoubted success. In one other respect we would quote the preface, for the passage will explain the extreme modernity of the author's methods: "Probably the time will come when we can classify all the infective processes mainly according to the infecting organism, and we shall speak of the pneumococcal, staphylococcal, streptococcal, and other infections as diseases, in the same way that we have for long spoken of tuberculosis and more recently have learnt to speak of rheumatism." Both statement and prophesy reveal the author's general attitude.

When we state that out of 518 pages 168 are devoted to infective diseases we indicate the bias of the work and supply the reader with a key which will admit him at once to the author's real presence. The rest of the book is mainly a compilation, quite fairly and ably made, but one which might have been made and personally supported by many hospital physicians; the chapter on infective diseases is a creation. Among infections, that by the pneumococcus stands first in order. It includes separate sections on infection of the lungs, of the pleuræ, of the heart and pericardium, meninges, peritoneum, kidneys, and joints. The account of pneumonia is excellent, especially that part of it which is concerned with the differential diagnosis between this condition and scarlet fever, acute meningitis, otitis media, appendicitis, cyclical vomiting, and acute tuberculosis. As regards treatment, the value of the ice-bag is emphasised. In the general diagnosis of pneumococcal infection the expedient of the blood count, and in the recognition of pneumococcal meningitis the value of lumbar puncture, are repeatedly referred to. The vaccine treatment of this infection is not mentioned, an omission at which we are not wholly surprised.

Next in order is described the rheumatic infection, an infection which covers a great number of more or less independent lesions. Dr. Miller is careful to explain the liability in children to the generalisation of infections, and this is particularly the case in rheumatism, whether acute or chronic. Since Dr. W. B. Cheadle's original lectures on the rheumatic state in childhood, we do not know a better account of the many and varying manifestations of rheumatism than is here written by Dr. Miller. Moreover, we believe that the author has performed a very great service in indicating the right use of the salicylates. There can be little doubt that the salicylates have a specific influence on the disease, but the dosage may have to be pushed to 150 or 200 grains per diem. The depressing influence of this line of treatment either has no existence in fact or has been greatly exaggerated. The salicylates may, however, produce an acidosis unless combined with a free exhibition of alkalies, and this fact Dr. Miller takes care to emphasise. Thirteen pages are devoted to the subject of chorea, a matter on which Dr. Miller has already communicated his views to the medical world. That he regards chor a

exclusively as a rheumatic manifestation may be assumed without question. Moreover, he believes that in rheumatic subjects, and especially in those of neuropathic tendencies, there is often a condition of latent chorea which is not suspected. Although erythema nodosum and rheumatoid arthritis are included among the rheumatic infections, the author regards them as manifestations of specific diseases, due to bacterial infection distinct from the ordinary infective organism of rheumatism.

Dr. Miller's work accurately reflects contemporary hospital teaching, but there is too much of the labeling of diseases by distinctive and often bacteriological nomenclature; there is too little in his writing of the individual and personal index of the child, both in health and disease; there is too much "cure" and too little prevention. The composite picture of disease is altogether too dependent on sharply defined mosaic work for our liking. The author has presented us with a book which possesses many merits, not the least being the promise of future and better work based on an extended experience.

Der Gynäkologischer Operationskursus an der Leiche. (A Course of Operative Gynæcology.) By Dr. WILHELM LIEPMANN. With 387 (in large part coloured) illustrations. Berlin: August Hirschwald. 1911. Pp. 456. Price 22 marks.

Dr. Liepmann has written an admirable manual of operative gynæcology, presenting several novel and striking features. On four points he lays stress — viz., the anatomy, the pathology, the bacteriology, and the causes of failure in the operations he describes. The anatomy is essentially applied anatomy, and his figures are the more instructive since the subject is in nearly all of them represented in the Trendelenburg position, so that the relation of the structures is the same as that in which they would appear to the operator during the performance of the operation. There are a large number, many of them coloured, of anatomical plates which are of the greatest value, and associated with the description of each operation is a short account of its chief anatomical relations. The pathology of the various procedures is illustrated both by preparations depicting the conditions found at the time of operation and also those persisting after the operation has been completed—conditions of which but little is said in the ordinary text-book of operative gynæcology.

The importance of bacteriological observations at the time of an operation is becoming more and more recognised, and the numerous examples quoted by the author in which such an investigation of the tissues at the seat of operation has led to the adoption of some particular mode of procedure are most interesting. The two operations in which an exact knowledge of the condition of the tissues as regards the presence or absence of organisms is of the greatest importance, are those of extra-peritoneal Cæsarean section and Wertheim's extended operation for carcinoma of the cervix. As Dr. Liepmann has shown, the cellular tissue in the broad ligaments in cases of cancer of the cervix contains not infrequently numerous organisms, and in these circumstances drainage through the vagina is of the utmost importance. No doubt in the future the assistance of the skilled bacteriologist will become a necessity in every well-equipped operating theatre, and upon his findings will depend in many instances the determination as to what particular operation shall be undertaken or whether drainage is necessary in any particular case. In such conditions the results obtained should be even better than they are now, and in many instances a correct conclusion will be come to where at the present time the surgeon would often have very grave doubts as to the best course to pursue.

Another most interesting feature of this work is the space devoted to the causes of failure in any given operation. From these sections the young surgeon will learn much, and a perusal of them will go far towards preventing his becoming involved in difficulties in the course of his operative work. The descriptions of the operations themselves and of the technique are very good, and the whole forms a very complete guide to the subject.

Dr. Liepmann is to be congratulated upon the production of a book of much originality, and one which cannot fail to obtain a wide circle of readers both in Germany and in other countries.

Etiology of Beri-beri. By HENRY FRASER, M.D. Aberd., Director, Institute for Medical Research, and A. T. STANTON, M.D. Tor., Bacteriologist, Institute for Medical Research, Federated Malay States. Singapore: Kelly and Walsh, Limited. 1911. Pp. 89. Price 7*s.*

THIS work contains the results of an inquiry begun under instructions from the Government of the Federated Malay States. Probably there is no disease that has been the subject of more varied hypotheses concerning its intimate nature; but the authors of this valuable treatise have, as can be seen by a study of the book, contributed, it would appear, the key to its elucidation.

The Malay peninsula has long been known as an endemic focus of the malady, and the recorded sickness and mortality during the past several decades show what great economic losses have resulted from its ravages. The researches carried out in 1907 and 1908 that form the basis of the present book were originally published by the authors in THE LANCET of Feb. 13th, 1909, and were editorially commented on in our following issue, and in those of May 8th, August 7th, and Oct. 9th of the same year. The authors found that as the result of observations on 300 labourers, who were divided into two parties of equal number, and were housed some miles apart, those who were given white rice were seized with beri-beri, whilst those who lived on parboiled rice were free from it. They also found that place *per se* or considered as a nidus of infection had no influence on its development. Again, substitution of parboiled rice for white rice among parties of men attacked with beri-beri was followed by the cessation of the outbreak. The existing status of the subject was reviewed in a leading article in THE LANCET of March 12th, 1910.

Next follows a detailed account of their feeding experiments upon fowls with rice, the outline of which also was published by the authors in THE LANCET of Dec. 17th, 1910, in a further communication on the Etiology of Beri-beri. These experiments showed that fowls fed on white polished rice developed a form of polyneuritis analogous to beri-beri in its clinical manifestation and pathological effects, whilst those which were fed on unpolished rice remained healthy. A period of three to four weeks' feeding on white rice was found constantly to cause the development of the polyneuritis. It also appeared that the harmfulness of a rice diet varied directly as the extent to which the rice had been milled; so the authors tested their rice hypothesis still further by adding to a white polished rice, which when given alone was shown to be harmful, a quantity of polishings equal in amount to that which had been milled away, with the result that the fowls remained healthy. They also showed that no poison is developed in the white rice, as it is equally harmful whether freshly prepared or whether stored for months. The subject of the phosphorus content of rice as an indicator of the extent to which rice has been polished is next considered. It was found that Siam polished rice yielded 0·26 per cent., Rangoon polished rice 0·328 per cent., and Malay 0·38 per cent. of phosphorus pentoxide, the incidence of beri-beri

being less the greater the proportion of the latter. Parboiled rice, however, yielded 0·415 per cent. and unpolished rice 0·54 per cent. of phosphorus pentoxide, without any appearance of the disease. As the result of these long-continued and thorough researches, the authors conclude that rice is rendered harmful by the milling and polishing process to which it is subjected in the preparation of white polished rice, as the process removes some substance of high physiological importance in the metabolism. Accordingly, as measures for the prevention of the disease, they recommend the use of unpolished or under-milled rice by the classes of the community in which the disease occurs.

The authors have contributed a most valuable addition to our knowledge of beri-beri; they have made it certain that whilst polished rice will cause beri-beri, unpolished rice will not have this effect. The work contained in this volume will be a monument to their labours in a tropical country.

A Systematic Handbook of Volumetric Analysis. By FRANCIS SUTTON, F.I.C., F.C.S. Tenth edition, revised throughout, with numerous additions by W. LINCOLNE SUTTON, F.I.C., and ALFRED E. JOHNSON, B.Sc. Lond., F.I.C., A.R.C.Sc.I. London: J. and A. Churchill. 1911. Pp. 621. Price 21*s.* net.

"SUTTON," as it is familiarly called by the analytical chemist, is a remarkable book. It stands quite alone in English scientific literature as the one authoritative work on volumetric analysis which is consulted by everyone—the physician, the medical officer, the analytical chemist, the public analyst, the works chemist, the pharmacist, and so forth. It was first produced by Mr. Francis Sutton of Norwich (who is now in his eighty-first year) in 1863, new editions succeeding in 1871, 1876, 1882, 1886, 1890, 1896, 1900, and 1904. The present edition (the tenth) has been prepared jointly by Mr. W. Lincolne Sutton, the author's son, and Mr. Alfred E. Johnson, both of whom can claim an intimate acquaintance with analytical methods and procedure. It is no easy task to bring a work of this sort into line with modern developments, as there are workers in the field in all parts of the world, and it is an onerous undertaking to collect the valuable additions which are made from day to day to the elaborate literature of analytical procedure. Nevertheless, the task has been very well done, and "Sutton" once again is an indispensable source of reference on volumetric analysis, and a work of commercial as well as of scientific importance. It contains sections, for example, on the assay of aniline, soaps, tannin, phosphates, metals, coal-gas, and numerous other products of technical importance, besides chapters on the more recent methods of analysis of urine, water, air, and so forth. References are found in the text to literature of as recent date as 1910, an instance of which occurs in the paragraph on the direct titration of iron by titanous chloride, a new reduction method available for volumetric analyses due to Messrs. Knecht and Hibbert. It may be noted also that portions of the section on sugars have been rewritten, and a well-known authority on the subject (Mr. A. Ling) has contributed an account of his most recent methods of procedure in the use of Fehling's solution. The article on acetone has also been rewritten and recent methods for the analysis of fats have been added. Liebig's method for the determination of urea has become now a mere historic method, which has had to give place to simpler and more accurate technique. In view of the large amount of analytical work that of recent years has been devoted to questions of sewage disposal and water-supply, the sections under these heads have been revised and re-arranged. We notice, however, that the old table giving typical analyses of water and sewage is retained. This might with advantage have been brought up to date, the analyses having been made during a period ranging from 1869 to 1889. Most of the analyses recorded bear the date of 1872 or 1873. This is the only example we have found of an omission to supply figures derived from recent analyses, but it is an important one.

The book is one which a very wide range of scientific workers must keep by them.

Bismuth Paste in Chronic Suppurations, its Diagnostic Importance and Therapeutic Value. By EMIL G. BECK, M.D., Surgeon to the North Chicago Hospital. With an introduction by CARL BECK, M.D., and a chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear by JOSEPH C. BECK, M.D. With 81 engravings, 9 diagrammatic illustrations, and a coloured plate. London: George Keener and Company. 1910. Pp. 237. Price 10*s.* 6*d.* net.

THE value of bismuth paste in the treatment of chronic suppurating sinuses was discovered accidentally. It was desired to have a skiagram of a sinus, and for this purpose it was filled with a liquefied paste composed of bismuth subnitrate and vaseline. The skiagram obtained showed clearly the ramifications of the sinus, but to the surprise of Dr. Carl Beck and his brother, the sinus ceased to suppurate and has not suppurated since. From this case arose the practice of employing bismuth paste, and the results in certain cases have been very surprising, but necessarily the treatment often fails. Still, its successes have been so numerous that it deserves to be more widely employed. For diagnostic purposes, also, bismuth paste is of great value, for the course and extent of sinuses may by its use and by X rays be recognised to an extent impossible by any other means. Dr. Emil Beck has done well to publish this book so that the method may be more widely known. The method has also been employed in chronic suppuration of the sinuses communicating with the nose, and also after a mastoid operation. It has also been used with some success for pyorrhœa alveolaris. It is possible that its advocates are a little too enthusiastic, but that it is of value can hardly be doubted.

A Manual of Physical Diagnosis. By BREFNEY ROLPH O'REILLY, M.D., C.M., F.T.M.C. Toronto, M.R.C.S. Eng., L.R.C.P. Lond., Demonstrator in Clinical Medicine and in Pathology, University of Toronto; Assistant Physician to St. Michael's Hospital, Toronto; Physician to Toronto Hospital for Incurables. With 6 plates and 49 other illustrations. London: J. and A. Churchill. 1911. Pp. 369. Price 8*s.* 6*d.* net.

THE subject of physical diagnosis, or the correct observation and interpretation of physical signs, is one of vital importance to the student in the study of practical medicine, since the acquisition of correct methods of examination of medical cases is an essential to scientific diagnosis. Dr. O'Reilly supplies in the book before us a useful epitome of the various methods of physical examination, with simple and careful descriptions of the individual signs and of their significance. After some general directions in regard to the interrogation of the patient, so as to obtain a satisfactory clinical history, the rôle of inspection is discussed at considerable length. Various characteristic gaits and facies are described, and then the information afforded by inspection in regard to special systems and organs is categorically dealt with. Some useful details of the topographical relations of the various important viscera are given in a special chapter. The systematic examination of the respiratory, circulatory, digestive, genito-urinary, and neuro-muscular organs is then discussed, all the ordinary methods being clearly

described without unnecessary technicalities. Where instrumental methods afford useful information they are referred to, together with descriptions of tracings and their interpretation. An appendix is devoted to the simpler laboratory methods used in the investigation of urine, blood, sputum, gastric contents, fæces, and serous fluids. A few coloured plates are given, showing the characters of urinary deposits, blood corpuscles, and bacteria.

This book is carefully written and well produced; it should form a useful manual for the student during his work in the wards and out-patient departments, since it is of convenient size, easy of reference, and while avoiding unnecessary detail gives sufficient information to be of real value.

Handbuch der Vergleichenden Physiologie. (*Handbook of Comparative Physiology.*) Herausgegeben von HANS WINTERSTEIN. Vierzehnte Lieferung. Band IV., Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung. Erste Hälfte. Jena: Gustav Fischer. 1911. Pp. 161–320. Price M.5.

Dr. Baglioni in this "Heft" continues his exposition of the physiology of the nervous system of echinoderms, and we are particularly glad to see that he does full justice to the excellent work of the late Professor Preyer on this subject, although, of course, like Dr. Baglioni, we can hardly endorse all the views of the former versatile and talented professor of physiology in Jena. His work led up to that of Romanes and others some years ago, and is continued, though from a different aspect, by that of von Uexküll, as well as by American observers. There is apparently no reference to the recent work of Jennings on Starfish, as published in the Carnegie publications. "Autotomy" is dealt with as it occurs amongst both Starfish and Crustacea, and a wonderfully interesting subject it is. This chapter can be heartily commended to the attention of marine biologists.

Over 60 pages are given to the Mollusca, but only a very short account to the Lamellibranchs; the Gastropods fare better, first the marine forms and then the pulmonate or land forms; the latter especially have been extensively studied, but still much remains to be done. To the real aristocracy amongst the Molluscs—the Cephalopods—as befits their eminent position and their remarkable physiological activities—much attention has been given, and the results are chronicled in 60 pages of interesting matter. The physiology of the chromatophores alone is a chapter of the greatest interest, both to the physiologist and to the naturalist. There is far more in the remarkable colour changes than meets the eye. A good comprehensive summary of colour changes in marine invertebrates has yet to be written. Few things are more surprising than the rapidity with which certain of these "quick changes" in colour are effected under nervous influences proceeding from the central nervous system.

The Arthropoda have also been pretty fully investigated. The "reflexes" in the crustacea have been the subject of many investigations. Not the least interesting is the phenomenon of "hypnosis," as manifested by a cray-fish standing on its head; this was described by Czermak many years ago. A full account is given, after Doglein, of the attitudes and reflex activities of the decapod Leander and the conditions which influence and modify its reflex activities. The devices adopted to ensure what is called protective resemblance constitute a wonderfully interesting chapter in the life-history of certain crustacea. Nor are the results of the researches of Pouchet, Keeble, and Gamble on cutaneous colour changes less interesting. Fredericq's researches on self-amputation of limbs—autotomy—are fully set forth, and so are Bethe's results of his elaborate researches on Carcinus mænas, to which several pages are devoted.

Carlson's investigations on the rate of propagation of a nervous impulse in Myriapods are described, and then the author proceeds to deal with the Insecta, obviously a large chapter, of which only the beginning is included in this "Heft." The production of light by certain nocturnal insects, although referred to in an earlier Heft, is again dealt with from the point of view of its relation to the nervous system.

This compilation of Dr. Baglioni on the nervous system promises to be one of great value both to the physiologist and the zoologist.

Kompendium der Topischen Gehirn- und Rückenmarksdiagnostik. By Dr. ROBERT BING, Privat-docent for Neurology in the University of Basle. Second edition, enlarged and improved. Berlin and Vienna: Urban and Schwarzenberg. 1911. Pp. 208. Price, paper, 6 marks; bound, 7.50 marks.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord: A Concise Introduction to the Principles of Clinical Localisation in Diseases of the Central Nervous System. By ROBERT BING, Privat-docent for Neurology in the University of Basle. Translated by F. S. ARNOLD, B.A., M.B., B Ch. Oxon. With 70 illustrations. London: Rebman, Limited. 1911. Pp. 215. Price 10*s.* 6*d.* net.

NOT long ago we reviewed the first edition of this compendium of anatomical and clinical diagnosis, and welcomed it as likely to prove most useful to students and others who desire to familiarise themselves in detail with the clinical anatomy of the nervous system. A second edition has speedily been called for, and the author has taken the opportunity of augmenting that section of the book which deals with cerebral anatomy—a division that, as we remarked at the time, deserved handling on a rather more adequate scale. We are pleased to find that such matters as localisation in the motor cortex, tumours of the ponto-cerebellar angle, aphasia, apraxia, and the pituitary and the pineal glands, are treated in greater detail, and we can cordially recommend Dr. Bing's compendium to student and practitioner alike, both for its excellent diagrams and its readable and accurate text.

The translation of Dr. Bing's Compendium into English also deserves commendation. It is essentially a short practical *vade mecum* of a didactic character, intended to aid the physician or surgeon called upon to localise a pathological process affecting the central nervous system. As we remarked in reviewing the first German edition, one of its most satisfactory features is that the details of clinical anatomy are given with greater completeness than in most text-books, but the addition of unusually clear and simple diagrams prevents these details becoming unwieldy and confusing. With a good index, well printed, and well illustrated Dr. Bing's Compendium in its German or its English form ought to be one of the books to work from in every medical practitioner's library.

LIBRARY TABLE.

Tuberculosis as a Disease of the Masses and How to Combat it. By S. ADOLPHUS KNOPF, M.D. Seventh American edition. New York: Published by "The Survey." 1911. Pp. 124. Price 25 cents.—In this small work Dr. Knopf gives his views as to the measures which should be adopted in an endeavour to combat tuberculosis, mainly dealing with the pulmonary variety. He writes in a popular manner, and gives useful directions as to the mode of life which individuals suffering from the disease should follow. He also indicates the early symptoms of tuberculosis of the lungs. With most of Dr. Knopf's remarks we are in agreement, but we cannot altogether support him in the free use which he makes of the word "cure." For instance, he says: "Of all chronic diseases tuberculosis is the most curable, and of late years

the most frequently cured." In formulating this statement he makes no distinction between the pulmonary form and the other varieties of tuberculosis. With regard to the former, the term "arrest" would often be more suitable, with the addition that in a certain number of cases the arrest proves permanent. We cordially support him, however, in the views which he expresses as to the prophylactic means which should be adopted to stay the spread of the disease. Briefly stated these are: educate the masses in right living and the prevention of tuberculosis; treat the "curable" cases in sanatoriums or at home; take care of the advanced cases in special hospitals; provide "preventoria" for predisposed adults and open-air schools for children; improve the housing of the masses, particularly the sleeping and working quarters; suppress child labour and restrict woman labour; combat alcoholism and other social diseases by sane and humane laws and wise preventive and curative measures. We agree that it cannot be too deeply impressed upon the lay mind that tuberculosis as a disease of the masses has a large social aspect, and that without improving the social conditions of the people tuberculosis will never be eradicated.

Mental Mechanisms. (*Nervous and Mental Disease Monograph Series*, No. 8.) By WILLIAM A. WHITE, M.D. New York: The Journal of Nervous and Mental Disease Publishing Company. 1911. Pp. 151. Price $2.—This book consists of a series of papers dealing with certain psychological and psychiatrical subjects, and is intended to explain and emphasise those fundamentals which appear to the author essential to an understanding of present-day psychiatry. The papers, for the most part previously published independently, tend somewhat to overlap, while their style is diffuse, but as a presentation of a selection of our knowledge on such subjects as consciousness in various aspects and psycho-analysis they are not inadequate.

Physiology of the Central Nervous System and the Special Senses. By N. J. VAZIFDAR, L.M. & S. Bombay: James and Sons. 1911. Pp. 107. Price 2 rupees (or 2*s.* 8*d.*), post free.—This little compilation from well-known English text-books was written for students of the author's class preparing for the intermediate M.B. examination of the Bombay University. It is merely a series of elementary notes with plenty of misprints—e.g., filum terminal, lumber, aqueduct of Sylvias, Gower's tract, Turck, locomor ataxy, Monako's bundle, Grandy, mesentry, papillœ, to mention only a few. With thorough revision it might possibly prove useful for the purpose for which it was intended.

Instructions in the Use of the Catheter, especially Written for Male Nurses. By a Surgeon. London: George Pulman and Sons, Limited. 1911. Pp. 32. Price 1*s.*—That only qualified men should pass catheters on living patients is undoubtedly, as the author says, a counsel of perfection. But inasmuch as patients sometimes require a catheter to be passed four or six times in the 24 hours, it is clearly desirable that the male nurse should be trained to carry out this operation under the directions of the medical attendant. To assist the nurse in performing this duty properly these instructions have been written. They are clear and detailed enough to be grasped, and adequate stress is laid on the methods of preserving surgical cleanliness. The advice given by the writer at the end, if followed, will minimise the danger of over-zealousness.

Album of Photographs issued by the South Indian Branch of the British Medical Association. London: John Bale, Sons, and Danielsson, Limited. 1911. Pp. 55. Price 10*s.* 6*d.* net.—This is a praiseworthy endeavour to collect and render available some of the large amount of material of pathological value that lies buried in the South of India. In the Madras Presidency there is one district European medical officer to about 1,500,000 inhabitants, and even the general hospital of the Presidency has not a whole-time pathologist on its staff. To Captain A. C. Ingram, I.M.S., belongs the credit of the inception of this enterprise, for he wrote to all the medical officers of the Presidency for a loan of photographs of surgical and pathological curiosities, and the South Indian Branch of the British Medical Association undertook the expense of publishing them. One point illustrated by the photographs is the enormous size to which natives in India allow tumours to grow before having recourse to a European surgeon. Among the things pictured are fœtal monstrosities, including cyclops, achondroplasia, leontiasis ossea, myositis ossificans, horny growth from the cheek, a pendulous fibro-lipoma of the neck, multiple fibroma molluscum, mycetoma, elephantiasis of the scrotum, legs, and prepuce, and Mikulicz's disease.

Complete Text-book of Physical Exercises, with 240 Illustrations and Music (specially adapted for the Use of Public Elementary Schools). By ISABEL MURRAY. London: Simpkin, Marshall, and Co. 1911. Pp. 191. Price 3*s.* 6*d.* net.—Physical exercise plays an important part in any well-considered plan of education, and has formed the subject of a recent memorandum issued by the Board of Education. With the object of supplementing the exercises recommended by the Board the author of the "Complete Text-book" has drawn up a number of well-thought-out exercises, which should prove useful to teachers in their efforts to make physical exercises interesting to their pupils. The exercises are graduated for senior and junior classes, and include simple dance steps, maypole exercises, figure marching, and free-arm movements on the march. The movements described in the text are illustrated by diagrams and reproductions from photographs; a selection of popular airs suitable for the exercises adds to the practical value of the book. In all forms of physical exercise it is essential that the interest of the pupil should be maintained, and the author would seem to understand the art of making "drill day" both attractive and instructive.

JOURNALS AND MAGAZINES.

Biometrika. Vol. VIII. Parts I. and II. July, 1911. Cambridge: The University Press. Pp. 256.—The first and second parts of the eighth volume of *Biometrika* contain several papers of medical interest. First, a subject of some importance is discussed by Dr. D. Macdonald—namely, The Pigmentation of the Hair and Eyes of Children Suffering from the Acute Fevers: Its Effect on Susceptibility, Recuperative Power, and Race Selection. The material on which the work is based was obtained by noting the colour of the hair and eyes of all children admitted to the Glasgow Corporation Fever Hospitals during certain definite periods who were suffering from scarlet fever, diphtheria, measles, or whooping-cough. The method employed is to compare the percentage of each particular hair and eye colour found among each of these four classes of fever patients with the corresponding percentage found in the general population of children in the area from which they were drawn, as given by Tocher (Pigmentation Survey of School Children in Scotland, *Biometrika*, Vol. VI.). Broad categories of hair and eye colour are employed: thus hair is classed as black, dark, medium, fair, and red, and eyes as dark, medium, light, and blue. To take an example: 59·4 per cent. of the scarlet fever patients were recorded as having medium-coloured hair, whereas among the control population only 45·2 per cent. are thus described; thus it appears that medium-haired children are especially susceptible to scarlet fever. On the other hand, only 15·5 per cent. of the scarlet fever patients were "dark-haired," instead of 27·2 per cent. found

in the control, so that it may be argued that dark-haired children are less likely to take the disease. Fair-haired and red-haired children occur among the fever patients in about the normal proportion. Results of a corresponding nature are seen when eye colour is considered instead of hair colour, and are approximately the same for diphtheria, measles, and whooping-cough. The author concludes that "the medium-haired child is more liable to become infected than the red-haired, and much more so than the dark-haired and jet black-haired child; the fair-haired child occupies an intermediate position as regards infection." "The medium-eyed child is more liable to become infected than the dark-eyed, and much more so than the blue-eyed child. The light-eyed child occupies an intermediate position as regards infection. The light-eyed child appears to be more susceptible to diphtheria and whooping-cough than to scarlet fever and measles." With regard to these conclusions, the editor of *Biometrika* appends a note of warning—namely, that the hair and eye colour of the fever population was estimated by an observer different from that of the general population. Thus the excess in the medium class of both hair and eye colour in the former may be due to the personal equation. This possible source of error is not present in that part of the work which deals with the relation between recuperative power and the pigmentation of hair and eyes, since here no comparison with the general population need be made. With two exceptions that do not invalidate the conclusion, it is found that for these four diseases the percentage of severe cases and the percentage of deaths are smaller among dark-haired children with dark eyes than among medium-haired children with medium eyes, and that they are smaller among the latter than among fair-haired children with light eyes. Red hair occupies an intermediate position with regard to recuperative power between medium and fair. G. D. Maynard contributes a note on the age distribution of deaths from diabetes mellitus. His statistical analysis shows that deaths from this disease fall into three classes corresponding with growth, reproduction, and old age. The age distribution of deaths in each can be described by simple frequency curves. The mean age of death in the first-named class is (for males in England and Wales) 9·5 years, in the second 30·84 years, and in the last 69·37 years. By summing the three simple curves a complex curve is arrived at which represents fairly accurately the general death-rate from diabetes at different ages. Professor Karl Pearson, in a paper entitled "The Opsonic Index—'Mathematical Error and Functional Error,'" controverts two views expressed by Sir Almroth Wright: firstly, that "the enormous working errors in opsonic estimation" are largely functional errors due to a faulty application of the method by imperfectly trained observers, and only to a small extent errors of method; secondly, that functional errors cannot be evaluated by a mathematician. Professor Karl Pearson has set himself as a mathematician to evaluate the "functional error," and in so far as his material goes he finds it as great in Sir Almroth Wright's laboratory as elsewhere; but wherever found he considers it small compared to errors arising from such other sources as "random sampling." Dr. Frank Rock's short note on the Tooth-brush and Decayed Teeth may perhaps be considered of medical interest. It is based on the medical examination of 556 boys and 507 girls, all over 13 years of age, in schools at Edmonton. He finds that there is practically no correlation between the number of decayed teeth in the mouth and the daily or occasional use of the tooth-brush or its total neglect. The tooth-brush may improve the appearance of the teeth, but it does not appear to arrest decay. Possibly the tooth-pick may be of greater value. Of the remaining papers three deal with anthropometry—namely, the late Dr. Crewdson Benington's long and important work on Cranial Type Contours, J. I. Craig's Anthropometry of Modern Egyptians, and E. Schuster's First Results from the Oxford Anthropometric Laboratory. General biology is represented in a Third Coöperative Study of Vespa Vulgaris, by E. Y. Thomson, Julia Bell, M.A., and Karl Pearson, F.R.S.; on the Correlation between Somatic Characters and Fertility, by J. A. Harris, Ph.D.; the Inheritance of Fertility, by R. E. Lloyd, D.Sc.; Karl Pearson's remarks on Professor Lloyd's note, and his Further Remarks on the Law of Ancestral Heredity. There is one purely physiological paper on Pulse and Breathing Rates and their Relation to Stature, by Julia Bell, M.A. Two may be classed possibly under the heading pædagogy, the Teacher's Estimation of the General Intelligence of School Children, by H. Waite, M.A., and on the Significance of Teacher's Appreciation of General Intelligence, by W. H. Gilby, B.Sc., assisted by Karl Pearson, F.R.S. The remainder of the volume is concerned with statistical technique.

Klinik für Psychische und Nervöse Krankheiten. Herausgegeben von ROBERT SOMMER, Professor an der Universität Giessen. Band V., Heft 3, and Band VI., Heft 2. Halle: Carl Marhold. 1911. Price 3 marks each.—Band V., Heft 3, contains several papers of interest. 1. Dr. Steinbrecher's paper on the differential diagnosis of internal hydrocephalus concerns a case in which the symptoms of an infratentorial tumour were present, but the post-mortem examination revealed simply internal hydrocephalus. A number of similar cases are already on record. 2. Dr. Berliner describes a case of dementia paranoides apparently the result of a severe accident, and discusses the relation of the two. 3. Dr. Klett publishes a paper on the graphic representation of certain movements of expression, and describes in detail his method for registering the movements of the occipito-frontalis muscle under varying conditions. In Band VI., Heft 2:—1. Dr. Pfahl continues his communication on the investigation of voluntary movements by graphic methods. 2. Dr. Helmut Müller deals with a long series of personal experiments on the teaching of mentally defective individuals. He comes to the conclusion that in memory experiments with defective patients better results are obtained if the matter to be taught, say a line of poetry, is taught one half at a time (even though the words do not make sense), whereas in normal individuals the opposite holds good—viz., that the line should be learned from the outset in its entirety. 3. Dr. Margulies publishes a long paper on hystero-epilepsy, *apropos* of a case in which the method of psycho-analysis is applied to determine and to separate the hysterical from the epileptic elements in the clinical phenomena.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Mr. J. B. H. Davson, senior medical officer, Sierra Leone, has retired on a pension. Mr. J. P. Fagan, deputy principal medical officer, Northern Nigeria, has been promoted principal medical officer, Northern Nigeria; Dr. F. G. Hopkins, deputy principal medical officer, Southern Nigeria, has been promoted principal medical officer, Gold Coast; Mr. F. Manning, senior medical officer, Northern Nigeria, has been promoted deputy principal medical officer, Northern Nigeria; and Mr. E H. Tweedy, provincial medical officer, Northern Territories of the Gold Coast, has been promoted deputy principal medical officer, Gold Coast. Mr. R. H. Brierley, formerly a medical officer in Southern Nigeria, has been reappointed to the staff. The following gentlemen have been selected for appointment to the staff: Dr. L. W. Davies (Northern Nigeria) and Dr. J. B. Alexander (Gold Coast).—*Other Colonies and Protectorates:* Mr. W. H. Bomford has been selected for appointment as a Medical Officer in Fiji. Mr. W. Parsons has been selected for appointment as Medical Officer in charge of the Quarantine Station at Singapore, and Mr. E. Sutcliffe has been selected for appointment as a Supernumerary Medical Officer in the Leeward Islands.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 16, 1911.

Condensed Milks in the Infant Dietary.

THE investigations on public food questions which are undertaken by the Local Government Board from time to time reflect the highest credit upon that department. Already a valuable series of reports has been issued dealing with subjects of considerable public urgency. There have thus been published 14 reports, and a fifteenth report has just reached us in which the very important question of condensed milks in regard to their use as infants' foods is discussed. Dr. F. J. H. COUTTS is the author of the latest report, and it is obvious from the careful and painstaking inquiries that he has made that the present state of things in regard to the sale of condensed milk is most unsatisfactory and in many instances seriously opposed to the interests of public health. He has definitely ascertained that machine-skimmed condensed milk is used on a considerable scale for feeding infants, and he gives evidence in favour of the conclusion that this use is increasing. In spite of an honest label declaring the milk to be "machine skimmed" the mother buys the preparation; her poverty tempts her, and her ignorance may lead her to believe that she is taking the best course; and on all sides, therefore, infants are reared on a starvation diet. For to many poor women the words "machine skimmed" have a magic meaning, the milk has been treated by machinery not touched by hand, and is, of course, on that account specially pure. Others imagine the milk in the tin with these words upon it to be the thick rich milk from the top. Far, therefore, from deterring the use of such milk for infants, the words of the honest label actually appeal to the mother. It is well to remember in this connexion, too, that machine-skimmed milk is more profitable for the retailer to sell than the variety known as full-cream milk The temptation to sell an article yielding 15 to 20 per cent. profit instead of 10 per cent. is hard to resist, but the acute sufferer over the advantageous deal is the helpless baby.

Dr. COUTTS'S most valuable recommendation, in our view, is that which refers to the prevention of the use of condensed skim milk for infant feeding. This is what is demanded in the name of humanity. The words "skimmed milk" or "machine-skimmed milk," which some firms put on the labels of their machine-skimmed milk, should not be in small type on an obscure part of the label or associated with words advising the use of certain full-cream blends produced by the same maker. "All these things," rightly observes Dr. COUTTS, "tend to confuse the purchaser and to lead to failure to recognise the real meaning of the warning." We agree with his view that some parents fail to understand how unsuitable these milks deprived of fat are for feeding babies, but a clear declaration could not fail to have some effect in educating them to know that all condensed milks are not alike in composition. Such a declaration would materially assist the efforts of all who are working to decrease our miserable infant mortality—medical men, nurses, and health-visitors alike—by impressing upon mothers the danger of such foods. If a definite declaration on the tin itself of the unsuitability of the food for infants could be pointed to a great difficulty would be surmounted. We suggest, however, that the words "unfit for infants" which Dr. COUTTS recommends for the labels of machine skimmed milks would create an unwarranted prejudice against the sale of the food for other and perfectly legitimate purposes. Machine-skimmed milk provides an abundance of valuable proteins, carbohydrates, and phosphates, and is of use, therefore, in the making of tea, coffee, cocoa, milk puddings, and custards. The words "unfit for infants" are calculated to create an impression that if the food is "unfit for infants" there must be something wrong about it for general purposes. We therefore think it would be better and more reasonable to demand that machine-skimmed milk should be labelled more or less as follows: "Not a substitute for mother's milk." Upon the question whether whole condensed milk, assuming that the purchaser has no difficulty in obtaining it, is suitable for the infant's needs, there is considerable divergence of medical opinion. Dr. COUTTS is inclined to think that there has been some tendency to exaggerate the evil effects of feeding on full-cream condensed milk. It is probable that a considerable proportion of children may thrive tolerably well when fed even over prolonged periods with a high quality of condensed milk, if the directions as to its dilution are sound and followed; but the coincidence of epidemic diarrhœa and condensed milk feeding, whether skimmed or whole, is a serious factor in the situation. In the case of skimmed milk every disorder that is the natural sequence of malnutrition may be anticipated, and the prolonged use of full-cream condensed milk is a very doubtful recommendation in the face of medical evidence upon the results of such a diet. In the returns made from time to time by medical officers which indicate the serious liability to epidemic diarrhœa in infants fed on condensed milk no differentiation is made between full-cream and machine-skimmed milk, and it may possibly be the case, as Dr. COUTTS points out, that in some places the evils attributed to condensed milk may be partly due to the machine-skimmed variety. Again, the question whether full-cream condensed milk has any advantages over the same preparation condensed and preserved with the addition of sugar must not be left out of the calculation.

Many authorities ascribe the occurrence of rickets to overfeeding brought about by an excess of carbohydrate which unduly taxes the infantile metabolism — to, in fact, a want of balance, apart from a possible deficiency in fat, in the proportions of the various constituents of the food. "I have never seen," says Dr. ERIC PRITCHARD, "an infant uninterruptedly fed for six months on condensed milk—which is, of course, milk which has been

vigorously sterilised—who did not present unmistakeable symptoms of rickets." Dr. NEWSHOLME, the principal medical officer of the Local Government Board, holds that the importance of rickets as a cause of other diseases as well as deformities in childhood and in after life is insufficiently understood, and there is surely sufficient evidence to warrant the prompt establishment of new and more effective machinery that is calculated to exercise control over all articles supplied as food for infants, including condensed milk in its various forms. The State should step in wherever possible to prevent the waste of infant life which is due to ignorance and poverty, and, in the case of condensed milk, to render more difficult the commercial game of making things appear to be what they are not.

Cæsarean Section in Possibly Septic Cases.

THE operation of Cæsarean section, with its modifications, has attracted a good deal of attention of late, and in a manner which is of particular interest to the general practitioner, who in the first instance may have to bear the grave responsibility of the course to be pursued. The introduction within the last few years of the method of so-called extra-peritoneal Cæsarean section has given rise to much discussion, not only as to the merits of this modification of the operation, but also as to the conditions under which it should be performed. One of the most difficult problems which still remains to be solved is, What is the correct treatment to adopt in the case of women with contracted pelves who are in labour, and possibly or probably already infected? In some, at any rate, of these cases delivery through the natural passages may not only be very dangerous for the mother but must inevitably entail the sacrifice of the child's life. The answer to the question demands the consideration of the method of delivery which is best calculated to save both the life of the mother and of her child, and the crucial point is to determine whether any patient in these circumstances is infected or no. When the operation of extra-peritoneal section was first introduced it seemed to hold out the possibility of dealing safely even with definitely septic cases. The results obtained were, however, discouraging, and the general opinion at the present time is that this operation is not suitable for such cases. SELLHEIM has attempted to overcome the difficulty by his ingenious method of forming a permanent utero-abdominal fistula for the purpose of providing free drainage, and so avoiding the danger of infection from the septic interior of the uterus.

The whole question has been discussed on several occasions recently, and it formed one of the subjects for discussion at the Fifth International Congress of Obstetrics and Gynæcology held at St. Petersburg a year ago. On that occasion Dr. AMAND ROUTH presented a report of all the Cæsarean sections performed in this country by over 100 obstetricians and gynæcologists who were living on June 1st, 1910. This report has now been published.[1] The total number of the cases collated amounted to 1282, and the document is a model of what such a report should be and will long remain a mine of information on the subject of which it treats. At a meeting of the Obstetrical Section of the Royal Society of Medicine of London held in March of this year the question of Cæsarean section and its alternatives in women with contracted pelves who had been long in labour and exposed to septic infection was considered, the discussion being opened by Dr. ROUTH. A large number of obstetricians and gynæcologists from all parts of the kingdom took part in the discussion, and all the points involved were very fully considered. Dr. ROUTH'S figures show very clearly the enormous difference which exists in the death-rate from Cæsarean section in clean, non-infected cases, as compared with that in suspect or infected cases; the death-rate in the latter amounts to some 17·3 per cent., or to 34·3 per cent. in almost certainly infected cases, as compared with a death-rate of only 2·9 per cent. in the non-infected or clean cases. As Dr. ROUTH truly remarked, the ideal operation for infected cases would be one which is free from the fœtal mortality of craniotomy, from the maternal mortality of the classical Cæsarean section, from the morbidity of pelviotomy and extra-peritoneal Cæsarean section, and from the sterilisation which accompanies all forms of hysterectomy. The difficulty in coming to a conclusion upon the results obtained by various operators lies in the fact that it is almost impossible to say whether any given patient is infected or not. Further than this, in many cases the infection is purely a local one, and remains so; and in other cases the condition is one of commencing general sepsis, and the patient will probably die, whatever be the manner in which she is delivered.

It was suggested by Dr. ROUTH, in opening the discussion, that the assistance of the bacteriologist should be invoked, so that by means of swabs taken from the cervix and the interior of the uterus the presence or absence of septic organisms could be ascertained. It was pointed out at once, however, that there may be great difficulty in determining, at any rate with sufficient rapidity, whether a given organism is a virulent one or not, and, as is well known, many forms of apparently pathogenic organisms may be present in the genital tract of a parturient woman and yet she may present no signs of sepsis and pass through a perfectly normal puerperium. It must be concluded, at any rate at the present time, that the plan of taking a swab from the cervix or from the liquor amnii in such cases is not likely to prove of much clinical value. In the first place, the pathologist is not likely to be at hand just when he is wanted; and, in the second place, his verdict must often in our present state of knowledge be far from accurate and therefore not to be relied upon with certainty. It is very necessary to make a careful distinction between infection of the liquor amnii—a purely local condition and dangerous to the patient only if the peritoneal cavity become infected, and infection of the tissues of the uterus itself—a much more

[1] Cæsarean Section in Great Britain and Ireland. With Tables of 1282 cases of Cæsarean Section by over 100 Living Obstetricians and Gynæcologists in Great Britain and Ireland. Being a Report read at the Fifth International Congress of Obstetrics and Gynæcology held at St. Petersburg in September, 1910. By Amand Routh, M.D. Lond., F.R.C.P. Lond., Obstetric Physician to Charing Cross Hospital, London, and Consulting Physician to Samaritan Free Hospital for Women, London. London: Sherratt and Hughes. 1911. Pp. 233. Price 5s.

dangerous state of affairs, and one requiring more radical treatment if it is to be dealt with effectively. Here again, however, we are met with the same difficulty, When is the liquor amnii infected and how are we to determine this with certainty? Any conclusion upon this point must be mainly guesswork, and no reliance can be placed upon the presence or absence of an offensive odour. Some are in favour of a procedure carried out by Dr. DRUMMOND MAXWELL in one case, in which he irrigated the amniotic cavity and then performed Cæsarean section, but this method can have, we fear, but a very limited scope, and in the presence of really virulent organisms would prove of little value. In cases where the liquor amnii appears to be certainly infected, most reliance must be placed upon careful isolation of the peritoneal cavity, on eventration of the uterus, and on the application of the ordinary surgical principles which would be employed in dealing with any other septic abdominal condition requiring laparotomy. An interesting feature of the discussion at the Obstetrical Section of the Royal Society of Medicine was the very small amount of support accorded to the operations of pubiotomy and extra-peritoneal Cæsarean section. It is true that few of the speakers seemed to have much experience of either operation, and the arguments brought against them were not founded upon actual occurrences. Regarded from the critical standpoint it would appear, however, that neither of these two operations is suitable for really septic cases, and indeed that appears to be the view of most authorities at the present time. That they may both be attended with very good results in clean cases is certain, but their exact place among obstetrical operations still remains to be defined with precision in the future.

No one would be found to recommend craniotomy on the living child, but cases will inevitably occur from time to time when the safest procedure from the mother's point of view will entail the sacrifice of her child, and in this country the opinion in such cases has always been, and still is, that the life of the mother must be considered of greater value than that of the child. In certain cases and circumstances there is no procedure available which minimises the risk to the mother to so great a degree as craniotomy, and while these conditions remain so long will the operation be justifiable in selected cases. For doubtfully septic cases, when Cæsarean section is thought advisable, it should certainly be followed by removal of the uterus, which in all probability is infected. If the infection is still a local one the mother's life will generally be saved, while if it has already become generalised she may die, no matter what procedure is adopted. It is possible in the future, when we have more knowledge of the different varieties of pathogenic organisms and are able to recognise with certainty those which are virulent, that the bacteriologist may prove of help, but for the present the question of the presence of sepsis must remain largely a matter of dubiety, and the doubtful cases can only be treated safely if they are considered as septic even when they are only suspect. In such cases the peritoneum must be jealously guarded from infection, and the whole uterus had better be removed, if the operation can be undertaken in suitable surroundings. In unsuitable surroundings craniotomy must still be resorted to. We may hope in time to relegate the operation of craniotomy on the living child to its place among the obsolete barbarities of the past, to which it has been compared by some authorities, and all will rejoice when that day comes. In the meantime, however, facts must be dealt with, and in cases where the risk to the mother is minimised by the operation of craniotomy we must not hesitate to resort to this procedure. Such cases will certainly occur from time to time in general practice.

The Progress of Anæsthetics.

WE do not remember a meeting of the British Association in which so many problems of the highest scientific import were introduced under what may be called their popular aspects, and the manner in which this was done is a clear proof that the national education in science, so profoundly hoped for by medical men, is really now proceeding. Many of the papers in the different sections invite medical discussion, as might have been expected, now that the boundaries of scientific medicine are so indefinitely enlarged, but none, perhaps, concerns our readers, the practising medical profession, more closely than the third interim report of the committee appointed some time back by the British Association to investigate the problems of anæsthesia. The committee consists of Dr. A. D. WALLER (chairman), Sir FREDERIC HEWITT (secretary), Dr. J. BLUMFELD, Mr. J. A. GARDNER, and Dr. G. A. BUCKMASTER, and its report deals with the commonly accepted principles which control the administration of ether as a general anæsthetic by inhalation. This subject fell within the purview of one of the preceding reports and has occupied the members of the committee during the past year. An attempt was made, which proved successful, to obtain evidence as to whether a 10 per cent. vapour of ether, when given by inhalation, would be competent to ensure anæsthesia. It will be remembered that this strength of vapour in air given to the lower animals in the laboratory by a continuous method gave satisfactory results. In an appendix to the report the matter is carried further. Ether presented by an open method—i.e., dropped continuously upon an absorbent material and approximated to the face—was studied. The maximum strength of the vapour so produced in the ordinary course of the induction and maintenance of surgical anæsthesia was found in one observation to be 20 per cent. This maximum fell during the continuance of the administration as the result, we are told, of evaporation and cooling. In a second observation the percentage was found to be 14·6 after an interval of two minutes, and 11·6 after 24 minutes. A third observation gave a percentage of 9·2 after 16 minutes; while in a fourth case subsequently to a 12 minutes' inhalation the percentage strength of the ether was estimated to be 9·7. In this case an attempt was made to increase the percentage to above 12, but this was found to be impossible by the means adopted—viz., adding excess of ether. The points which this interesting research appears

to enforce are that the method of giving ether by an "open" system, while it induces adequate anæsthesia for human beings, yet automatically keeps the strength of the vapour within the limit adopted by the committee as being safe—10 per cent. The history of ether administration reveals curious oscillations of fashion. In its initial trials as an anæsthetic, besides the attempts made to supply a vapour by means of the crudest of inhalers, a quasi open plan was adopted, but proved unsatisfactory, owing to the fact that no attempt was made to attenuate the strength of the vapour supplied, with the result that distressing sensations of strangulation arose and dangers occurred incident to the wild struggles of the unfortunate patient. On the continent, where a modified open method is much in vogue, such as that adopted by Dr. DUMONT of Berne, enormous quantities of the anæsthetic are used, and the patients appear in many instances to be liable to post-anæsthetic dangers such as pulmonary or renal catarrh.

The plans so popular in England at the present time, which are based upon those introduced from the United States, are less open to adverse criticism. They avoid the deleterious addition of an impervious cover to the mask, and permit free through-breathing, thus ensuring evaporation and the automatic adjustment of the strength of the vapour inhaled. Again, in frequent cases the plan is adopted, the importance of which has been insisted upon by so many of the continental surgeons, of systematic dropping applied to the ether supply instead of the douching in bulk, which is at once wasteful and open to a charge of producing grave consequences. Sir FREDERIC HEWITT, in one of the appendices, deals with the subject of open ether, and his experience of it has led him to eulogise the method; indeed, he appears to regard it as superior to others involving the employment of closed inhalers such as those due to Clover, Ormsby, and the countless modifications of these types. The simplicity of the procedure commends itself to all who have acquired the technique, and those who extol it appear to believe that the incidence of danger to life during its use is not greater than is inherent to the performance of severe surgical operations upon patients in a condition of physical collapse. This point cannot be decided so far, nor must too much importance be attached to the distress which many patients experience as the result of the clinging and persistent odour which prolonged ether inhalation leaves behind it. It is perhaps premature as yet to accept the view enunciated that ether will as a result of the improved methods of its use wholly supersede chloroform in surgical anæsthesia. We may well suppose that many will take a more conservative line, and while advocating a wider adoption of ether in surgery will yet regard chloroform as possessing merits all its own which single out that anæsthetic as ideal in certain circumstances. The report and some of its appendices, indeed, deal with chloroform and reaffirm its comparative safety when employed by scientific and precise methods. The researches of SNOW, and later of PAUL BERT, initiated the dosimetric method of giving chloroform vapour, and established by experiment and clinical observation that there exists a limit of safety—a 2 per cent. vapour of chloroform in air. Their researches have been elaborated recently by Dr. A. D. WALLER, by the Special Chloroform Committee of the British Medical Association, whose report has been lately published, and by others. In the report before us we learn that the balance chloroform inhaler, the invention of Dr. WALLER, which supplies an exact dosage, has been adopted in the practice of St. George's Hospital, and experience with it has further shown the safety of a 2 per cent. vapour, while it has supplied a valuable means of teaching students the principles of dosimetry as applied to anæsthetics.

Mr. A. G. VERNON HARCOURT, the inventor of the well-known dosimetric chloroform inhaler which has been so widely used with good results, read a paper before the British Association during its recent meeting, and pointed out that the inhaler which he has perfected, while being simple and portable, fulfils its primary object—namely, to supply and control a chloroform and air mixture of definite percentage value. We do not deal in this place with the technical details of Mr. VERNON HARCOURT'S discourse, although it repays careful study. Whether or not we admit that the last word has been said upon the *quæstio vexata*, Is ether or is chloroform to be adopted to the exclusion of the other? and, again, whether the dosimetric methods eulogised in the present report are final or tentative, none will gainsay the fact that public opinion is being rapidly aroused to the importance of the questions which have been mooted. Anæsthetics to-day are needed so constantly and so imperatively that it is essential that the public should be safeguarded. It is of no avail to perfect methods unless the public are made aware that safety lies not in their individual ability "to take an anæsthetic well," but in the ability of the administrator to give it well. Nor can such a thing be possible in the case of all and sundry. By dint of careful teaching and opportunities of constant practice medical men acquire this power, and it is to the interest of the public both that the education of our medical students should be perfected in this regard, and that this procedure of surgery should be restricted to those who possess adequate and recognised surgical and medical qualifications, at least when the graver procedures of surgery are in question. Every thoughtful person will agree that all unqualified practice is an evil, especially to the public at large, but this evil becomes greatly accentuated when the unqualified practitioner employs such powerful drugs as fall within the armamentarium of the anæsthetist. Various attempts at legislation upon this subject have been made, and now a draft Bill has been lodged at the Home Office to the terms of which there seems a general consensus of professional and official agreement. We may well hope that not only the administration of anæsthetics, but other departments of the healing art will in the near future receive more protection, since the legislation required is aimed not at safeguarding the pockets of the medical profession but at protecting the public—all of them, and not only the poor and ignorant—from the perils of unqualified practice.

Annotations.

"Ne quid nimis."

THE ANOMALIES OF PLAGUE INCIDENCE IN INDIA.

SOME attention has already been drawn to the anomalies of the present incidence of plague in India. When the disease was imported into that country from China in 1896 it spread rapidly, being conveyed, as our readers are aware, from the port of Bombay by refugees and others into the neighbouring provinces and native states, ultimately extending over vast tracts of the empire. While the infection spread like wildfire in some provinces, in others it only smouldered, as it were, never assuming what might be regarded as epidemic proportions; while yet in other provinces plague, though introduced time after time, never seemed to gain a foothold, nothing more serious than a few sporadic cases being reported. The main brunt of the plague incidence in India has been borne by three provinces—namely, the Punjab, Bombay, and the United Provinces of Agra and Oudh, which together have a combined population of about 97 millions—that is, roughly speaking, about a third of the whole population of India (calculated on the Census of 1901). In the three provinces during the last 15½ years, from 1896 up to the middle of 1911, no fewer than 5,435,266 deaths from plague have been registered. This number, however, is probably below the actual reality as, for various reasons, deaths from plague are known to have been ascribed, intentionally or otherwise, by the natives to other causes. As compared with these figures it may be stated that during the same period throughout the whole of India, excluding the three above-named provinces, only 1,942,057 fatal plague cases were certified; so that of the total 7,377,323 deaths from plague recorded in India in the last 15½ years about five-sevenths occurred in the three provinces already mentioned, with about a third of the entire population of the country, the remaining two-sevenths occurring in the rest of India, with some 200 millions of inhabitants. On the other hand, although plague has been persistently present in the Presidency of Madras since 1897, less than 80,000 deaths from this cause have been reported, although the population involved is about 42 millions. If we contrast with this the mortality from plague in the Punjab during the same period, in a population of about half that of the Madras Presidency, we find that there were in it no fewer than 2,436,105 plague deaths. The city of Madras with over half a million inhabitants has had an almost complete freedom from plague since its introduction into India, and though the infection has been imported time after time there has been no spread of the disease in this city. When the case of Eastern Bengal and Assam comes to be considered the contrast is still more marked. This province was constituted in 1905, and has at the present time, according to the Census of 1911, a population of nearly 34 millions. Comparison with other provinces as to plague incidence is limited to a period of six and a half years—that is, from the beginning of 1905 to the middle of 1911. In that period in the new province only 146 plague deaths have been reported, as compared with 1,575,866 in the Punjab with about 10 millions less population; 1,266,186 in the United Provinces with about 13 millions more inhabitants than Eastern Bengal and Assam; and 334,639 plague deaths in the Bombay Presidency, the population of which is more than 10 millions less than that of the new provinces. In the Presidency of Madras, in the six and a half years under consideration, 25,780 plague deaths were recorded, its population being, as has been said, about 42 millions. The causes which have led to this unequal distribution of plague mortality in these provinces of India have so far remained undiscovered. Why, on the one hand, the Punjab should experience such an appalling mortality from plague; why, on the other hand, the Presidency of Madras, with twice the population, should escape with comparatively so small a record of fatal plague; and, above all, why Eastern Bengal and Assam should practically have complete freedom from this epidemic disease, though the infection has been repeatedly imported into it, are problems still unsolved. The investigations of the Indian Plague Advisory Committee, appointed jointly by the India Office, the Royal Society, and the Lister Institute in 1905, have demonstrated already that the spread of bubonic forms of plague, the prevalent type of the disease in India, is brought about through the agency of the rat flea. Rats and fleas, it would seem, are as common in Madras and in Eastern Bengal and Assam as they are in the Punjab or the United Provinces. So far as can be learned the conditions for the spread of plague are much the same in all of these provinces above named. In the circumstances we are glad to hear that the subject has engaged the attention of the Advisory Committee, whose expert representatives have already visited the Presidency of Madras and the Province of Eastern Bengal and Assam to collect information and to inquire, with the help of the respective Sanitary Commissioners and their staffs, into the local conditions which might be thought of as likely to affect the question of the apparent inability of plague infection to spread in one or another place. Perhaps it is justifiable to hope that the information collected in this way by the Advisory Committee may ultimately be found to serve as a basis for devising further measures for arresting the long-continued prevalence of plague in the Punjab and in the other heavily affected provinces, and may in this way lead to the prevention of much human suffering and to the saving of many lives.

ARTIFICIALLY COOLED HOSPITALS.

ONE of the most essential points to be attended to in the construction of a hospital in this climate is the installation of a suitable system of heating. It may be added that the proper working of even the most perfect system that can be devised is very often one of the most difficult matters to settle to the general satisfaction of the inmates. We do not, however, make any methodical endeavour to bring about artificial cooling, though during the present summer there must have been many occasions when such an installation would have been of therapeutic benefit. Dr. Charles E. Woodruff of Manila, in the Philippines, has drawn attention to this subject in *American Medicine* for July last. He refers to the reported case of sleeping sickness treated in a room fitted with a cold storage plant, where the daily stupor was reduced from 23 to less than 19 hours, and states that in a series of cases of dysentery in a tropical hospital improvement took place very slowly, if at all, when the temperature was over 82° F., while when it dropped below 80° there was a marked change for the better; and if it came down below 75° the patients would be soon up and about. The nearer the temperature is to 70° or 68° the better it is for the patient. He points out that the tropical negro is adjusted to a considerable range of temperature, and survives a southern outdoor life in America, but he dies from tuberculosis when taking up indoor house labour in the north. Dr. Woodruff believes that every type of man is fettered by his physique to a very limited environment, and if he is adjusted to cold air then he must have it, or he will in some way deteriorate. Thus,

cold air is good for consumptives of white race belonging to temperate climates. A hot, equable, sunny climate is not so good for such cases as a cold, variable, cloudy one, as is shown by the contrast between the bad results of treatment in the Philippines and the good results obtained in the Adirondack Hills of New York State. All cases cannot, however, be transported to an appropriate climate, so that a proper environment must be provided locally. The cooling of the air of hospitals is a simple matter. All that is needed is a "steam coil" or "radiator," in which circulates cold brine instead of hot water. This does not radiate, it absorbs, heat. According to Dr. Woodruff, all the air needed to ventilate a ward of 12 beds can be cooled from 95° to 55° by an electrically driven apparatus of the capacity known as a "one kilo-watt ammonia compression set," which can be installed on a base 10 feet square. As the coils drip moisture they cannot be put in a ward. Also, the air is damp when it leaves the coils, but it warms up on its way to the ward; or, if needed, can be warmed artificially so as to be delivered dry. The method may be carried out for ordinary dwellings as well as hospitals. Health would be preserved longer, and more work could be done with greater ease, if a northerner living in the tropics could live in and breathe air at a temperature of 55°; and this might be effected if the same expenditure were allowed for cooling in the tropics as for warming in cold temperate regions. It may be some years before in these islands we get a recurrence of the exceptional heat of the present summer, but in nearly every year there are spells of sultry weather which are extremely trying to a considerable proportion of hospital patients. The installation of a cold room for suitable cases would be an admirable offering from some wealthy and benevolent person.

DR. CARL SPENGLER'S "I.K." TREATMENT FOR TUBERCULOSIS.

SINCE Professor Koch first introduced tuberculin for the treatment of tuberculosis several modifications of that substance have been made and experimented with. Dr. Carl Spengler, whose researches on the subject are well known, has more recently made trial of a derivative of Koch's original tuberculin which he has named "I.K." We have received a communication from Dr. H. W. Godfrey containing an interesting *résumé* of Dr. Spengler's investigations and also the results of his own experience with this remedy. Dr. Godfrey explains the various steps which finally enabled Dr. Spengler to form "I.K.," and further states that it is a clear solution rendered durable by the addition of carbolic acid and sodium chloride solution. It has a two-fold action—antitoxic, which neutralises the poisons produced by the bacillus, and is therefore, directly antifebrile; and secondly, a lytic or bactericidal action. Dr. Godfrey has treated several patients with "I.K.," and sums up his conclusions thus: "One of the first effects of the I.K. treatment is an improvement in the subjective condition of the patient, he feels better, the breathing is easier, and as a rule the appetite is improved and weight gained, there is a decrease in the rhonchi audible, and the sputum after a few injections is lessened, though at first it may temporarily increase, and the temperature falls in some instances rapidly." Dr. Godfrey then proceeds to give brief notes of the cases of eight patients whom he had treated by this remedy. His results are rather startling. At the termination of the course of treatment all the patients were either in "perfect health," "perfectly well," or "quite as well as usual," and one had been "medically examined for insurance and accepted." He does not state whether "I.K." had been tried in other of his cases with less wonderfully good progress We are moved, however, to point out that this preparation has been tried by competent observers who have entirely failed to obtain the results claimed by Dr. Splengler and Dr. Godfrey. There is nothing more fallacious than to judge of any treatment for pulmonary tuberculosis which has only been tried in a few cases. A very large number of recorded instances are required before any definite conclusion can be arrived at; and, further, the preparation must be used by numerous physicians and their results carefully compared. The pupils and friends of Dr. Spengler have recently published a collection of his writings as a presentation to him on his fiftieth birthday. Several articles appear in this volume which have not been previously published, and the whole forms interesting reading and a valuable addition to the present knowledge on tuberculosis and syphilis, though we ask our readers to receive the results of employing "I.K." with reserve for the present.

A MUCH STUDIED PEOPLE.

IT is necessary to go back but very few years in the literature of Egyptology to appreciate the extraordinary revolution which has taken place recently in our knowledge of the people who lived and fought, who built temples and raised monuments, and finally died and were embalmed in ancient Egypt. But a very little while back anyone who desired to gather information concerning the actual physical remains of the ancient Egyptians would have found in the literature little save the records of the examination of individual mummies and the comparison of the findings with the accounts of embalming as given by Herodotus and by Diodorus Siculus. To-day it is very different: an extensive and specialised literature has sprung up, a vast amount of work has been done, and all the search-lights of modern medical science have been turned on the ancient dead of Egypt and Nubia. With most of these more modern studies we have already dealt in our columns, but it would seem that the time has arrived when some inventory might be taken of our knowledge of the people whose remains, though now the subjects of scientific medical inquiry, have so long been reserved merely for mysterious speculations or museum curiosity. The scientific study of the mummy has ever been in the hands of medical men, and it may be said with truth that it has been the medical man, and not the professed Egyptologist, who has learned the secrets of the arts of embalming as practised in ancient Egypt, and who has given us trustworthy data concerning the physical condition of the embalmed. More than 200 years ago Greenhill wrote his "Art of Embalming" and established himself as an authority on mummies. In his train there followed a number of members of the medical profession. In 1825 Dr. A. B. Granville wrote his "Essay on Egyptian Mummies," and nine years afterwards Dr. T. J. Pettigrew published a work which is a monument of accurate observation. Dr. Pettigrew's "History of Egyptian Mummies" reached the high-water mark of researches on the methods of embalmers; for several years no additions were made to real knowledge; and many who essayed the task fell into grave errors which Dr. Pettigrew had avoided. The modern period of research dates no further back than the last 15 years or so, when Professor Alexander Macalister showed the methods by which the physical characters and the mode of preparation of mummies might be studied according to the requirements of modern science. Since then the study of the mummy has made extraordinary progress. Professor G. Elliot Smith and his co-workers in Egypt and Nubia have enormously elaborated methods and perfected research, and by the examination of a vast amount of material have placed our knowledge of the methods of embalming employed at different historical

periods upon a very sound basis. The study of the mummy as an embalmed corpse is well-nigh perfect; so perfect that a high degree of specialisation has of necessity arisen among later workers. The chemistry of the mummy, and of the embalming substances, has been repeatedly dealt with in recent years by Mr. A. Lucas and Dr. W. A. Schmidt of Cairo, and by Dr. Paul Haas and others elsewhere. The gross manifestations of disease as displayed in the bones and the shrunken soft tissues have been fully described by Professor Elliot Smith, Dr. F. Wood-Jones and Dr. Douglas E. Derry in the reports and bulletins of the Nubian Survey. We have already noted in our columns the advent of these stages in the progress of the study of the mummy, and now a later phase is added, for the tissues of these ancient dead have been rendered amenable to the ordinary processes of microscopical examination and have been made to yield up further secrets. Dr. Marc Armand Ruffer has made this study his own, and by the publication of his "Histological Studies on Egyptian Mummies"[1] has given us a very full account of the microscopical appearance of the tissues of these ancient peoples, even demonstrating the nuclei of cells which have been dead for some 8000 to 12,000 years or so. Despite the many vicissitudes of the corpse, both before and after mummification, a very wonderful degree of preservation of minute structure is present, for striation of the muscular fibres in a meal composed of flesh has been detected in the intestine of an individual who died a thousand years before Christ. These and other astonishing instances of the wonders of preservation of delicate histological structure Dr. Ruffer has made clear, and it must be owned that it is an astonishing thought that not only the nerves themselves, but even the minute arteries supplying them, are capable of being examined as thoroughly in the body of a man dead for thousands of years as in the subject of a post-mortem examination of to-day. As we have already noted, Dr. Ruffer has not confined his researches to normal mummy tissues, but has broken fresh ground in the question of the pathology of the ancient Egyptian. His latest contribution, which is published in conjunction with Professor Elliot Smith,[2] deals with Pott's disease and psoas abscess in a mummy of the XXIst Dynasty, a contribution which marks the antiquity of tuberculosis as a human scourge. Dr. Ruffer has struck a profitable line of research in this the last development of the study of the mummy; much material awaits him, and great issues may be at stake.

THE LIQUOR TRADE IN SOUTHERN NIGERIA.

IT will be in the recollection of our readers that, in consequence of the alarming statements which have been made in certain quarters regarding the increase of alcoholism in Nigeria, the Government submitted the whole question to a committee of inquiry, whose report, published a few months ago, gave rise at the time to a good deal of acrimonious criticism. The committee, while finding that the extent of the evil had been somewhat exaggerated, admitted that the increase of drinking amongst the natives was a very real and growing danger. Since then the various missionary and temperance organisations interested in the question have pressed on the Government the need of more energetic action in the matter, and the Secretary of State for the Colonies has recently been waited on by an influential deputation from the Native Races and the Liquor Traffic United Committee, who laid these views before him. Finding that there has been some misunderstanding as to his reply, Mr. Harcourt has communicated to the press a full report of the proceedings, from which we are glad to observe that it is the intention of the Government to put forward strong and drastic proposals for dealing with the whole problem of alcoholism in native races at the International Conference on this question which is to assemble at Brussels next month. With regard to the particular case of Southern Nigeria, Mr. Harcourt was able to give a reassuring reply concerning some, at all events, of the matters which had given rise to anxiety. He was able, for instance, to show that the increased importation of spirits into the country did not mean a larger consumption of alcohol, the strength of the liquor imported having been materially reduced by the establishment of graduated duties differentiating against the more highly alcoholised spirits. The figures which he quoted may be of interest to the advocates of very high taxation as a remedy for intemperance, for it appears that in Nigeria a duty on spirits which amounts to 200 per cent. of their value has not prevented the steady increase of the imports. In this connexion it has, of course, to be remembered that the contact of the native population with industrial Europe is becoming more and more intimate, with the necessary results that the opportunities and the examples of alcoholic excess are multiplied. It is satisfactory to know that the responsible authorities realise to the full the importance of this question, for even those who are least in sympathy with teetotal views will be prepared to agree that the African negro must be protected from the abuse—as he is incapable of the use—of distilled spirits.

THE TUBERCULIN TEST IN CATTLE.

IN the *Illinois State Register* of August 9th, the views of Dr. James A. Egan, the secretary of the Illinois State Board of Health, are stated in regard to the use of the tuberculin test in cows. Dr. Egan commences by conceding that when intelligently and properly applied by a person skilled in its use, and with a working knowledge of diseases of cattle, the test is one of the best means of diagnosing tuberculosis in cows, but he affirms that he is opposed to its indiscriminate application. His chief objections are that it is positive in the presence of the slightest infections which may never spread to the udder, and that it may, on the other hand, be negative and fail to disclose a case of generalised tuberculosis in which tubercle bacilli are being passed in the milk. He is therefore of opinion that dependence on this test may lull authorities and the public into a sense of false security, and he urges the wisdom of examination by competent veterinarians to discover disease, to enforce cleanliness, and to order the segregation of animals clinically tuberculous or with suspicious abnormality of the udders. A large amount of evidence has now accumulated in regard to the uses and limitations of the tuberculin test both in man and animals. It is generally recognised that the test may be negative in miliary tuberculosis, in advanced cases, and in tuberculous meningitis, and that it may be positive in quiescent or clinically inactive lesions. It is, moreover, obviously inapplicable when there is fever. In spite of these limitations it is a useful test, and, according to Mohler in a Bulletin presented to the Public Health and Marine Hospita Service of the United States in 1908, it affords accurate diagnosis in 97 per cent. of cases in cattle. We agree with Dr. Egan that it would be unwise to rely upon this test only and we endorse his plea for intelligent and skilled examination of the cows as well, but if the test were carried out by competent veterinarians this would be ensured. We do not agree that the physical examination should alone be relied on to the exclusion of the tuberculin test or that only clinically tuberculous cows should be excluded. The ultimate object of hygienic measures in regard to the milk-supply is the eradication of the disease, and it is generally admitted that

[1] Mémoires présentés à l'Institut Egyptien, tome vi., fasc. iii.
[2] Zur historischen Biologie der Krankheitserreger, Part 3, 1910.

this is not easy to recognise in cattle in the early stages by physical examination only. It is also important to note that the experiments of the Royal Commission on Human and Animal Tuberculosis proved that bacilli may be present in the milk of cows with tuberculosis but showing no evidence of disease of the udders.

MR. B. TILLETT AND THE MEDICAL PROFESSION.

THE newspapers of Sept. 8th will be found to contain a full report of a somewhat stormy meeting of the Trades Union Congress, at which certain resolutions were moved connected with proposed amendments of the National Insurance Bill. These included a demand for "a medical court to deal with and punish medical officers for misconduct, neglect of duty, or excessive charges." Ostensibly seconding these resolutions, Mr. B. Tillett, well known as a labour leader in connexion with disputes affecting dock labourers, made an attack upon the medical profession which, we believe, few of his followers in their saner moments would hesitate to condemn. Apparently Mr. Tillett desired to express and to emphasise his apprehension lest under Mr. Lloyd George's scheme the medical man should corruptly declare men fit for work who were in fact unfit. He is reported as having said that: "Now the doctor was brought in, with the result that the employer could pay more to the doctor, and could buy up the scientific genius of the medical profession with more facility than he could buy up the lawyers. Whatever one might say against the legal profession in its unscrupulousness should be multiplied in referring to the doctors. They had had hundreds of cases where a doctor had sworn against his own knowledge and there had been no court to remove him from his position. Men had been pronounced thoroughly fit for work, and they died within a day or a week of the pronouncement. Medical officers were in the pay of firms, and they prescribed according to their payment." More of this sort of trash will be found in the papers (we quote from the *Daily Telegraph*), but it need hardly be repeated here, and it is scarcely necessary to point out that what has been cited is on the face of it absurd. If out of the "hundreds of cases" referred to any one example had been susceptible of proof there would have been no difficulty in discovering a court with ample power to "remove" the "doctor who had sworn against his own knowledge" by imprisoning him for perjury. If a man "pronounced thoroughly fit for work" goes back to work and dies next day or within a week, there is, in the discretion of the coroner, ground for an inquest, as the case in such circumstances must come suspiciously near to one of "sudden death whereof the cause is unknown." If medical officers "prescribe according to their payment," Mr. Tillett has no reason to quarrel with the provision whereby patients under the Bill are to choose their own medical attendants. However, there is no need to labour the matter. The working classes, as a whole, are not likely to deny their debt to the medical profession. The work done by it for them has been openly and indisputably charitable where it has been done in, and in connexion with, the voluntary hospitals. It has been less admittedly and ostensibly charitable, but none the less so in fact, where it has been performed with little or no hope of payment under the guise of private practice among the poor. It has been done by members of a profession, who, in acquiring the skill and knowledge which qualify them to practise, have expended money and worked for many years without being able to earn a penny at an age at which the working man's son is supporting himself in independence. It has been the work of a profession which has made no claim for an eight hours day, or for "time and a half" payment for "overtime," but has been, and is, at the beck and call of the sick and suffering during the night as during the day. Mr. Tillett has no reason to be proud of the use that he made of his unquestionable talent for public speaking upon the occasion to which we have referred.

LEAD POISONING FROM GUNSHOT WOUNDS.

IT is remarkable that among the many cases of gunshot wounds in which projectiles were retained in the tissues very few cases of lead poisoning have been observed. The subject appears to have first received attention in the sixteenth century from Ambroise Paré, who noted the innocuity of leaden projectiles retained in the tissues, and to explain it drew a parallel with the healing effect of lead on ulcers. At a recent meeting of the Société Médicale des Hôpitaux of Paris M. Ribierre and M. Flandin reported the following case. A stone sawyer, aged 26 years, was admitted into the Cochin Hospital under the care of Professor Chauffard on May 15th, 1911. In 1903, while in Algeria, he suffered from malaria. On returning to France he had three or four attacks in 1904. He never suffered from syphilis. In July, 1910, he attempted suicide with a fowling-piece charged with No. 6 shot, which entered a little below the right nipple and passed through the chest and the scapula to the wound of exit. The immediate result did not appear to have been serious, but hæmoptysis took place for a fortnight. From the wounds of entrance and exit reddish serum and then pus discharged. After a month there remained only a sinus in the back, from which ten shot were discharged. Three months after the attempt he was seized with violent colic, bilious vomiting and obstinate constipation. The colic continued for two or three weeks and was followed by jaundice with decolouration of the fæces which lasted a month. A fortnight later—six months before admission—paralysis began. When he tried to get up his legs gave way, and his arms were so weak that he could with difficulty carry a glass to his lips. In a few days the arms were completely paralysed and a little later the legs. He remained in bed completely immobilised for three months. Under massage he regained some power in the legs and more slowly in the arms. On examination the deltoid, triceps, and biceps were atrophied but not paralysed. The flexors of the forearm were atrophied, but contracted feebly. The extensors of the wrists and fingers were completely paralysed. The muscles of the lower limbs were weak and atrophied, but he could walk easily. The patellar and tendo Achillis reflexes were diminished. There was no line on the gums. At the wound of exit there was a sinus from which a little seropus trickled. Radioscopy showed numerous particles of lead beneath the right scapula, which moved with this bone, and others, smaller and less numerous and deeper, which moved with respiration and were certainly situated in the lung. The surrounding lung for the distance of a finger-breadth gave a shadow. Blood examination showed 3,399,000 red corpuscles and 12,600 white corpuscles per cubic millimetre, of which 67 per cent. were polynuclear. Lead could not be found in the urine by electrolytic examination, but on treating pus from the sinus with ammonium sulphide blackish-grey granules were observed in all the leucocytes. Under sulphurous baths and galvanisation of the muscles of the upper limbs marked improvement took place, but drop-wrist persisted. It seems that the cartridge used by the patient contained about 250 shot, weighing together 30 grammes. He said that not more than 20 shot were discharged from the sinus. In view of the improvement operation was not thought advisable, but recurrence of intoxication may render it necessary at a future time. Only seven cases of plumbism due to retained leaden projectiles appear to have been

recorded, all by French and German writers. The first was reported by Bronvin.[1] A child, aged 13 years, received in the right hand the charge of a fowling-piece. Two shot were immediately extracted from the wound. Suppuration followed and the wound healed in seven weeks. Shot could be felt beneath the scar. Eight weeks after the accident there were intense colic, obstinate constipation, and a blue line on the gums. Two more shot were extracted, but attacks of colic continued for more than a month, after which recovery took place. Kuster and Lewin have reported the case of a German officer who was shot in the right knee during the war of 1870.[2] The bullet was not extracted, and during the following eighteen years he complained only of pains in the knee. In January, 1888, he began to suffer from attacks of colic with constipation, anæmia, jaundice, and tremor of the hands. There was a blue line on the gums which disappeared from time to time, and lead was found in the urine. At the end of a year the tibia was trephined, andextending from the periosteum to the marrow tracks of little blackish-blue masses were found. After removal of these recovery gradually took place.

UNVENTILATED BEDROOMS.

IN an exhaustive report on the sanitary condition of Hackney for the year 1910 Dr. J. King Warry, medical officer of health of the district, has an interesting and suggestive note upon the frequent use of inadequate rooms as sleeping-places in the small flats which compose what are known as "tenement houses." According to what he has observed in the borough there are in many tenements, not otherwise ill-built or defective, tiny chambers intended presumably for bedrooms, but corresponding in structure to "a ventilated and lighted box-room." They are small, lighted by an ordinary sash window, and provided with a hole in the wall about six inches square which is guarded outside by a grating, but they have no fireplace. In Dr. Warry's experience one of these closets was used by a small boy suffering from measles, and his mother, after stopping up the hole in the wall, had lit an oil-stove in order to provide warmth. This case, it is pointed out, illustrates the need for a fireplace and chimney if such rooms are to be made use of for living purposes. On other occasions Dr. Warry found that one or more of the children of a family were assigned a room of the kind described as a sleeping-place, and that the blocking of the ventilating hole was a frequent practice. He has endeavoured to discover any legal means for discouraging the construction of such rooms, but does not find that he is assisted by any Building Act or other statute or regulation. All will agree that the matter is of some importance, particularly as inadequate accommodation such as that described is usually assigned to children or to a servant, usually a young girl, where one is kept. In this connexion, however, it may be mentioned that the provision of ill-ventilated and insanitary sleeping-rooms for members of the household whose position precludes them from protesting is not confined to tenement dwellings built for the working poor. In many comparatively important and otherwise ostentatious flats the servants' bedroom is wholly unfitted for its purpose, and although its air space and means of ventilation would be insufficient for one occupant it is often made to serve for two. They do not complain; domestic servants do not "strike" against stuffy, dark, and insanitary sleeping rooms with a tiny and perhaps equally gloomy kitchen to sit in, but want of knowledge and foresight on the part of those who have built flats and small houses is probably responsible for a great deal of the difficulty which their tenants find in obtaining and keeping for any long period servants of a decent class. The question of sleeping accommodation so far as it affects servants seems to us, however, to be a matter for the consideration of employers, at any rate, so far as these are of the "upper" and "middle" classes, rather than for legislation. With regard to the homes of the working-classes, including those which have been built since the serious consideration of sanitation and hygiene has occupied the legislature, it must be borne in mind that the undesirable conditions, to which we have at times drawn attention, are not entirely due to defects or to omissions of a possibly intentional character in Acts of Parliament. Rooms built with provision for ventilation, frequently are rendered useless by the deliberate action of their occupiers. The ventilating holes certainly might be increased in numbers or size in small rooms and fire-places with chimney flues might be added, but we hardly conceive that the tenants would, or could, afford fires as a rule in their children's sleeping rooms, and a flue regarded as a ventilating shaft only is just as easily blocked as a hole in the wall. Indeed, the closing of unused chimney flues is a practice not confined to the working classes, if it exists generally among them. What is required is a wider recognition of the advantage or necessity of fresh air as conducing to health, a recognition which is increasing, and which we have no doubt will become more general as children educated in modern schools grow up.

[1] Union Médicale, 1867, No. 3, p. 89.
[2] Archiv für Klinische Chirurgie, 1892, Band xliii.

THE TREATMENT OF CONSTIPATION.

IN another column we publish an article by Sir James Sawyer drawing attention to certain points in the treatment of constipation. There is now a tendency to at once proceed to the administration of drugs when dealing with cases of chronic constipation, and to rely on their action alone rather than to bring into force those provisions which nature supplies. Various old therapeutic measures are apt to be lost sight of, and medicaments are substituted for them which sometimes tend to increase the evil rather than remedy it. To "solicit a daily evacuation of the bowels," as the late Sir Andrew Clark was wont to impress upon his patients, is certainly a useful maxim which is likely to be neglected in the daily busy rush of a business man's life; nevertheless, as Sir James Sawyer observes, by long-continued habit in health the act of voiding fæces can become to some extent a rhythmical process, performed at a fixed time by an acquired periodicity each 24 hours. It will be generally acknowledged that before prescribing drugs every care should be taken to inquire carefully into each patient's daily mode of life, so as to endeavour as far as possible to produce the desired effect by habit, diet, or simple mechanical means, such as physical exercises or massage. Sir James Sawyer rightly urges that no case of habitual constipation can be treated by "rule of thumb," and if drugs are resorted to, it is wise to vary the remedy occasionally, as frequently a patient appears to become immune to the action of one particular laxative or purgative. However, there are exceptions, and occasionally a case occurs of the same combination of drugs being satisfactorily used for many years without any change in the prescription. A similar principle here exists as in the treatment of other maladies. A study of the personality and possible idiosyncrasies of each patient must be observed, for it is only by a due perception of every circumstance that successful treatment ensues. Neither Sir James Sawyer's teaching nor our comment contains a word which is not well known to all medical men, but the main lesson to be drawn is rather for the public than for the medical profession. The public in increasing numbers love to change their regular medical attendant for some one

who is supposed to be "good" at this, that, or the other class of case. It wants to be impressed upon them that a prolonged and detailed acquaintance with a patient has a diagnostic value "in all things great and small."

THE ETIOLOGY OF BERI-BERI.

THERE is probably no disease concerning which so much discussion as to its etiology has taken place as beri-beri. In the elucidation of the mystery concerning it, Dr. Henry Fraser and Dr. A. T. Stanton of the Malay States have just published the results of an extremely painstaking and exhaustive research, and it would seem opportune to draw attention to the many hypotheses concerning its nature (p. 828). They, as will be seen, are various and conflicting; some which would appear to be convincing from the positive nature of the data on which they rest, are succeeded by others resting on equally valid grounds. The late Dr. Kynsey, formerly Inspector-General of Civil Hospitals, Ceylon, held that one form of the disease was due to the presence of ankylostoma, and possibly also of trichocephalus dispar, the effect of these worms accounting for the anæmia present in the disease.[1] The germ theory has been invoked; thus Pekelharing and Winkle claimed to have discovered a specific bacterium; H. V. Dangerfield of Réunion also described a bacterium having five stages of evolution—namely, a hemispherical, a diplococcic, a micrococcic, a zooglœic, and, finally, a sporulating form; Ogata in Japan isolated his kakke coccus, whilst later Tsukuki announced the discovery of the specific diplococcus of the disease. Then we have Manson's theory that the disease is produced by a toxin from a germ whose nidus is outside the body. He aptly compares the position with that of alcoholism thus: In the case of alcohol the germ is the yeast plant; the nidus solutions of sugar; the toxin the alcohol; and the pathological effect a peripheral neuritis. In beri-beri the saprophyte produces a toxin; the nidus is the soil or surroundings; the man is poisoned, and as a pathological effect suffers from a peripheral neuritis. A striking example in favour of this theory was furnished in 1895 by Dr. Travers at Kuala Lumpur. Here there were two jails. In the old one the disease had not appeared, but after a new additional jail had been built an extensive epidemic arose in it. The rice supplied to both jails was the same. On transferring the sick from the new jail to the old one they rapidly recovered. The late Dr. Norman Chevers held the view that has been followed and amplified by Dr. Hamilton Wright. They hold the disease is consequent on a bacillus being taken into the human organism with the food; after incubating for about ten days a specific duodenitis is produced, and from this the nerve poison is developed. Wright states this affection of the duodenum always shows itself at the commencement of the illness. Yet another hypothesis lays the blame on certain metallic elements. Amongst these may be mentioned arsenic and oxalate of potassium; whilst recently Staff-Surgeon A. J. Laurie, from his experience on the *Sphinx*, incriminates copper. Lastly, we come to the hypotheses connected with the diet, and it is with these hypotheses that the most convincing work has been done. Some hold that the disease is due to a deficiency of fat in the diet. Dr. Brémand showed how an epidemic at Poulo Condor ceased suddenly under the influence of a regimen containing fat pork. A most convincing theory, however, is that connected with the deficiency of nitrogen in the food. Baron Takaki, when surgeon-general of the Imperial Navy of Japan, furnished a most striking proof of this factor, and by his ordinances seems to have eradicated the disease from that navy. In 1880 he noticed the great disproportion between the number of cases occurring in warships and those in barracks, and thought this might be due to the difference in the food on board ship and on shore. He held that in the naval dietary there was an excess of carbohydrates and a deficiency of proteid. In 1883 the warship *Ryujo* made a voyage of 271 days to New Zealand, and 160 cases of beri-beri occurred out of 350 *personnel*. By his influence the ship *Taukuba* made the same voyage under the same conditions, but with an improved dietary, avoiding the excessive use of rice. The *personnel* in number were about the same. The result was that only 16 cases of the disease occurred. This significant result was followed by elimination of the disease from the Japanese navy, so that during the war with Russia it was free from it, although the army suffered considerably. Comparing now the ratio of the disease in the Japanese navy in different years: in 1882 the ratio per cent. was 40·45; in 1889 it was 0·03. The latest researches in regard to the food factor have just been published by Dr. Fraser and Dr. Stanton; much of the work has already appeared in our columns, but we welcome it in volume form. Their results may not prove that a certain condition of the rice is the *only* cause of beri-beri, but they certainly do prove it is one cause. They show that white polished rice will cause the disease; that when fowls, on the contrary, are fed on unpolished rice they do not contract the disease; and, finally, that if the polishings from white polished rice be added to a diet of white polished rice beri-beri does not result. This experience is confirmed by that found previously in the prisons of Java. In those jails in which white rice was consumed 36 out of 51 were affected; whereas in those using red uncleaned rice only 1 out of 37 jails was attacked. These researches coincide to a great extent with the opinion of Dr. Hébrard, who has just published his views on the disease. We may also mention that in 1896–97, and again in 1906, Professor C. Eykman of the University of Utrecht published the results of his researches into the question of the factor of rice in beri-beri, in which he proved that an extract from rice polishings if added to white polished rice cured sick fowls of polyneuritis. To complete the theories implicating diet as a factor, it may be mentioned that Gelpke incriminates a dried fish infected by a trichina; Grimm, infected fish generally; and Miura, raw fish. These causes, however, can be excluded at Kuala Lumpur, where in 1901 for eight months no fish was included in the diet of the prisoners who during this time contracted the disease.

[1] Dr. Noe found in 74 out of 77 cases the eggs of the Uncinaria americana, and consequently holds that this nematode plays an important part in the etiology of the disease.

THE late Dr. Samuel Gee, whose will has now been proved, left the residue of his estate, amounting to about £20,000, to his daughter for life, with contingent remainder to the Royal College of Physicians of London upon trust, as far as possible, to form a permanent endowment fund for the College.

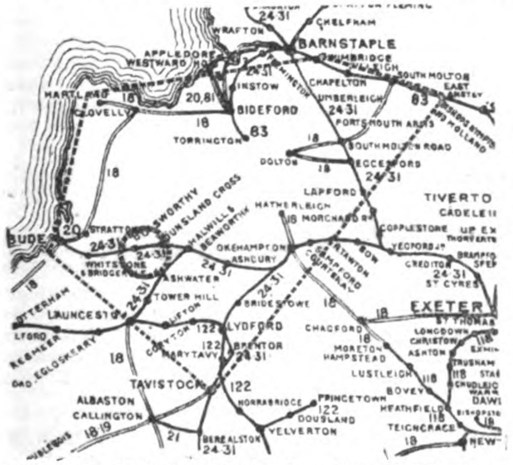
Dr. D. Fraser Harris, lecturer on physiology in the University of Birmingham, has been appointed to the newly founded chair of Physiology at Dalhousie University, Halifax, Nova Scotia.

DEATH OF MR. HORACE NUTT.—Mr. Horace Nutt, who died at his residence, Brooklyn House, Sherborne, Dorset, on Sept. 6th, in his seventy-third year, qualified as M.R.C.S. in 1861 and had been for many years in practice at Sherborne, where he was for a long time medical officer of health. He was also medical officer and public vaccinator of the Sherborne Union, and for the past 35 years has been coroner for the Hundred of Sherborne and Yetminster, an office which carried exceptional justiciary powers. Mr. Nutt was, it is said, the last of the "Liberty Coroners." He was very popular in Sherborne and the neighbourhood.

"SPOTTED FEVER" AND ACUTE POLIOMYELITIS IN DEVON AND CORNWALL.

(FROM A SPECIAL CORRESPONDENT.)

EARLY in August a notice appeared in one of the Devon papers of an outbreak of "spotted fever" in the area around Holsworthy. Later in the same neighbourhood cases were recorded of acute poliomyelitis, and in the public mind some difficulty appears to have arisen in diagnosis. The first cases occurred seemingly some months ago, but little attention was paid to the matter, and, as usually happens, initial neglect has apparently enabled the disease to spread over a wide area of an irregular pentagon in shape. Starting at Bude on the west, the sides pass north and slightly east to Hartland, east and slightly north to Swimbridge, east and slightly south to South Molton, south-west to Tavistock, thence north-west to Bude. At a point within the Bude angle is Holsworthy. The accompanying map is from Townsend's "Western Counties Railway



Map showing (1) the area around Holsworthy; and (2) the area of irregular pentagon shape marked by a dotted line, within which the epidemics have occurred.

Guide," the figures referring to the paging of that guide. There is no direct intercourse between the centres involved, the market towns being in quite different directions.

The Situation at Holsworthy, &c.

Dr. R. J. Reece, a medical officer of the Local Government Board, was sent down by that Board to make a special investigation, and he has held private consultations with local medical officers of health and local health authorities, together with the county medical officer in various centres. The Holsworthy urban council hardly seemed to realise the necessity for taking efficient measures at the onset to prevent an epidemic and the danger of waiting until "one or two doubtful cases" were followed by a widespread outbreak.

At a meeting of the council held on August 8th, after what residents called "the scare in the papers," an animated discussion took place. The medical officer of health, Mr. W. G. Gray, was charged with having given rise to the scare by supplying information to the press, but he denied this. Mr. Gray said that the first case of cerebro-spinal fever (though not recognised as such at the time) took place at Clawton in the first week in May. He described the case and referred to seven other cases. He advised—(1) the distribution of leaflets calling attention to the symptoms of the disease and urging that medical advice be at once sought whenever they were found; (2) compulsory notification; (3) the inspection of all school children before reassembling; (4) official disinfection of all houses and clothing when the disease has died out; (5) the erection of isolation sheds near a cottage that could be used for administrative purposes. Mr. George Adkins, medical officer of health of the county of Devon, who was present, supported the recommendations, as did also Dr. Reece.

In spite, however, of the definite advice of three experts, the resolution in favour of notification was carried only by the casting vote of the chairman. The council declined to make provision for the isolation of cases. After this experience at the urban council, Dr. Reece found it necessary to speak at the meeting of the Holsworthy rural council, held the next day. He told the council it had in its district cases of an infectious disease that killed people. There were probably some thirty cases inside that district alone. The disease extended to at least three other sanitary districts in the neighbourhood, and probably, he believed, more. He did not think that the outer limit had yet been reached. Both cerebro-spinal meningitis and acute poliomyelitis required to be treated as cases of infectious disease—i.e., a disease which should be isolated and contacts disinfected. Sometimes there were one or two cases in a house, no medical man was consulted, and the cases multiplied and assumed a serious aspect. It was not only a direct question of loss of life—about 10 per cent.—but a very considerable proportion of patients were left paralysed, often permanently, and some were deprived of speech, hearing, or sight. It was as important, he said, to notify minor cases as it was the more severe ones.

Mr. Gray said that two deaths had been certified as due to cerebro-spinal fever, and there were two other deaths in which the certifying doctor had some doubt. Mr. Gray took further occasion to protest against the unfair treatment meted out to him in charging him with giving out information to the press. In point of fact, he had declined to accede to such a request from a London paper until after his report should be presented to the council. It then became a public document, and copies had been sent in due course to the Local Government Board and the county council. The council adopted notification *nem. con.* On August 10th a labourer, aged 30, died from spotted fever at South Wonford, Thornbury.

Mr. C. C. Brodrick, medical officer of health, at a special meeting of the Tavistock rural council on August 18th, reported two cases of spotted fever in the district; one fatal one near Broadwood Widger and the other on the Launceston side of the district. Spinal fluid from the latter case was sent to Dr. M. H. Gordon at St. Bartholomew's Hospital, who replied that it was undoubtedly a case of spotted fever. It was unanimously resolved to make spotted fever notifiable for six months, and it was decided to obtain a cottage and canvas screens for isolation purposes, and that a printed description of the symptoms of the disease, with instructions how to act, should be circulated among the public. The chairman, the medical officer of health, and the clerk were appointed a subcommittee to carry out this resolution.

Lack of Facilities for Hospital Isolation.

On August 23rd Mr. Gray reported to the Holsworthy rural council that since the last fortnightly meeting altogether eight cases of cerebro-spinal fever and infantile paralysis had been reported. Two had died and a third case would end fatally within 24 hours. The cases were scattered. The origin of the outbreak was unknown. The present isolation cottage was too dilapidated for use. He produced photographs and said that four inches of water stood in the inner room, although it had not rained for a month. The council, however, decided to defer consideration of the question of isolation accommodation for a fortnight.

With reference to this "let-it-slide policy" the *Bideford Gazette* said: "The adjoining districts are vitally affected, and if Holsworthy will not isolate their cases for their own protection it will become the duty of the adjoining authorities, in self defence, to appeal to the Local Government Board to bring the necessary pressure to bear upon them to make them do so for the sake of others."

Unfortunately, Holsworthy is not the only district in Devon where there is no provision for isolation, as appears from an inquest held at Hartland on a man aged 70, who died there on August 31st after a few hours' illness. At 1.30 P.M. he complained of pain in the stomach and a neighbour gave him ginger tea and helped him to bed. He was seen alive at 4, but was dead by 5 P.M. Dr. A. F. Wright said there was recent inflammation at the base of the brain and that turbid fluid came from the cord. He considered that the conditions found were not sufficient to cause such a sudden death. A verdict of "Death from natural causes, syncope," was returned. One of the jury criticised Dr. Wright for having taken a case of poliomyelitis into his own house. The doctor explained that a midwife at a case was seized with the disease, that the people at her lodgings would not take her

back, and, as there was nowhere else she could go, he had turned out of his own house and put the patient in.

As there is no isolation hospital for the Bideford rural district, in which Hartland is situated, the comment of the local paper certainly appears justified:—

It does seem nothing short of a public scandal that the medical man, because he happens to follow his profession in an isolated place like Hartland, should have to take upon himself the duties which ought to be carried out by the sanitary authority. It is most ungenerous that his kindly and Christian action should be criticised as Dr. Wright was by some of the jury.

Hartland, which is a very small village in the extreme north-west of Devon, has had four other cases of acute poliomyelitis, occurring in a married woman and her three children.

Progress of the Outbreak.—Some Difficulties.

At South Molton a child is reported to have died from spotted fever on August 12th, and a boy, aged 15 years, taken ill on August 28th, died from acute poliomyelitis on August 30th.

At Barnstaple rural council on Sept. 1st Dr. H. C. Jonas, deputy medical officer of health, reported a fatal case of acute anterior poliomyelitis at Swimbridge. The boy, after a visit to South Molton, went on to Exeter, and was there taken so ill that he was carried to the train and taken home to Swimbridge on August 26th, where he died the next day. All the medical men in the district have been notified of this case and contacts have been traced.

It seems impossible at the present date to follow out the progress of the outbreak, many links in the chain are as yet unknown to us. For example, it is not certain that even all the fatal cases are included in this account. Two other difficulties are present; the distances from centre to centre and the absence of suitable isolation accommodation. Measured on the map in a straight line, Holsworthy to South Molton is 26 miles N.E.; to Broadwood Widger, 10 miles S. by E.; to Hartland, 16 miles N. by W.; to Penryn, 56 miles in a straight line S.W.; to South Wonford, Thornbury (Devon), 4 miles N. by E.; Hartland to South Molton, 28 miles E.; Penryn to South Molton, about 80 miles.

At Dartmouth town council on Sept. 4th Dr. J. H. Harris, medical officer of health, recommended that cerebro-spinal fever and acute poliomyelitis should be made notifiable for a year, but Alderman Row said that "that meant fees," so the question was referred to a committee. It is a pity that the council did not adopt the recommendation at once; delay in such matters may probably prove much more serious than "fees." Owing to the presence of poliomyelitis all the schools in certain of the parishes have been closed for one month from Sept. 4th or until notice.

The Question of Isolation Hospitals.

At Bideford rural council on Sept. 5th Dr. L. B. Betts, medical officer of health, reported four cases of infectious acute poliomyelitis from Hartland and one from Woolsery. He advised that a conjoint infectious diseases hospital should be provided by the various authorities in that portion of North Devon, and he reminded them that Dr. Wright at Hartland had had to isolate a patient in his own house. The chairman said the council had discussed the question over and over again. Owing to the scattered nature of the district the provision of a hospital was a difficult matter, as Dr. Reece had appreciated. The port sanitary hospital ship was suggested, but it was almost certain that the port authority would not agree. All the surrounding councils have tried in the past to put off providing isolation hospitals because of the presence of the hospital ship. On two occasions the ship was used to isolate cases from shore, but the port authority decided that they would not allow it again. An emergency committee was appointed, with power to act in case of further need.

Some nine years ago Northam council had a conference with Bideford rural council to arrange, if possible, for the erection of a conjoint isolation hospital, but no agreement could be effected and the matter dropped. The necessity for proper isolation has been pointed out time after time by inspectors from the Local Government Board and by medical officers of health. Now some sort of provision must be made in a hurry to tide over the present emergency or the people will have to be left to shift for themselves, as in the case at Hartland. There is a good isolation hospital belonging to Bideford urban council, and Northam council has a small building which, however, hardly answers modern requirements. Holsworthy seems to be waiting to see if the epidemic will last.

The provision of a conjoint infectious hospital for the Tavistock urban and rural councils has fallen through, as certain details could not be agreed upon. If infectious hospitals are necessary it is incomprehensible why so many local authorities keep postponing the matter. The extensive area comprised in the districts of Tavistock and Holsworthy and Bideford rural district is now face to face with a serious problem which cannot be solved in time to be of real use in preventing the spread of this epidemic outbreak. It is to be hoped that the various councils will at last see the advantage of being prepared beforehand. The Tiverton councils have a conjoint infectious hospital, and other examples are to be found Mr. Gray of Holsworthy recently found himself in a difficult position. A child contracted acute poliomyelitis and the mother was expecting her confinement. There was no means of isolation in the house. The council at their previous meeting had put off providing any isolation accommodation, so Mr. Gray bought a portable shelter on his own responsibility for the woman. The council decided to pay the cost, £15. The child has since died.

Adoption of Notification.

A fresh centre has started at Westward Ho, where it became known on Sept. 6th that a boy, aged 9 years, had poliomyelitis. On Sept. 5th Penryn (Cornwall) town council resolved:—

That acute poliomyelitis having appeared within the borough, the provisions of the Infectious Disease (Notification) Act, 1889, shall extend to acute poliomyelitis and cerebro-spinal fever.

This resolution will not come into force until Sept. 15th, or at least a fortnight too late. The history of the present outbreak shows clearly the real necessity of making these two diseases permanently notifiable all over the kingdom, and it would be well if the Local Government Board would take steps to do so as soon as possible. Buckfastleigh urban council has proposed to adopt the section permanently. Several other councils have adopted it for six or 12 months.

Outbreaks of Acute Poliomyelitis.

At South Molton rural council on Sept. 8th Mr. H. M. Body, medical officer of health, reported that five cases of poliomyelitis had been notified in the district. The children had not visited or come into contact with any persons connected with other cases. The patients were three miles from one another, and there had not been two cases in any one school. He recommended that persons in contact with the disease should spray their mouth and nose with a solution of permanganate of potash. He stated that it was possible for a person to convey the germs several miles to someone else without himself contracting the disease, which he (Mr. Body) considered might be conveyed through the air.

At a meeting of the Devon county education committee on Sept. 8th Mr. G. Adkins, county medical officer, gave some particulars of the outbreak of acute poliomyelitis in various parts of the county. He had closed 25 schools. The disease was present in 12 out of the 52 districts of the county. There were 80 cases altogether, and 16 deaths had occurred. A great many children were permanently paralysed. One medical man had 35 cases. In reply to a question Mr. Adkins said that three definite cases of spotted fever were known amongst those reported.

FORTY-SEVENTH ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR IRELAND.

NOTWITHSTANDING the dislocation of routine work which is probably inseparable from census taking, the Irish Registrar-General's report for 1910 has appeared with commendable punctuality—little more than six months having elapsed since the close of the year to which it has reference.

Sir William J. Thompson, whose second annual report is the subject of the present notice, and whose interesting review of Irish vital statistics appears in the present issue of THE LANCET, on p. 809, is fortunate in being able to announce a further improvement in the public health.

Although the rates both of natality and mortality were somewhat below those of the preceding year, the birth-rate in 1910 was slightly higher than the decennial average. Irish mortality, expressed in terms of estimated population, was equal to 17·1 per 1000, and was therefore lower than the decennial average by 0·6 per 1000. Only in two of the previous ten years—namely, in 1905 and 1906—had so low a general rate been attained. This result is due to a fall in the fatality from tuberculosis, the deaths from this cause, in 1910, being fewer by 2678 than the number recorded so recently as the year 1904.

Population Estimates.

The difficulty of estimating the population is exceptionally great in Ireland. Of the effect of immigration on the numbers living no record is available, so that the Registrar-General has no alternative but to base his estimates for each year on the balance of births, deaths, and emigrations, the only other definite factor at his disposal being the number of the people at the previous Census. The population of Ireland still continues to decrease. At the Census taken in April, 1911, the population of Ireland was found to be 4,381,951.

Vital Statistics.

In considering local changes of natality and of mortality it must be borne in mind that the populations employed in framing ratios are necessarily the result of estimation, and experience shows the unreliability of such estimates for periods remote from the Census. Accordingly, when the results of the recent enumeration are available, it will probably be found necessary to revise the published rates of marriages, births, and deaths, especially those for the later years of the past decennium. The deaths registered in Ireland last year numbered 74,894, and were equal to 1 in 58·3 of the population, and to a rate of 17·1 per 1000 estimated to be living at the middle of the year. Disregarding ages, the death-rate among females was slightly higher than among males. Of the total deaths about a fifth part occurred in public institutions. Some idea of the local prevalence of poverty in Ireland may be formed from the fact that the proportion of deaths in workhouses was equal to 17 per cent. of the total in the province of Leinster and to 19 per cent. in Munster, whilst it was less than 11 per cent. in the provinces of Ulster and Connaught. In different parts of Ireland mortality varied widely; the rate did not exceed 13·1 per 1000 in county Clare and 13·2 in County Mayo, but in the county borough of Dublin it amounted to 22·4 per 1000. The relatively low mortality among young children, to which we have previously referred as exceptional, has been maintained in the year 1910. From the present report we learn that in Ireland generally the deaths of children aged 0–5 years did not exceed 33·7 per 1000 living at that age, a rate which is not only considerably below the average in England, but is practically identical with the mean rate in "rural England," as shown by the last issued report of the Registrar-General. At subsequent ages the Irish rates are higher than those of the English rural counties, and in some cases exceed the average rates for England and Wales as a whole.

Infantile Mortality.

Ireland still continues to compare favourably with other parts of the United Kingdom in respect of infantile mortality. In the decennium ended 1909 the rate averaged 97 per 1000 births, whilst in the ensuing year it further fell to 95 per 1000. In the "civic unions," which contain the chief towns, the rate was 123 per 1000, and in the remainder of Ireland it was as low as 75·5; and even this low rate exceeded that of the previous year, which had been only 70·9 per 1000. About one-third of the deaths at this early age were caused by wasting diseases, including premature birth, atrophy, and congenital defects. Other chief causes of death were bronchitis and diarrhœal diseases, which accounted for nearly one-fourth of the total mortality.

Occupational Statistics.

The Irish Registrar-General has this advantage over his colleagues in England and Scotland—that he possesses the means of ascertaining the relative mortality in the various social grades of the community. In the present report the familiar table reappears, showing the mortality at several ages experienced by four sections of the Dublin citizens. Although this table relates to one year only, we believe that similar tables have been prepared for a long series of years. We hope, therefore, to see in some future report a summary of the facts for as many years as possible, for such a summary would be instructive as furnishing an approximate measure of the average mortality in the various social grades of a large urban population. From the present table it appears that whilst in the "professional" and "middle" classes, and, indeed, in the artisan and shop-keeping classes also, the mortality was considerably below the average (22·7), it was very high in the "general service" class, being equal to 27·9 per 1000 among hawkers, porters, and labourers.

Principal Causes of Death.

From a table comparing the mortality in the year 1910 with that of the previous year it will be seen that measles, whooping-cough, and scarlet fever were more destructive than before, whilst there was a fall in the mortality from the other common infectious diseases, as well as from pneumonia and bronchitis. No deaths from small-pox have been registered in Ireland since 1907; nevertheless, the returns of recent years show a dangerous falling off in the number of vaccinations. In the year 1909 only 78·3 per cent. of the infants born had been successfully vaccinated by the end of that year. The number of defaulters has steadily increased since 1905. The loss of life from tuberculous disease in the year 1910 was less than in any previous year. The deaths from all forms of the infection numbered 10,016, and corresponded to a rate of 2·29 per 1000 of the population. Six years ago—namely, in 1904—the rate attained its highest point: it was 2·90 per 1000, or 1·1 per 1000 above the English rate for the same period. Of the total deaths from tuberculosis almost three-fourths were due to phthisis, which caused a mortality of 1·72 per 1000. Taking all ages together phthisis would seem to be equally destructive to both sexes, but when the ages at death are examined the differences are found to be considerable. At ages under 20 the loss of life is exceptionally heavy among females, whilst after that age the greatest loss is sustained by the male sex. In Ireland the age of maximum mortality in both sexes is between the twenty-fifth and thirty-fifth year, or at least ten years earlier than in England. From the occupational mortality table for 1910 it appears that phthisis exacts the heaviest death-toll from commercial clerks and petty tradesmen, who succumb to it twice as readily as do members of the professional class. In order, however, to settle the question of relative occupational mortality from this disease the facts for more than a single year will have to be examined.

Campaign against Tuberculosis.

In Ireland a vigorous campaign against tuberculosis is being conducted by the "Women's National Health Association," which was originally founded, and is still presided over, by the Countess of Aberdeen. Reviewing the causes contributory to the success of the movement, the Registrar-General speaks appreciatively of the work of the association. As tending towards the general improvement of the public health, he assigns particular importance to the practice of diffusing simple health instruction among the masses, which has from the first been adopted by the visiting staff. Among the measures thus advocated may be noted the proper ventilation of dwellings, the observance of personal and domestic cleanliness, the selection and cooking of food, the instruction of mothers and children in the essentials of health, the provision of meals for school children, and the home care of consumptive patients. In the advocacy of these measures the association has willing coadjutors in the medical officers of health, possessing as they do exceptional familiarity with the needs and the home life of the very poor. Among other preventive agencies against consumption the Registrar-General speaks highly of the instructive reports he receives periodically from the local registrars, most of whom are medical men, whose intimate knowledge of the local conditions prevailing in widespread and often sparsely peopled districts renders their coöperation of the utmost value. From a large number of these reports the following may be cited. One registrar says that "owing to the spread of knowledge about tuberculosis this disease is practically stamped out in this district. The cases are now seen early; and, thanks to the intelligent coöperation of patients and their friends with regard to fresh air, disposal of sputum, &c., it is generally possible to arrest, if not cure, the disease in the patient, and also to prevent its spreading to other members of the household."

Another registrar reports that "tuberculosis seems to be losing ground in this district." Yet another registrar remarks that "the infectious nature of tuberculosis is now widely recognised, and also its preventability. The people, until recently, bowed their heads to its ravages and said, 'twas the will of God'! They now see that the 'will of God' lies the other way, the way of sunlight, fresh air, cleanliness, and freedom from disease."

Sir William Thompson concludes his able and instructive report with a graceful recognition of the valuable assistance rendered in its preparation by his colleague, Dr. Ninian M. Falkiner.

ASYLUM REPORTS.

Dorset County Asylum (Annual Report for the Year 1910).—The average daily number on the registers at this asylum was, for the year reported on, 856. There were admitted 220 cases, of whom 55 were private cases. There appears again to have been a very high proportion of the maniacal type among the admissions, in the case of women over 60 per cent., and in the case of men almost 50 per cent. The small percentage of cases of the depressed type is in striking contrast to the records of a few years ago. Amongst etiological factors heredity is again in the ascendancy. In the case of the admissions of 1910 there was a percentage of over 50 in which there was evidence of direct or collateral inheritance. Among other factors enumerated in the causation table that of stress takes a prominent position, and Dr. P. W. Macdonald, medical superintendent, points out that when this is considered in relation to the preponderating influence of heredity, there is a fairly sound basis on which to build a hypothesis of the high percentage of mental disease in this county. He adds; "The inference is simple. In the case of the predisposed all and every shade of pressure should be guarded against, because of the danger of an early breakdown, yet when any suggestion is made to the responsible person the suggestion is either disregarded, or as more often happens, grave offence is the result of true and well-meant efforts to save and protect the predisposed from lasting and irretrievable disaster. Such is the present position; and so long as the concealment of facts predominates, there is little hope for a better or clearer understanding of the true and fundamental facts as regards the causation of mental disease." The number of cases discharged was 87, and of these 64 were discharged recovered, being a percentage of 41·02 on the direct admissions. With relation to divorce and insanity, Dr. Macdonald points out that in certain cases patients recovered after very prolonged periods of illness. For instance, in 1910 one case had been under care for five years, a second for six and a half years, a third for nine years, and a fourth for 23 years. Of those discharged recovered 75 per cent. were placed under treatment within three months of the onset of the attack. This is regarded as a striking proof of the change that has occurred in recent times with reference to the public estimation of the home for the treatment of the mentally afflicted. There is no longer a reluctance on the part of those at home to have their relatives placed under the best possible conditions, and if we could only get rid of the absurd and antiquated words which constitute the so-called stigma, mental disease would be talked of and treated as other diseases. The percentage of deaths to the total number under treatment was 7·7. Dr. Macdonald draws attention to the steady and gratifying continuance of the good results of solaria treatment.

Roxburgh, Berwick, and Selkirk District Asylum (Annual Report for the Year ending May 15th, 1911).—The average daily number on the register for the year was 310·3. There were admitted 61 patients, being 9 more than during the previous year, and 4·4 less than the average for the previous ten years. Sixteen admissions had been previously under treatment in this asylum, the periods of absence ranging from 31 years to seven weeks, the average period of absence being seven years. Among the admissions hereditary predisposition was ascertained to exist in 27 cases (44·2 per cent.). The physical condition of the patients admitted was bad in 55·7 per cent., very bad in 14·8 per cent., and good or average in 29·5 per cent. Thirty-two patients were discharged, of whom 21 had recovered. The recoveries as compared with the admissions gave a percentage of 34·4. Of the 21 recoveries 18 were cases in which the disorder had been of less than three months' duration on the patient's admission, and three in which the duration had been from three to six months. The deaths numbered 23, the rate of mortality on the average number on the register being 7·1 per cent. The mean age at death was 63·8, and the average duration of residence in the asylum was six years and nine months, the periods ranging from seven days to 37 years. Post-mortem examinations were made in 91·3 per cent. of the cases.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Birmingham.—The proportion of notified cases of scarlet fever removed to the city hospitals each year from 1900 to 1908 was between 86 and 90 per cent., in 1909 it had fallen to 78 per cent., and in 1910 was 72 per cent. The remaining 28 per cent (some 750 cases) were treated at their homes, the health authorities being in each case satisfied that the patient could be kept in a separate room. Dr. J. Robertson compares the two groups in regard to the occurrence of secondary cases, and concludes that in this respect the results on the whole were as good when the scarlet fever case was treated at home as when he was removed to hospital. The mortality rates for hospital and home patients respectively were 3·3 and 2·1 per cent. When the scarlet fever case has been removed to hospital and the house disinfected it is the practice to allow any school child in the house to return to school after ten days from the date of disinfection. In considering the sufficiency of this interval Dr. Robertson gives the figures for 1910; 287 cases occurred within 28 days of the removal to hospital of the primary cases, of which 253 occurred in the first seven days and 260 in the first ten days, thus leaving 27 cases (or 9·4 per cent.) which began after ten days from the date of the removal. During the year 591 cases of diphtheria were notified, of which 64 were fatal—a fatality not more than half that prevailing in Birmingham from 10 to 15 years ago. The fatality rate among the 351 cases treated at the City Hospital was 9·7, as compared with 12·9 in the remaining cases. Enteric fever was less prevalent in 1910 than in any previous year. Only 73 cases were reported, and the rate of mortality from this disease was 0·03 per 1000, as compared with the corresponding rate of 0·05 for the whole of England and Wales. As in previous years, mussels came under suspicion as the cause of infection of a considerable proportion of the enteric fever cases. In connexion with epidemic diarrhœa Dr. Robertson insists that in addition to infection which may be attributed to the agency of flies "we must not overlook the fact that the whole of the dust in courtyards, on housetops, and on roads in the poorer neighbourhoods is contaminated with organic matter of animal origin, and that this dirt is carried everywhere by air currents, so that clean, or relatively clean, households in one of the congested districts of the city will possibly get cases of diarrhœa through no fault of the householders themselves." The births registered during 1910 were 14,898, and 9439 births were attended by registered midwives. The cases in which midwives advised that medical help should be obtained under the rules of the Central Midwives Board were 674, as compared with 540 (out of 9238 births) in 1909, and 343 (out of 9244 births) in 1908. Special inquiries were made by the midwife visitor where stillbirths were reported. A considerable number were found to be full-time infants not in any way macerated, indicating that possibly with better recognition of the conditions the child might have been born alive. Visits to the homes of consumptive patients have been further developed. At present there are three visitors who devote the whole of their time to this work in the city, and a fourth visitor is shortly to be appointed. There are some 3000 to 4000 houses in which consumptives reside where visiting is considered desirable. The health department administers two sanatoriums—one at Salterly Grange, with 40 beds for early cases, the other at Yardley-road, with 50 beds, for educational

treatment. The experience of the latter shows that care is necessary to avoid frightening patients, who are capable of resuming their employment, from resuming work when they are fit to do so. Several brass-casters in 1910 objecting to the danger of workshop dust sought other occupation and failed to get it, and thus have had to put up with the worse conditions entailed by extreme poverty. A very instructive report by Mr. J. Malcolm, F.R.C.V.S., shows the steps which have been taken to eliminate tuberculosis from particular dairy herds on Professor Bang's method. Fifteen herds supplying Birmingham with milk, numbering 607 cows, were thus being dealt with at the end of 1910, and there is now in Birmingham a recognised supply of tubercle-free milk from tubercle-free cows. So long as consumers are willing to pay a slight increase in price over that of ordinary milk a supply will be provided equal to the demand, and "it would now appear to rest with the public whether the movement is to progress or not." Mr. Malcolm draws attention to the difficulty which at present exists in securing the slaughter of cows with tuberculosis of the udder, and considers that there would be great advantage in the payment of compensation, even if the scale was very small. One of many satisfactory results to be expected from the forthcoming extension of the Birmingham boundaries is that the slaughter-houses at present on the outskirts will be brought under municipal control and be dealt with by qualified meat inspectors in the same way as the slaughter-houses now in the city. It should be added that this report contains some instructive sections relating to house accommodation in Birmingham and the policy which has recently been adopted by the town council in dealing with slum areas.

Metropolitan Borough of St. Marylebone.—Dr. C. Porter comments on the sale of "pasteurised skimmed milk" in the poorer streets of Marylebone direct from the churn at the price of 2*d.* or 2½*d.* a quart. Having ascertained that this milk was unsatisfactory on bacteriological examination, and cautioned the vendor without producing improvement, Dr. Porter arranged for a churn of milk to be seized and the vendor prosecuted under Section 47 of the Public Health (London) Act. The magistrate condemned the milk on the report of the bacteriologist, who found in it enormous numbers of bacteria, including streptococci, and fined the vendor. Under the Sale of Food and Drugs Act a large increase of sampling took place during 1910, particularly in "informal" samples. A notable amount of milk adulteration and of substitution of margarine for butter was thus detected. Dr. Porter draws attention to the need for amending legislation to secure that all vessels from which skimmed or separated milk is sold should be properly labelled. "Catch of the season" chocolates—articles apparently intended to provide practical jokes—were ascertained to contain cayenne pepper, and were very properly dealt with as dangerous under Section 3 of the Act of 1875. An anti-tuberculosis dispensary was opened at 15, Allsop-place, in November, and was at work before the end of the year. Considerable additions have lately been made to the staff of the public health department in view of increased work in many directions. In referring to public "sanitary conveniences," Dr. Porter states that progress has been made in providing free accommodation for women, and that a "urinette" installed in place of a water-closet at Oxford Circus has been largely used. The receipts of the borough council for the use of public conveniences in Marylebone amount, it would appear, to some £3000 per annum.

Metropolitan Borough of St. Pancras.—In dealing with infantile mortality and vitality Dr. J. F. J. Sykes again insists on the importance of attention to the nutrition of the mother before the birth and during lactation. "Our medical service," he observes, "must be styled not infant consultations, but medical consultations for mothers and infants—mothers first." Some six years ago all leaflets advising methods of artificial feeding were destroyed, and the experiment of persistently preaching and teaching breast-feeding alone was begun. In 1907 the St. Pancras School for Mothers at 37, Charlton-street, Somers Town, was started to provide medical consultations for those mothers and infants unable to secure medical advice, dinners for mothers suckling their infants, and educational demonstrations in "mother-craft" both at the school and in the home. In 1910 this school for mothers extended its work to children up to compulsory school age, with a view of preventing the defects so commonly found in course of medical inspection of schools, and in this direction now coöperates with the "Day Nursery" at 26, Cartwright-gardens, and the "Nursery School" at 18, Crowndale-road. These institutions are supported by voluntary contributions and voluntary workers, but they appear to be closely associated with the municipal organisation established in connexion with the Notification of Births Act. Dr. Sykes considers it regrettable that Metropolitan borough councils have no power under Section 12 of the Children Act, 1908, which, he claims, would be more valuable in their hands than in those of the County Council and boards of guardians, not so much for the purpose of prosecution, as for enabling sufficient pressure to be brought to bear upon parents whom the health authorities find neglecting to procure necessaries for their children. As in former years, the report deals with a variety of public health questions which are handled on somewhat original lines in St. Pancras, and on the front page, for the benefit of any hostile critics, Dr. Sykes quotes from Captain Cook the following useful sentence: "Preventive measures are always invidious, because when most successful the necessity for them is least apparent."

REPORTS OF SCHOOL MEDICAL OFFICERS.

City and County of Norwich.—The report of Dr. H. C. Pattin brings out several points of considerable interest both from the medical inspector's present point of view and that of the school medical service in general. Many school medical officers will cordially re-echo the remark that routine inspection is apt to pall and welcome the suggestion of a change occasionally to more interesting special work. A table is given showing that out of 394 cases of defect of all kinds needing treatment 189 obtained this from private doctors, four from the school dental officer, and the rest from public institutions in the town. Difficulty has been experienced with regard to treatment, owing to the refusal of one of the town's institutions to accept a subscription from, and allot letters of recommendation to, the education authority on the ground that the inspecting authority ought to provide and pay for treatment, although the same institution receives subscriptions from boards of guardians who have the statutory obligation of providing treatment which education authorities as yet have not got. Pending the settlement of the dispute it is hard that children should be refused treatment which they would otherwise have obtained freely, merely on the ground that they have been inspected in a public school. The absence of a dental institution in the town has led to the founding of a dental clinic opened in November, 1910, which has been successful from the beginning. The cost of this is not to exceed the proceeds of a ½*d.* rate. Ringworm is treated at the municipal offices. A table of importance is that giving the "destination in life" of 830 boy "leavers." Why not girls also? In the better class schools 34 per cent. had no plans, in the mixed class 26 per cent., and in the poorer schools 45 per cent. The grouping of schools is according to the social circumstances of the children. Special centres have been established for mentally subnormal children, and Dr. D. M. Mathieson suggests segregation at both ends of the scale.

City of Sheffield.—Dr. Ralph P. Williams displays and illuminates his statistical returns by some bold diagrams which are of the greatest assistance in making large masses of figures rapidly intelligible. The figures given for "bad" nutrition are from 13,346 children 7·9 per cent., from 6354 senior scholars 9·5 per cent., from 6992 infants 6·5 per cent., and it is stated that the medical officer is guided "by the presence or absence of anæmia and by the condition of the skin and hair, together with the height and weight of the child." It is doubtful, however, whether height can be used safely, and anæmia itself is difficult to estimate precisely. In 126 children hæmic murmurs of the heart were found, these being due to anæmia. A large proportion of these do indicate bad nutrition, and may, perhaps, occur apart from obvious anæmia. It may be mentioned in this connexion that large numbers of free meals are given in Sheffield, last year 198,413 breakfasts being given as well as the meals for children in the special schools. In an appendix of the greatest value attention is called to the career of mental defectives after leaving school, which shows the great necessity there is that legal powers should be obtained for the permanent care of such children. Out of 24 cases only seven were in regular

work and four of these were doing the most unskilled kind of labour. The total average wage of the whole 24 only amounted to 49*s.* per week, the majority being returned as making nothing at all. A large proportion of these cases are subject to attacks of temper more or less severe, and there are vicious, offensively dirty, and hopelessly unimprovable cases amongst them. One girl of 19 was at the time of report six months pregnant and appeared incapable of understanding that there was anything the matter. It is clear that nothing but the offer of facilities—compulsion beyond that supplied by economic stress is not needed—for residence in segregation colonies can be considered to deal adequately with the problem. Meanwhile, raising the school-leaving age so as to tide over the critical 16 year old period would be of great help.

City of Exeter.—This report deals with a total number of children on the register of 7045. Of these no less than 85 per cent. found to have defects were treated, 10 per cent. had left either school or the city, and only 5 per cent. were definitely untreated. The small number dealt with makes this possible. The report calls attention to the value of hygienic advice as for mouth-breathing due to slight enlargement of tonsils and adenoids.

Barry Urban District.—Mr. W. Lloyd Edwards divides children for purposes of nutrition statistics into three classes —above normal, below normal, and bad. No girls are returned as bad, and only 0·06 per cent. boys, while below normal there are only 8·91 boys and 4·48 girls. The figures are derived from 1437 girls (3–14 years) and 1447 boys (3–14). Considerable difficulty has been found with the treatment of defects discovered by medical inspection, and it is reported that with regard to "some classes of defects very little, if anything, is done." The great bulk of cases of dental caries are not treated, and ear discharges, tonsils, and adenoids are largely uncared for despite all the measures taken, even in some ear cases exclusion. These difficulties have led Mr. Lloyd Edwards to prepare and publish as an appendix a "scheme for the establishment of a school clinic" in a form to meet the requirements of the Board of Education. It is proposed to hold the clinic on Wednesday afternoons and on Saturday mornings at the council offices, and here minor treatments will be given. These two sessions will be further utilised for special examinations (truant, mentally defective, and special schools), for cases referred from the school inspection or by teachers and attendance officers, for examination of infectious diseases contacts or convalescents before readmission to school, and for interviews with parents. Ear, nose, and throat cases will be treated by a special arrangement on one afternoon a week at the hospital, vision defects will be treated once a week at a centre fitted up in one of the schools, ringworm will be treated at the hospital in a room to be arranged for the purpose. It may be mentioned that the Barry Hospital is a general hospital built and maintained out of the rates (see 131–133 Public Health Acts, 1875) and that all local medical men who desire to become members are on the staff. This arrangement no doubt simplifies matters and prevents some of the friction which has elsewhere arisen, but the scheme shows in detail just how a school clinic can make use of existing institutions and just where it is necessary to supplement them.

Cardiff County Borough.—Dr. E. Walford, in a note on nutrition, brings forward a very important matter that seriously requires attention. He points out that the medical inspectors report that 10·7 per cent. of male infants are below normal in nutrition and 7·2 per cent. of female infants. For "leavers" the figures are: boys 10·9 per cent. and girls 4·5 per cent. The medical officer points out that it is clear that the difference between the condition of boys and girls must be due to some extent to the different standard of comparison taken by medical inspectors. Comparing townships and counties one with another, this discrepancy is still more obvious, and the need for a definite standard is an urgent matter. Private arrangements for treatment have been made in Cardiff with two ophthalmic surgeons and seven dentists.

Borough of Margate.—The number of children suffering from impaired nutrition amounted to 6·19 per cent., and in view of the good health conditions in Margate this can only be put down to insufficient and improper feeding and bad home conditions, but the lack of a definite standard makes all comparisons very difficult.

Notts County.—Dr. Henry Handford reports that 5·6 per cent. of boys and 5·6 per cent. of girls were found to be below the average in nutrition. A beginning in dental treatment has been made, and some advance is recorded in the number of children who obtain spectacles after being advised to do so. The greatest objection to wearing glasses is in the rural districts. The medical officer reports strongly against the practice of the school medical officer being expected to advise closure of a school, when the attendance has fallen below a certain point owing to the prevalence of infectious illness, merely in order to avoid loss of grant.

County Borough of Huddersfield.—Ringworm in Huddersfield is treated by the local chemists, but the question of a school clinic has been fully discussed and plans are under consideration by the finance committee. The statistics are presented with the addition of a height-weight coefficient for certain age-periods by which it is proposed to measure the value of the social work in Huddersfield in years to come. The authorities have been considering school cleansing. School floors, furniture, windows, and out offices are to be washed and scrubbed seven times a year instead of four as formerly.

County Borough of Southport.—Dr. G. C. Barnes has issued a most painstaking and detailed report analysing the statistics from individual schools. Whooping-cough is a notifiable disease in Southport, and the medical officer remarks that it is just as infectious in Sunday schools as in the day schools, whereas the education authority has no legal control over the former. Every case notified is visited, and every endeavour is made to trace the origin of the disease.

Devon County.—The number of children returned as badly nourished in the administrative county is: boys 0·96 per cent. and girls 0·66 per cent. The teachers in Devonshire weigh and measure the children, do the vision testing, and assist at the examinations. One school nurse has been appointed.

Cambridgeshire County Council.—The medical officer discusses the possibility of starting a rural dental clinic. Official encouragement of the formation of local care committees has also been discussed during the year, but it was decided that lists of the defects notified to parents should be sent to the managers of the schools after each inspection, with a covering letter, seeking to enlist the active sympathies of the managers. Where replies have been received they have been favourable in their terms, but the number of such acknowledgements has been small. In small areas the groups of managers are in such close touch with schools as to be virtually care committees.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7750 births and 5889 deaths were registered during the week ending Sept. 9th. The revised estimate of population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been 20·9, 21·2, and 20·6 in the three preceding weeks, declined again to 19·0 per 1000 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 16·6 per 1000, while in London during the same period the mean annual death-rate did not exceed 15·5 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 9·4 in Hastings, 10·6 in Barrow-in-Furness, 11·2 in Wallasey, and 11·8 in Derby and in Halifax to 27·9 in Liverpool and in Burnley, 28·5 in Aston Manor, 28·6 in Stoke-on-Trent, and 33·1 in Sunderland. The 5889 deaths from all causes in the 77 towns last week were 479 fewer than the number recorded in the previous week, and included 2087 which were referred to the principal epidemic diseases, against 2900 and 2617 in the two preceding weeks. Of these 2087 deaths from the principal epidemic diseases no fewer than 1915 resulted from infantile diarrhœa, 58 from whooping-cough, 40 from diphtheria, 29 from measles, 28 from enteric fever, and 17 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 6·7

per 1000, against 9·4 and 8·4 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had been 2553, 2714, and 2461 in the three preceding weeks, declined again to 1915 last week, and caused the highest annual rates of 10·9 in Stoke-on-Trent, 11·8 in Aston Manor, 13·2 in Grimsby, 13·5 in Merthyr Tydfil, and 13·7 in Burnley. The deaths referred to whooping-cough, which had been 68 and 58 in the two preceding weeks, were again 58 last week, and included 17 in London and its suburban districts, 8 in Liverpool, 5 in Birmingham, 3 in Manchester, and 3 in Hull. The fatal cases of diphtheria numbered 40, and were 5 in excess of the average in the six preceding weeks; 14 deaths were registered in London and its suburban districts, 4 in Liverpool, 3 in Newcastle-on-Tyne, and 3 in Coventry. The deaths attributed to measles, which had been 59, 54, and 34 in the three previous weeks, further declined last week to 29, which was the lowest number recorded in any week of the current year; 11 deaths occurred in London, 4 in Wolverhampton, and 2 each in West Bromwich, Nottingham, Liverpool, and Oldham. The deaths referred to enteric fever, which had been 11, 18, and 21 in the three previous weeks, further rose last week to 28, and was the highest number recorded in any week of the current year; 3 deaths occurred in each of the following towns: London, Portsmouth, Birkenhead, Wigan, and Hull. The 17 fatal cases of scarlet fever were 9 in excess of the number recorded in the previous week, and included 5 in London, 2 in Leyton, and 2 in Leeds. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had declined from 1442 to 1327 in the four preceding weeks, rose to 1349 on Saturday last; 217 new cases of this disease were admitted to these hospitals during the week, against 149, 132, and 168 in the three previous weeks. These hospitals also contained at the end of last week 761 cases of diphtheria, 231 of whooping-cough, 122 of measles, and 89 of enteric fever, but not one of small-pox. The 1510 deaths from all causes in London last week showed a decrease of 19 upon the number returned in the previous week, and included 95 which were referred to diseases of the respiratory system, against 85 and 73 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 152 and 147 in the two preceding weeks, rose to 171 last week, and 322 inquest cases were registered. The causes of 24, or 0·4 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, and in 54 other smaller towns. The 24 uncertified causes of death last week included 5 in Liverpool, 4 in Birmingham, and 2 in London.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710 291 persons in the middle of this year, 758 births and 536 deaths were registered during the week ending Sept. 9th. The annual rate of mortality in these towns, which had increased from 14·2 to 17·2 in the three preceding weeks, declined last week to 16·4 per 1000. During the first ten weeks of the current quarter the annual death-rate in these Scotch towns averaged 15·0 per 1000, and was 1·6 below the mean rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 11·1 and 12·2 in Paisley and Edinburgh, to 19·4 in Greenock and 20·1 in Aberdeen. The 536 deaths in the eight towns last week were 28 fewer than the number in the previous week, and included 105 which were referred to the principal epidemic diseases, against numbers increasing from 62 to 134 in the five preceding weeks; of these 105 deaths, 78 resulted from diarrhœa, 12 from whooping-cough, 8 from diphtheria, 3 from measles, 2 from scarlet fever, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 3·2 per 1000, the mean death-rate last week from the same diseases in the 77 large English towns having been 6·7. The deaths attributed to diarrhœa, which had increased from 33 to 113 in the five preceding weeks, declined last week to 78, and included 67 of infants under two years of age; 47 deaths occurred in Glasgow, 13 in Dundee, 6 in Aberdeen, 3 in Greenock, and 3 in Perth. The deaths referred to whooping-cough, which had been 12 and 10 in the two preceding weeks, were 12 last week, and included 4 in Glasgow and 2 each in Edinburgh, Dundee, and Aberdeen. The fatal cases of diphtheria, which had been 5 in each of the two preceding weeks, rose to eight last week, of which 3 were registered in Glasgow, 2 in Dundee, and 2 in Leith. The deaths from measles, which had declined from 11 to 4 in the five preceding weeks, further declined last week to 3, and included 2 in Glasgow and 1 in Greenock. The 2 fatal cases of scarlet fever were recorded in Aberdeen, and those of enteric fever in Glasgow and Aberdeen respectively. The deaths referred to diseases of the respiratory system in the eight towns, which had been 29, 41, and 24 in the three previous weeks, rose to 53 last week, and were 11 in excess of the number in the corresponding week of last year. Of the 536 deaths from all causes in the eight towns last week, 167, or 31 per cent., were recorded in public institutions, and 21 deaths were attributed to different forms of violence. The causes of 20, or 3·7 per cent., of the deaths in the eight towns last week were not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·4 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 598 births and 487 deaths were registered during the week ending Sept. 9th. The annual rate of mortality in these towns, which had been 19·4, 19·3, and 21·0 per 1000 in the three preceding weeks, further rose to 22·1 per 1000 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 18·0 per 1000; in the 77 English towns during the same period the mean annual death-rate was equal to 16·6, whilst in the eight Scotch towns it did not exceed 15·0. The annual death-rate last week was equal to 27·1 in Dublin (against 17·4 in London), 19·7 in Belfast, 25·2 in Cork, 16·6 in Londonderry, 17·7 in Limerick, and 26·6 in Waterford; whilst in the 16 smallest of these towns the mean annual death-rate did not exceed 16·0 per 1000. The 487 deaths from all causes in the 22 Irish towns were 25 in excess of the number returned in the previous week, and included 130 which were referred to the principal epidemic diseases, against 133 and 153 in the two preceding weeks; of these 130 deaths, 117 resulted from diarrhœal diseases, 6 from whooping-cough, 3 from diphtheria, 2 from enteric fever, 2 from scarlet fever, but not one from measles or from small-pox. These 130 deaths from the principal epidemic diseases were equal to an annual death-rate of 5·9 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 6·7, while in the eight Scotch towns it did not exceed 3·2 per 1000. The deaths attributed to diarrhœal diseases, which had increased from 104 to 141 in the three preceding weeks, declined to 117 last week, and included 105 of infants under two years of age. Forty-nine deaths occurred in Dublin, 44 in Belfast, and 8 in Cork. The deaths from whooping-cough, which had been 8 and 7 in the two preceding weeks, were 6 last week, and included 4 in Dublin, 1 in Belfast, and 1 in Cork. The 3 fatal cases of diphtheria, of which 2 were registered in Dublin, were equal to the average in the three preceding weeks. The 2 deaths from enteric fever were recorded in Belfast, and those from scarlet fever in Dublin and Belfast respectively. The deaths referred to diseases of the respiratory system in the 22 town districts, which had been 30 and 31 in the two preceding weeks, rose to 44 last week. Of the 487 deaths from all causes in the 22 towns last week, 137, or 28 per cent., occurred in public institutions, and 8 deaths were attributed to different forms of violence. The causes of 8, or 1·6 per cent., of the deaths last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·4 per cent. in the 77 large English towns, and was equal to 3·7 per cent. in the eight Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881: Fleet-Surgeon John Lloyd Thomas has been placed on the retired list with permission to assume the rank of Deputy Surgeon-General (dated Sept. 3rd, 1911). The following appointments have been notified:—Fleet-Surgeons: J. D. Hughes, J. McElwee, G. T. Bishop, and S. T. Reid to the *President*, additional, for Civil Hospital Course; E. R. D. Fasken to the *Devonshire;* A. X. Lavertine to the *Terrible;* E. A. Shaw to the *Antrim;* and B. F. Parish to the *Actæon*. Staff-Surgeons: J. H. L. Page to Devonport Dockyard; G. C. C. Ross to the *Vivid*, additional, for disposal; W. E. Mathew to the *Forth;* E. Folliott, A. J. Laurie, J. Verdon, L. M. Morris, R. H. Atkins, and A. W. Iredell, to the *President*, additional, for Civil Hospital Course; and E. D. J. O'Malley to the *Amethyst*. Surgeons: W. R. Harrison, R. F. MacMahon, G. H. S. Milln, A. D. C. Cummins, G. Moir, and J. McCutcheon, all to the *President*, for Civil Hospital Course; A. R. Davidson to the *Indefatigable;* R. H. St. B. E. Hughes to the *New Zealand*, additional, for Portsmouth Subdivision of Home Fleet; J. D. Keir to the *Venerable;* and G. W. M. Custance to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Captain Horace H. Kiddle is placed temporarily on the Half-pay List on account of ill-health (dated Sept. 2nd, 1911).

Colonel L. E. Anderson, principal medical officer of the Allahabad Brigade, has taken up duty at Bareilly as Principal Medical Officer of the Bareilly, Gharwal, and Dehra Dun Brigades. Lieutenant-Colonel J. C. Morgan, on promotion, has vacated the appointment of specialist sanitary officer in the Dublin District. Major J. Ritchie, from Multan, has been appointed to command the Station Hospital at Dalhousie. Major F. J. W. Porter, D.S.O., from the Military Hospital at Cosham, has taken up duty as Medical Officer in Charge at Lodmoor Camp. Major D. J. Collins has been selected for the appointment as Specialist Sanitary Officer at Dublin. Captain H. B. Connell has been ordered to Ireland for temporary duty, and on arrival will be posted to the Dublin District. Captain P. J. Hanafin has been appointed Specialist in Ophthalmology at Dublin in succession to Major D. J. Collins. Captain H. H. A. Emerson, at present doing duty at the Military Hospital, Clonmel, has been selected for the appointment of Adjutant of the Royal Army Medical School of Instruction, North Midland Division at Derby, with effect from Nov. 1st next. Captain J. H. Brunskill, Dublin, has been selected for appointment as Clinical Pathologist at the Curragh Camp. Sanction has been given by the War Office for an exchange of position on the Foreign Service Roster between Captain C. S. Smith and Captain R. N. Woodley serving at Mullingar and Bulford Camp, Salisbury Plain, respectively. Captain C. S. Smith will accordingly be required to embark for India for duty with the Northern Army about Jan. 27th next. Captain W. Bennett has been transferred from Naini Tal to the Station Hospital at Calcutta. Captain F. E. Rowan-Robinson from Colchester has taken up duty at the Military Hospital, Norwich. Captain P. Davidson, D.S.O., on completion of duty at the Royal Army Medical College, London, has been posted to the Aldershot Command for duty. Captain P. G. Hyde from Dublin has been placed in medical charge of Rathmore Camp. Captain J. W. S. Seccombe from Jhansi has been appointed to the Station Hospital at Nasirabad.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel H. C. L. Arnim has been granted leave of absence home from India for a period of two years. The services of Lieutenant-Colonel B. B. Grayfoot have been placed at the disposal of the Government of India by His Excellency the Commander-in-Chief. Major W. S. Willmore, on completion of special duty at the Central Research Institute at Kasauli, has been appointed Civil Surgeon to the Mirzapur district. Major T. S. Novis has been appointed Presidency Surgeon, Professor of Anatomy and Curator of the Museums at the Grant Medical College, Bombay. His Excellency the Governor of Bombay in Council has appointed Major R. W. Anthony on return from leave to be Civil Surgeon of Belgaum. Captain R. B. Nicholson has been appointed to the Medical Charge of the 36th Horse. Captain J. Husband has been appointed to the Medical Charge of the 30th Mountain Battery and Frontier Garrison Artillery. The services of Captain R. M. Barron have been replaced at the disposal of the Government of India by His Excellency the Commander-in-Chief. Captain G. A. Jolly, officiating civil surgeon, Mainpuri, has been selected to hold visiting medical charge of the Etah District. Captain M. S. Irani has been appointed Civil Surgeon of Bijapur District.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant John Leach to be Captain (dated May 18th, 1911).

Major William C. Beatley resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Sept. 9th, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the September issue of this journal Captain W. R. O'Farrell, R.A.M.C., and Dr. A. Balfour, director of the Wellcome Tropical Research Laboratories at the Gordon College, Khartoum, discuss Granule Shedding in Treponema Pallidum and Associated Spirochætæ. Lieutenant H. Stott, I.M.S., makes a contribution to the study of the Ætiology of Beri-beri, and Lieutenant W. E. Marshall, R.A.M.C., describes Experimental Kala-azar in the Grey Monkey of the Sudan. Some Observations on Body Temperature, made by officers specialising in physical training during their course at the Royal Army Medical College, are chronicled by Captain P. Davidson, D.S.O., R.A.M.C., and Captain N. Dunbar Walker, R.A.M.C. An interesting contribution is one from the pen of Major W. S. Harrison, R.A.M.C., who records a case of Chronic Bacillary Dysentery due to a hitherto Undescribed Bacillus. Bacillary dysentery, as the author points out, has been attributed at various times to many other members of the colon group besides the Shiga, Kruse and Flexner bacilli, but Major Harrison has been unable to trace any record of a case caused by a bacillus similar to the one which he describes. The patient rapidly improved after the administration of a vaccine made from the bacillus. Within the last few years the value of iodine as a disinfectant for the skin has been much discussed, and among the advocates of its use in this connexion is Colonel N. Autelo of the Medical Corps of the Argentine Army. In "A New First-aid Packet" he discusses the purposes of and need for a first-aid dressing on the battle-field, and describes his own dressing "packet," which contains a phial of tincture of iodine. The article includes a table giving the principal specifications of the first-aid packet as used at present in the organised armies of the world.

ACCELERATED PROMOTION IN THE ROYAL ARMY MEDICAL CORPS.

It has been decided that the accelerated promotion granted to captains of the Royal Army Medical Corps who pass their qualifying examination for promotion to major in the second class (six months' acceleration) and in the third class (three months' acceleration) will not be applicable to officers promoted to the rank of captain after Dec. 31st, 1908. This means, for all practical purposes, that accelerated promotion in the Royal Army Medical Corps becomes nearly impossible, as under 1 per cent. of officers ever qualify in the first class (12 months' acceleration), and now that acceleration in the classes in which men hope to qualify has been abolished, several hundred officers who came into the Army Medical Service hoping to obtain accelerated promotion if successful in their promotion examination have their hopes dashed to the ground. The Royal Warrant was carefully remodelled by Sir Alfred Keogh, K.C.B., during his tenure of office as Director-General of the Army Medical Service, and its present alteration appears to require some explanation from the members of the Advisory Board or the present Director-General.

ON Monday next, Sept. 18th, at 3 o'clock P.M., a series of living pictures illustrating life on the Oxo Cattle Ranches will be exhibited at the Model Oxo Factory, 43 to 51, Park-street, Southwark Bridge.

Correspondence.

"Audi alteram partem."

"COMFORTER" OTITIS MEDIA.

To the Editor of THE LANCET.

SIR,—The suggested relationship between ear disease and the use of the "dummy teat," outlined by Mr. W. H. Bowen in an article under the above heading in THE LANCET of Sept. 9th, p. 758, adds yet another charge to the long list of criminal indictments recorded against this instrument of torture. That the comforter should be tolerated in this age of hygiene is undoubtedly largely due to the example, the apathy, and the conduct of the medical profession. One distinguished children's specialist in London has, to my knowledge, advocated its use in his lectures to health workers. Further, I regret to say that I still occasionally see the Wimpole-street baby with a dummy in its mouth creating prospective work for the Harley-street throat specialist, and I have frequently heard my learned brethren argue that unrestrained crying is fraught with more serious consequences than sucking indiarubber teats. If gold rusts in this way what are we to expect of iron?

Although, I imagine, there are few who have taken a more active part in the crusade against comforters than I have myself, none the less I do not believe their chief offence is the introduction of septic matter into the mouth. I regard as more injurious the habit of sucking which it induces, for this soon becomes an undoubted "tic" and has subsequent consequences which are not easy to measure. Further, the constant pressure of the teat against the roof of the mouth and the associated muscular actions must, on purely mechanical grounds, tend to accentuate and aggravate the highness and narrowness of the palate, which is one of the characteristic tendencies of recent human evolution.

With Mr. Bowen I certainly believe that the use of the comforter contributes to the highly complex pathogenesis of adenoids and otitis media, but not only in the manner that he suggests. Every infant in the East-End of London has its comforter just as surely—indeed, more surely—than it has a tight binder round its abdomen, so that, in spite of Mr. Bowen's belief that a deduction with respect to the correlation between comforters and otitis media can be drawn from East-End experiences, I beg altogether to differ from him. All East-End infants have comforters, and nearly all have adenoids, but this is no proof that there is any closer correlation. For the last six and a half years I have kept a systematic record of the "tonsil and adenoids" history of every infant brought to my "infant consultations" in Marylebone. These records include the cases of nearly 1000 infants who have been kept under observation, in some cases for nearly two years, and in most instances for many months. My experiences derived from this source of information are that adenoids and enlarged tonsils, or at least their commencements, are exceedingly common during the first year of life, and that they are often sufficiently obstructive to require surgical removal. Both Mr. T. Jefferson Faulder and Mr. Rupert Farrant at the St. Marylebone General Dispensary, and Mr. W. G. Howarth at the Queen's Hospital for Children, have operated at my request on quite a number of infants under one year of age, and occasionally under six months. Only cases have been chosen for operation which have proved intractable to the routine methods of medical treatment, but the results in all cases have greatly encouraged me to have recourse to early operative interference. On the whole, I have found adenoids, enlarged tonsils and otitis media quite as common among Marylebone infants who, relatively speaking, seldom have comforters, as among Hackney infants who possess them without exception.

The typical adenoids, tonsils, and otitis history, of which I have over a hundred, is as follows. At about the third month of life the infant has a slight pharyngeal cough and running of the nose (an ordinary cold due to defective hygienic conditions and respiratory noxæ). The infection then probably extends to the Eustachian tube, and a small chain of enlarged lymphatic glands begins to develop from the mastoid process downwards. These glands continue to increase in size *pari passu* with the growth of the lymphatic hyperplasia of the naso-pharynx. After a time, usually from three to six months, evidence of distension of the middle ear begins to show itself by pain, crying, restlessness, rolling of the head (meningismus), and bulging of the membrane. With rupture of the membrane and otorrhœa the symptoms rapidly subside. Incision of the membrane greatly expedites matters, but the operation is troublesome to perform without an anæsthetic.

That naso-pharyngeal sepsis has its origin in a large number of cases at, or even before, the third month is quite indisputable, and this before mouth-breathing has become habitual or even occasional. Accursed instrument as the comforter undoubtedly is, this much must at least be said for it: it tends to promote nasal breathing by keeping the mouth closed in a perennial act of sucking.

I am, Sir, yours faithfully,

London, W., Sept. 8th, 1911. ERIC PRITCHARD.

THE RADIO-ACTIVITY OF SEA-WATER.

To the Editor of THE LANCET.

SIR,—I venture to supply data pertinent to the query contained in the letter of Dr. F. Hernaman-Johnson appearing in THE LANCET of the 9th inst.

That sea-water contains radio-active substances is undoubted owing to the measurements of Eve, Joly, and Knoche. These observers have made quantitative determinations of the amount of radium contained in a litre of sea-water. The quantity is exceedingly small, as is evidenced by the following numbers. Eve obtained water from the North Atlantic, and found a mean value of $0\ 9 \times 10^{-12}$ grm. of radium per litre—i.e., about one billionth of a gramme per litre. Joly has made determinations of the radium content of ocean water from various parts of the world, from which it is evident that widely different values are to be anticipated. The mean of a large number of observations by Joly is 16×10^{-12} grm. of radium per litre. It may be noted that observations of the radium content of river-water, those of the St. Lawrence by Eve and of the Nile by Joly, gave values about one-quarter of the values obtained by them for sea-water. Knoche from 12 observations of Atlantic water obtained a mean value of 17×10^{-12} grm. of radium per litre. Knoche points out that this quantity is about one-twentieth of that in a *weak* radio-active spring.

It is not within my province to offer an opinion as to the therapeutic value of radium, but one or two statements contained in the letter in question call for comment. Dr. Hernaman-Johnson bases his arguments for the therapeutic value of salt water being due to its radio-activity upon the assertion that salt water is not efficacious after it has been kept for three weeks. If sea-water owed its radio-activity only to the radium emanation dissolved in it, it is true that, on keeping, its activity would decrease to a few per cent. of its original activity in this time. But this is not the case. The measurements which I have cited were made upon samples of sea-water which in some cases were several months old, and proved the presence not only of the emanation but of the parent substance—radium itself. This being so it is clear that the amount of emanation in a sample of sea-water remains constant, for its spontaneous disappearance is balanced by its production from the parent substance.

As to the origin of this radio-activity, upon which Dr. Hernaman-Johnson touches, one cannot do better than quote the opinion of Professor Joly[1]: "Oceanic radio-activity is, most probably, in part referable to the denudation of rocks and the transport of the dissolved and suspended radio-active materials to the ocean. The considerable amounts of radium contained in deep-sea sediments, even from the most central parts of the ocean, suggests that much of the uranium reaches the sea in solution or in very fine suspension, and, in part, ultimately finds a resting-place among the oozes everywhere slowly collecting."

I am, Sir, yours faithfully,

SIDNEY RUSS, D.Sc. Lond.,
Beit Medical Research Fellow.
Cancer Research Laboratories, Middlesex Hospital, Sept. 11th, 1911.

[1] Philosophical Magazine, March, 1908.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—Your correspondent of Sept. 9th complains that the main issue of this discussion has been obscured by emotionalism. In whetting his wits on the sermon he loses sight of the text. The original query [1] had reference to "the legal and moral aspects of the case," and consequently every reply which ignores these aspects is irrelevant. If all expression of opinion upon ethical questions, though couched in sober phrase, be accounted "emotional," no doubt I for one must plead guilty, though even to please your correspondent I regret that it is beyond my powers to answer one question by replying to another. Possibly, in his opinion, all ethical considerations whatsoever are tantamount to rubbish, but if not I will endeavour to satisfy him not only by setting my view of the issue "in the dry light of intelligence," but by the use of the baldest Saxon.

The moral aspects of this case involve a few "emotional" factors, such as humanity, justice, and parental and professional ethics, which, since they determine, first, opinion, and, secondly, conduct, are not practically negligible. Let us bracket the first two together and deal with them seriatim.

1. Since the degenerate individual is an actuality and posterity a potentiality, is it humane and just upon the part of society to inflict injury upon anything *in esse* for the sake of otherwise obtainable benefits to something *in posse?* To be sure, your correspondent appears to argue that by injuring the individual we are in reality doing him a kindness in freeing him from a burden of anxiety and expense which he may possibly never contract, or may be prevented from contracting, without the necessity of submitting to an objectionable form of mutilation. I venture to submit that the patient himself would not agree with this sophism, and would find his dissent endorsed both by the laws of the land and by the consensus of public opinion.

2. If it be morally desirable that a father should procure the sterilisation of his epileptic child, surely there is something wrong with our present conceptions of the parental relation. If the true object of parental affection be the race rather than the individual, it would seem "in the dry light of intelligence" that a father's proper course with regard to the weaklings of his brood would be to treat them like kittens and put them in the bucket.

3. As to the professional aspects of the case I have already stated my opinion that a surgeon's duty is to his patient, and that the only legitimate use of the knife is to remove disease or to alleviate personal suffering; and the "light of intelligence," however "dry," only serves to bring this duty into greater prominence. Dispassionate ratiocination no more implies callousness than a cool head implies a cold heart

If I do not misinterpret his somewhat loose phraseology, your correspondent seems willing to allow to the unfit the option either of retiring to a colony for degenerates or of being sterilised and free. So far so good; but the alternative—if, indeed, it be seriously proposed—is in no way practicable. Can a child or a lunatic comprehend the terms of the option? There is also this further objection—namely, that unless the unfitness of the degenerate who has preferred sterilisation be of a minor order, in which case it would become a nice question whether there were any real need to sterilise him at all, he might possibly find himself both sterilised and secluded. It must be remembered that sterilisation, far from being a panacea for degeneracy, is a positive aggravation of it, and that the sterilised degenerate is thereby rendered even less fit than before to assume the control over his own actions. All sexual disabilities, whether congenital or acquired, have an injurious effect upon the mental organisation; and though one such condition may be less injurious than another, it is none the less true that they are all of them harmful. This statement holds both of vasectomy and of cryptorchidism. It is needless to inform anybody, save those who read only to misread, that no party to the present correspondence has sought to establish any further analogy between these two conditions.

This being a free country, I suppose that it is within the option of those void of understanding to mutilate themselves, by vasectomy or otherwise, in order to avoid this or that responsibility which nature has entailed upon them, but such practices are indicative of mental unsoundness, and are beacons to warn, not signals to direct. As there are more ways of killing a dog besides hanging him, so there are more ways of dealing with a degenerate besides mutilating him. The "dry light of intelligence" need not blind us to the existence of alternatives. That were more characteristic of the light of a dry intelligence. Let us beware lest we mistake the one for the other.

I learn with satisfaction that the sterilisation of degenerates is not yet legalised in Switzerland, and that Indiana still possesses the monopoly of this egregious enactment.

I am, Sir, yours faithfully,

BRYAN CHARLES WALLER, M.D. Edin., F.R.C.S.

Kirkby Lonsdale, Sept. 11th, 1911.

[1] THE LANCET, July 29th, 1911, p. 328.

THE CURIOUS HISTORY OF A SWALLOWED PIN.

To the Editor of THE LANCET.

SIR,—The interesting communications from Dr. W. Balgarnie and Dr. I. D. Chepmell, which have lately appeared in THE LANCET under the above head, remind me of two experiences of my own where the errant body was a needle.

Sixty years ago the late Dr. Lionel Beale was house physician at the King's College Hospital, and I had the privilege of acting as clinical clerk for the late Dr. Bentley Todd, under whose care a woman was admitted suffering from obscure gastric symptoms. Her case required and received constant and careful examination. One morning Dr. Beale discovered a small painful spot in the epigastrium, and a feeling suggestive of the presence of a foreign body. This was cut down upon and a small needle withdrawn without any difficulty. A day or two after another such appeared which I removed in a similar manner. During the ensuing four or five weeks we extracted between us 43 needles and three pins from the epigastric region.

At first the patient denied all knowledge, but when the collection increased she stated she remembered that years ago she had swallowed a packet of needles. On finding the pins, which had all lost their heads, we carefully examined the needles and found all imperfect, a few having lost their points, but most of them had broken eyes. On drawing the patient's attention to this fact and explaining to her that it was not usual to sell damaged needles, to say nothing of pins in a packet, she made the following statement. She had for years earned her living by fine needlework, and had been in the habit, on breaking a needle, of thrusting it into her stomach instead of throwing it away. I think from her generally neurotic condition this explanation was probably the true one. I believe the case terminated fatally soon after I lost sight of her. The collection was, I fancy, sent by Dr. Beale, with a note of the case, to the Museum of the Royal College of Surgeons of England.

Another case occurred some years after in my private practice as follows. Sent for one morning to see a child suddenly attacked the day before with acute pain in the knee, I found a fine healthy girl (3 to 4 years old), stated never to have had an ailment till yesterday, when she felt acute pain in the right knee but which soon passed off. I found the joint apparently normal, painless, with motion unimpaired and sound; during manipulation on pressing my finger over the internal condyle the child screamed with pain, and on more careful examination I fancied I detected a foreign body. I cut down and exposed a sharp point, seized it with forceps, and with some difficulty withdrew a large perfect carpet needle, which appeared to have transfixed the two condyles of the femur. The needle was about 2 inches in length, very strong and very firmly held by the tissues, and withdrawn with some difficulty. As a precaution I applied a splint and kept the child in bed for a day or two, but she never suffered the least inconvenience and was perfectly well at once. The pain was evidently due to the needle having shifted its position. The mother and nurse were both greatly exercised and could throw no light on the matter. There had been no upholstering in the house, for which kind of work such needles are chiefly used. There was no scar on the outside of the joint indicating the point of entry of the

needle, and until the day before my visit no suspicion of anything wrong. This is one of many experiences that in the course of a long practice have passed my understanding.

I am, Sir, yours faithfully,

EDW. LIDDON, M.D. Edin., J.P. (Som.).

Taunton, Sept. 7th, 1911.

THE TREATMENT OF TORTICOLLIS.

To the Editor of THE LANCET.

SIR,—I was interested to read in your issue of this week the article by Mr. Paul B. Roth on this subject and pleased at his protest against the various forms of retention apparatus so commonly recommended and still frequently employed. I would go even further and say that the exercises and manipulations which he employs are equally unnecessary. During the last few years I have operated on rather a large number of these cases and have gradually discarded almost all forms of subsequent treatment, whether by apparatus, exercises, or manipulations, and have been very pleased with the results. After division of the affected muscle I have the child kept lying flat on the back with no pillow for between two and three weeks, allowing free movement of the head, for I think the one thing that makes for a recurrence is allowing the child to sit up.

Under any circumstances relapses after operation for torticollis seem to be very rare, and I cannot call to mind a single case that has been bad enough to necessitate a second operation; in fact, the very good prognosis after operation is one of the several rather curious features of the affection. I entered somewhat fully into the subject in a paper in the Archives of the Middlesex Hospital, July, 1910, and Mr. Roth would see there how fully I am in accord with his own views as to the use of apparatus subsequent to the operation.

I am, Sir, yours faithfully,

Queen Anne-street, W., Sept. 9th, 1911. THOS. H. KELLOCK.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—May I trespass on your space to correct an inaccurate statement attributed to me in THE LANCET of August 12th, p. 474, by Mr. W.d'Este Emery, who says, "In THE LANCET of July 29th Major H. C. French states that it is impossible to carry out the Wassermann reaction *quantitatively* by any of the ordinarily suggested *modifications*." If Mr. d'Este Emery had read my article more carefully he would have observed that I quoted the *opinion* of Mr. Boas, an acknowledged authority on Wassermann's work.

I wrote that "Mr. Boas recently lays great stress upon the importance of carrying out all Wassermann's reactions in a *quantitative* manner—a method which is impossible in the case of all the ordinary suggested *modifications*. Mr. Boas obtained much better results and stated that the Wassermann reaction has not, and *will not, obviate the necessity for clinical observation* in syphilis."

Mr. H. W. Bayly, in THE LANCET of August 12th, p. 473, endorses my statement. He writes: "I am entirely in accord with Major French's quotation of Mr. Boas's opinion as to the superiority of Wassermann's original technique and the importance of *quantitative* estimations."

I am, Sir, yours faithfully,

Sept. 5th, 1911. H. C. FRENCH, Major, R.A.M.C.

THE PATHOLOGY OF PAPILLŒDEMA.

To the Editor of THE LANCET.

SIR,—In the notice in THE LANCET of Sept. 2nd, p. 700, on Mr. Leslie J. Paton and Dr. Gordon M. Holmes's paper on the Pathology of Papillœdema credit is given to these authors for originality in the hypotheses advanced for explaining the origin of this condition. I am, therefore, compelled to state that in this matter they have, no doubt unintentionally, omitted to acknowledge my work on this subject published in my book, "Glaucoma, an Inquiry into the Physiology and Pathology of the Intra-ocular Pressure," to which they do not refer except in the last three lines of their paper.

I am, Sir, yours faithfully,

Nottingham, Sept. 4th, 1911. THOMSON HENDERSON.

SANITATION AND THE KORAN.

To the Editor of THE LANCET.

SIR,—I note that, in the issue of THE LANCET of August 19th, p. 526, in your report of the discussion of Professor Simpson's paper on The Sanitation of Villages and Small Towns in the Tropics, with Special Reference to Efficacy and Cheapness," I am reported to have said, touching the utilising of the religion of the natives in advancing the standard of public health among them, that "the Khoran, unfortunately, gave no help whatever in this direction." This is the very reverse of what I said. What I did say was that there were very few principles of elementary sanitation for which support could not be found either in the Koran itself or in the teaching of the Muhammadan doctors.

I am, Sir, yours faithfully,

M. CAMERON BLAIR.

Royal Societies Club, St. James's-street, S.W., Sept. 6th, 1911.

THE CHOLERA EPIDEMIC.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

SINCE the date of my last letter on this subject[1] there has been a considerable extension of the cholera epidemic. It is now prevalent in many parts of Asia Minor and Mesopotamia, in Constantinople itself, in the Macedonian vilayets, and it has quite recently appeared in Mecca. It has slightly increased in Russia; it is still epidemic in Italy; and the infection exists, though scarcely in epidemic form, in certain places in France, in Austria and Hungary, in Montenegro, and in Persia.

Cholera in Russia.

The following are the latest returns of the epidemic in Russia:—

Week ending July 16th (29th)			35	cases,	12	deaths.
,, ,, ,, 23rd (Aug. 5th) ...			52	,,	22	,,
,, ,, ,, 30th (,, 12th) ...			71	,,	37	,,
,, ,, Aug. 6th (19th)			134	,,	57	,,
,, ,, ,, 13th (26th)			174	,,	79	,,

It will be seen that the figures are still rising. In the first week of the table the disease was confined to the governments of Samara, Saratof, Stavropol, and Astrakhan, and the town of Odessa. To these were successively added the governments of Simbirsk, Tambof, Voronezh, Ekaterinoslav, Kostroma, Moscow, and Yaroslavl, the territories of Kuban and Daghestan, and the towns of Baku, Novorossiisk, and Rostof-on-Don.

Cholera in Constantinople.

The latest weekly returns have been as follows:—

August 1st to 7th			181	cases,	100	deaths.
,, 8th ,, 14th			263	,,	139	,,
,, 15th ,, 21st			394	,,	213	,,
,, 22nd ,, 28th			200	,,	137	,,
,, 29th ,, Sept. 4th			324	,,	155	,,

The infection is widely spread through many parts of this city and its suburbs. Much alarm has been created by the occurrence of a large number of cases at Buyukderé, a village near the northern end of the Bosphorus, where the Russian Embassy and some legations pass the summer, and which is a favourite resort in the hot months for many of the inhabitants of the capital. Another "foyer" of the disease formed at Haskeui, a low-lying quarter near the tip of the Golden Horn largely inhabited by Jews. The above figures apply only to the civilian population of Constantinople; they would have to be considerably increased were the cases occurring among the troops also included. I refer below to this important question of the spread of cholera by troops returning from Albania.

[1] THE LANCET, August 19th, p. 538.

Cholera in Asia Minor and Mesopotamia.

The disease is on the increase in Smyrna, as shown by the following figures:—

Week ending July 30th	.....	27	cases,	18	deaths.
,, ,, August 6th	.....	18	,,	11	,,
,, ,, ,, 13th	.....	52	,,	37	,,
,, ,, ,, 20th	.....	122	,,	80	,,
,, ,, ,, 27th	.....	117	,,	63	,,
,, ,, Sept. 3rd	.....	188	,,	86	,,

This increase of the disease in Smyrna is attributed to the contamination of certain sources of water-supply. These sources have been ordered to be closed and others substituted for them, and it will be of interest to observe if this measure is followed by a marked subsidence of the epidemic. At Zunguldak, on the Black Sea, the disease still lingers among the coal-miners. Elsewhere in Asia Minor cholera is more or less prevalent at several places in the vilayets of Angora, of Sivas, of Konia, and of Broussa. The following are the latest returns from the Bagdad vilayet:—

From July 28th to August 4th	.....	27	cases,	15	deaths.
,, August 5th ,, ,, 11th	.....	7	,,	10	,,
,, ,, 12th ,, ,, 18th	.....	7	,,	4	,,
,, ,, 19th ,, ,, 26th	.....	10	,,	7	,,
,, ,, 27th ,, Sept. 2nd	.....	47	,,	25	,,

The majority of these cases have occurred at Amara, on the Tigris. Only a few have been seen in Bagdad itself, and still fewer at Kerbela. The disease still prevails at Basra, though it is decreasing, as shown by the following figures:—

From July 30th to August 3rd	...	31	cases,	24	deaths.
,, August 4th ,, ,, 9th	...	25	,,	18	,,
,, ,, 10th ,, ,, 15th	...	30	,,	20	,,
,, ,, 16th ,, ,, 25th	...	14	,,	9	,,
,, ,, 26th ,, Sept. 2nd	...	9	,,	8	,,

From Consular reports it may be gathered that the infection was apparently brought to Basra from Amara and Ezra's Tomb (Ozeir), on the Tigris, by labourers who come into Basra at this season with lighters of grain.

Cholera in Persia.

The outbreak of cholera at Mohammerah, mentioned in my last letter, has since extended considerably. At Mohammerah itself the following figures have been reported:—

Week ending July 29th	.....	2	cases,	2	deaths.
,, ,, August 5th	.....	9	,,	8	,,
,, ,, ,, 12th	.....	91	,,	76	,,
,, ,, ,, 19th	.....	53	,,	51	,,
,, ,, ,, 26th	.....	40	,,	33	,,

From Mohammerah the disease spread to Ahwaz, some distance up the Karun river. In the week ending August 12th 12 cases and 7 deaths were seen here; in the two following weeks there were respectively 47 cases with 51 deaths, and 49 cases with 45 deaths. The disease was also reported to have appeared at Abadan.

Cholera in Syria and Palestine.

A single case of the disease was recently reported from Damascus. Several imported cases have occurred on pilgrim ships in quarantine at the lazaret of Beirut, but none in the town. Single cases (apparently imported) have also been seen at Jaffa and Caiffa.

Cholera at Mecca.

Of still graver import than any of the outbreaks as yet recognised is the appearance, now reported, of the disease among the pilgrims at Mecca. It may be noted that the month of fasting—Ramazan—began on August 25th of this year. During the month good Moslems allow nothing to pass their lips between sunrise and sunset, and many of them make up for this fast by much feasting at night. The conditions thus brought about have always proved favourable to the prevalence of cholera; and this must especially be the case among pilgrims, doubly so among pilgrims in the holy town of Mecca itself, and trebly so in the droughty heats of late summer and early autumn. A severe epidemic of the disease in this year's Haj must therefore, unfortunately, be anticipated. An added danger lies in the fact that this year, it appears, the first day of Kurban Bairam will fall on a Friday; the pilgrimage will therefore be a Haj-i-Akbar, and may be expected to be attended by exceptionally large numbers of pilgrims. There are already signs that this will be the case.

The first intimation of the appearance of cholera at Mecca was contained in a telegram dated Sept. 1st, which stated that three Javanese pilgrims from Singapore, inhabiting the same house, had simultaneously fallen ill in the night with all the symptoms of cholera. The next day's telegram reported that 11 more suspected cases, with 2 deaths, had occurred since the previous night, and that 15 others had been recognised after death. These figures alone speak of a rapid extension of the disease among a particularly susceptible population.

Cholera in the Yemen.

Cholera appears to have been more or less prevalent in Hodeidah and other places in the Yemen (such as Loheia, Zeidieh, &c.) through the greater part of August. But at Hodeidah the outbreak is said to have come to an end on the 25th of the month.

Cholera in the Macedonian Vilayets and among Returning Troops.

As mentioned in my last letter, cholera has been prevalent among the troops recently engaged in the military operations in Albania. Cases and deaths in considerable, but not in very large, numbers have been reported from Ipek, from Scutari, from Monastyr, from St. Giovanni di Medua, and from Valona. In none of these places can the outbreak be described as severe; but, unfortunately, the troops returning thence to other parts of the country have been instrumental in spreading the infection far and wide. Many infected groups of soldiers arrived at Salonica with the disease amongst them. Some, but not all, were put into isolation camps in or near Salonica; but most of the infected groups appear to have been at once put on board transports and sent to their destination. The result has been that a series of deeply infected transports have recently arrived at Smyrna, the Dardanelles, and elsewhere. On some as many as 50, 100, 150, or even more, cases of cholera occurred during the journey of 24 to 30 hours, and large numbers of deaths were reported on their arrival. The Turkish lazarets have been filled to overflowing with these troops, and recently it has been found necessary, instead of sending them to the lazarets (which were never intended for troops), to land them on the shores of the Bosphorus, or elsewhere, and place them under tents in improvised quarantine stations. This movement of infected regiments from Salonica and elsewhere is, unfortunately, and in spite of energetic representations, still continuing. In spite of equally energetic representations it was fully intended to hold the autumn manœuvres this year in the Macedonian vilayets; but, fortunately, commonsense has at last prevailed, and it was officially announced on Sept. 5th that, owing to the cholera epidemic, these manœuvres had been countermanded.

Cholera in Montenegro.

On August 29th a telegram from Podgoritza reported that a few cases of cholera had been seen in the village of Zebdjé, in Montenegro. It was added that the disease had been present there during the preceding 15 days.

Cholera in Austria-Hungary.

On July 31st the Austrian Ministry of the Interior issued a statement to the effect that between July 23rd and 30th 12 new cases of cholera had been registered in the province of Kuestenland, of which 11 had occurred at Trieste and 1 at Capodistria. In the following week (July 31st to August 6th) there were 14 more cases at Trieste, which was declared infected. Between August 7th and 13th 5 cases with 2 deaths occurred at Trieste, 6 cases with 4 deaths in the commune of Capodistria, and 2 cases with 1 death at Muggia; all these places are in the province of Kuestenland. The totals for the Austrian Empire since May 24th were then put at 50 cases of cholera with 19 deaths. Since then the existence of the disease has been reported from Fiume and from Budapest.

Cholera in Italy.

The following are the latest official returns of the cholera epidemic in Italy. Between July 22nd and 27th the disease was present in many places in the Naples province, including Naples itself; and in a smaller number of places in the provinces of Avellino, Benevento, Caltanisetta Campobasso, Caserta, Catane, Girgenti, Livorno, Palermo, Rome (1 case

only, at Civita Vecchia), and Salerno. The totals were not quoted. The later bulletins give the totals for all Italy as follows:—

From July 27th to August 1st	...	803	cases,	320	deaths.
,, August 1st ,, ,, 6th	...	1039	,,	389	,,
,, ,, 6th ,, ,, 13th	...	1737	,,	624	,,
,, ,, 13th ,, ,, 20th	...	1701	,,	659	,,
,, ,, 20th ,, ,, 27th	...	1684	,,	599	,,

In addition to the provinces above named, the disease had appeared in those of Genoa, Messina, Potenza, Venice, Syracuse, and Trapani. On August 22nd there were as many as 22 cases in Rome itself; and this is ascribed to a certain infected milk-supply.

Cholera in France.

Marseilles has so far been the only town in France in which cholera has been known to occur during the present epidemic. In addition to the cases already reported there were 3, occurring in a lunatic asylum, and 1 suspected case in the town on August 10th. (The local papers were quoted as reporting 27 cases with 12 deaths in this asylum.) On the 11th 6 new cases were seen (of which 4 occurred in the asylum); on the 12th there were 2 cases and 1 death; on the 17th 3 more cases were reported; and again 3 more on the 19th. Finally, from the 20th to the 23rd 7 cases with 4 deaths were stated to have been observed. Since then no further information has been received here. It may be added that the appearance of cholera in Tunisia is rumoured, but no official confirmation of the rumour has yet been received.

Constantinople, Sept. 6th.

FRENCH MEDICAL OPINION ON THE BRITISH INSURANCE BILL.

(FROM OUR SPECIAL COMMISSIONER.)

(*Concluded from p. 405.*)

Paris.

To the French medical practitioner, as already explained, the free choice of the medical attendant is the ruling principle governing all the actions of the organised members of the profession. It naturally follows that the Mutualist or Friendly Benefit Societies have become the chief obstacle to the realisation of this principle. Consequently anything which in the British National Insurance Bill would either increase or leave in the hands of Friendly Societies or clubs powers over the medical profession stands condemned in the opinion of French medical men. Any recognition, therefore, by the Bill of what are termed "approved societies" is looked upon with suspicion. Of course, there is no objection to Friendly Societies as such. Indeed, if imitation is the sincerest form of flattery the British Friendly Societies have no ground for complaint, for the medical profession itself in France has followed their example. The society known as the Concours Médical and the Medical Syndicates, or Unions, of France have created a number of mutual benefit or insurance associations, which provide to their subscribing members (all medical men) assistance in case of legal prosecutions, of illness, or old age, and on their death bring help to their widows and children. This is, the French medical practitioners maintain, the proper function of Friendly Societies, and they recognise by imitation the usefulness of such organisations. The difference arises, however, when the lay committees governing the Friendly Societies take upon themselves to organise, not merely the funds that are to provide financial assistance to the sick, but the medical services, employing medical men as hired servants, and imposing them on the patients.

French Mutualist and British Friendly Societies.

In England, however, the question may be asked whether the French Mutualist movement in its relations with the medical profession is sufficiently analogous with the growth of Friendly Societies and medical aid clubs in England to provide useful points of comparison. Both spring from the same humanitarian movement, which is sometimes called the school, a more or less romantic school, of 1848. The help that the Friendly Societies aim to give used to be supplied by the ancient guilds or trade corporations. These gradually fell into desuetude in England and were abolished in France by the decree of the Constituent Assembly dated June 14th, 1791. Societies for mutual help were then only allowed on the condition that they did not contain more than ten persons belonging to the same trade. This so crippled any organisations of the kind that from 1794 to 1806 there were only 13 such associations in Paris. The law of the Empire of 1810 did not allow any sort of association if it consisted of more than 20 members, but the Republic of 1848 granted entire freedom of association, and the embryo societies that had existed previously now budded forth. Under the Second Empire the objects of French Friendly Societies were strictly limited to sick insurance, and their organisation was placed absolutely under the dependence of the Government. Even for the General Association of the Medical Men of France the Government appointed the president. Napoleon III. could not trust medical men to elect their own leader. But under the Third Republic the freedom of association was restored, and the law of 1884 gave legal standing to trade unions and similar associations. Many trades unions in France, as in England, have a medical aid organisation. A law, dated April 1st, 1898, regulates anew the position of Mutualist Societies. The subscriptions collected by such societies, the law says, should serve to pay for help in case of sickness, for old age pensions, for accidents, funerals, and for relief of widows and orphans. Such are the objects, and so far so good. If this were the whole of the law the medical profession would warmly approve of the enactment. Then there are clauses which say that by means of special receipts or special levies the societies may pay for the organisation of technical classes, of agencies to find work for the unemployed and funds to relieve the unemployed. This, too, is very well, so far as it goes; but Article II. of the law stipulates that all members shall have the right to the same advantages. Theoretically, this also seems quite fair, but in practice it is very unjust and injurious to the medical profession, for it seems that a member, however rich he may become, shall have an equal right to medical aid which was organised to secure medical assistance to persons of very limited means. Thus, in France, there is a legal sanction to the abuse or grievance which is a matter of such constant complaint in England. Exactly the same sort of abuse occurs in France, and causes the medical men to urge that Friendly Societies should organise only the provision of financial relief in cases of sickness, but that the organisation of medical relief should be left to the medical men themselves. Medical men in France have therefore welcomed the taking of the distribution of medical benefits under the British Insurance Bill out of the hands of the Friendly Societies.

The French "Approved Societies" and Social Hygiene.

Another analogy between the French and English systems rests in the fact that there are in France also "approved societies." There are three sorts of Mutualist societies. First, free societies, which govern themselves as they choose. These have only a civil status, they can own no corporate property, must obtain a special authorisation to accept a legacy, and are not very numerous or important. Second, *sociétés approuvées*, whose statutes must receive Government sanction. Their expenses or liabilities must be covered by receipts recognised as sufficient. They may possess landed property, they may house their members, and the local authorities must lend them gratuitously a hall in which they can hold meetings. They are freed from certain stamp duties. But, on the other hand, they must invest their funds in Government securities, French railway companies, and other approved stock. Three-quarters of their property may be invested in land. Other measures are imposed by law, all devised to secure the solvency of the approved societies, and to make sure that the members shall receive all to which they are entitled. The State and the local authorities give subventions to these organisations, so that they are more wealthy and stable than any other similar bodies, but they are under such strict supervision and control that they are neither self-governed nor independent. The third sort of Mutualist societies have a programme corresponding to that which the Local Health Committees have imposed upon them by the British Insurance Bill. They consist of persons who, impressed by dreams of social progress, entertain views and promote plans of action that go far beyond the scope of ordinary friendly societies. Their intentions are so good that they are recognised by the State as societies of public

utility, which is a great honour, but offers no financial guarantee. Social hygiene is one of their principal objects. Without interfering with existing sanitary authorities, they endeavour to stimulate the action of such authorities. They try to recruit and provide trained nurses for poor localities, and organize popular lectures on sanitation. They help to bring about congresses and to secure the success of public meetings. They start dispensaries against tuberculosis or alcoholism, and find money to establish sanatoriums. Altogether, they are very ambitious, but their means being limited their action has not given rise to so many complications as might be expected. Still there is a good deal in the object and aims of this third category of Mutualist societies that recalls the social hygiene programme of the Local Health Committees, though the British Insurance Bill goes further and confers greater powers of interference with local authorities, employers of labour, and owners of inhabited property than the French Mutualists possess.

Mutualist Finance and Medical Expenditure.

Though the medical profession looks upon the Mutualists with great suspicion and some apprehension, they are not nearly so powerful as the corresponding Friendly and Benefit Societies of England. It is true they are numerous, though not so numerous as might be imagined, when their orators declaim about their millions of supporters. The Mutualist Societies of France do not number quite two million men, rather less than half a million women, and a little more than half a million children. The grand total just exceeds the figure of three million members. There are also 424,000 honorary members—that is, members who do not participate in the benefits. But their total capital is not much more than £16,000,000, or about £5 10*s.* per head. Dr. Bolliet, of Lyons, at the recent Congress of Medical Practitioners, presented some remarkable reports on the subject; he showed that half the Mutualist Societies did not possess 50 members and would not be able to survive an epidemic or some unusual catastrophe. Yet it is precisely these weak and unreliable societies that offer most of the opposition and raise the loudest complaints when efforts are made to introduce the principle of free choice of the medical attendant. The fact is that the subscriptions raised are altogether insufficient. The average payment to the approved societies does not amount to more than 10*s.* per head per annum. To the free societies the subscription is about 1*s.* more. This shows a falling off, for a few years ago the average was at least 12*s.* a year. The subscriptions paid by the honorary members have also decreased about 10 per cent., and they were estimated at only 10*s.* 8*d.* a year. In Germany the money paid to insure a workman against sickness is considerably above £2 per annum. In these circumstances it is not surprising if the payments made by French Mutualist Societies to their medical attendants only amount to about £162,000 per annum, or less than 8*s.* per patient. The cost of drugs and medical expenses other than the remuneration of the medical attendant does not fall far short of 12*s.* per patient. This outlay has a tendency to increase, while what is given to the medical practitioner is an ever-diminishing quantity. Consequently the medical profession does not hold the Mutualists in the highest esteem, and when the latter make eloquent speeches about the great deeds they intend to accomplish and the social reform that will result, their medical critics cruelly suggest that the first and most urgent reform should be the payment of higher subsciptions.

How it is Proposed to Render Good for Evil.

In 1908 a meeting was held between the representatives of the National Federation of the Mutualist Societies and the Union of the Medical Syndicates of France. M. Loubet, former President of the French Republic, presided, and it was agreed that mixed committees should be created in each department to assuage the conflicts between the medical practitioners and the friendly societies. The result has not been encouraging, for no compromise could be effected, the medical profession standing firm on the principle of the free choice of the medical attendant. This system, they maintain, has for its natural consequence payment per visit and per mile. The medical practitioner, it is urged, should ignore the existence of Mutualist or other similar organisations. At most he must not deal with them except as a sort of banking or collecting institution, which, in exchange for a small commission, will guarantee the payment of the medical fees. He may also aid Mutualist Societies to check malingering or the unnecessary increase of expenses that would arise if a member called on his medical attendant too frequently. In some societies this is checked by compelling the members to obtain a special ticket which they must show the medical officer. As a small charge is made for the ticket the member is less likely to resort to medical advice unless he is in real need of such assistance. This is a very important matter. One of the evils from which a medical officer of a medical aid organisation has to suffer is that members make calls upon his services with absolute want of consideration. It does not matter to the member or to his society how often the medical officer is called upon. But if, as is proposed, the medical officer is paid for every consultation then it would matter very much indeed to them both. Any such abuse would be of financial advantage to the medical officers, for they would have so many more fees to receive. Now, although the Mutualist or Friendly Societies did nothing to protect the medical officer when he was the victim and was unnecessarily overworked, nevertheless the French medical profession generously offered to return good for evil, and declare their readiness to help in establishing a ticket or any other system that will prevent the Mutualist Societies against being mulcted by unscrupulous members who otherwise might extravagantly increase the cost of medical attendance. Further, where abuse is supposed to occur there would be no objection to the nomination by the Mutualists of a medical representative and expert to investigate the case, so long as he observed the medical etiquette in regard to consultations and did not interfere with the treatment of the patients.

Mutualists Accept the Free Choice of Medical Adviser.

In this great struggle the Mutualists are themselves gradually coming round to the views promulgated by the medical profession. As matters now stand, many of them will not consult the medical officer of their society. If they can afford it, they pay fees and choose the private practitioner they prefer, while many of the club doctors hardly receive more than £6 a year, and therefore are not at all worried at the prospect of losing their appointments. In Paris alone there are 50 medical officers of Mutualist Societies who earn so small a sum that they really do not care what happens, at least, so far as their money interests are concerned. It has been calculated that the medical officers in the service of the Mutualist Societies receive from 1*d.* to 6*d.* per consultation, and the members themselves are realising that this is no pay at all. If, as a consequence, the patients are only superficially examined and errors result therefrom it would be difficult to complain. This is so well realised that a number of French Mutualist Societies have now agreed to accept the principle of the free choice of the medical adviser. An agreement is then drawn up and signed between the society and the local medical union or syndicate. A tariff for fees, small operations, accouchements, &c., is decided on according to the financial position of the members of the Mutualist Society or trade union in question. Any practitioner agreeing to these terms is free to inscribe his name on the panel, and the members have the free choice of those who are thus inscribed. Such is the evolution in the terms of contract practice which is actually taking place in France. The French practitioners are naturally anxious that the great insurance scheme proposed for England should not contain any clause that might be interpreted as discouraging the efforts made in France, and made with some measure of success. They view, therefore, the recent amendments with much satisfaction.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Death of the Chancellor of the University of Bristol.

Mr. Henry Overton Wills, first Chancellor of the University of Bristol, died on Sunday, Sept. 3rd, at his English residence, Kelston Knoll, near Bath. For some years indifferent health had kept him in retirement, and he was in his eighty-third year. His fellow citizens have ample reason for keeping him in grateful remembrance, and it is barely two years since the freedom of the city was conferred on

him. It will be remembered that Mr. Wills in 1908 made the foundation of the University possible by his splendid gift of £100,000. In recognition of his interest in the project he was appointed Chancellor of the new University, and although his ill-health kept him away from the various University functions he always maintained a lively interest in everything concerning the University, as various messages testify. His eldest son, Mr. G. A. Wills, is treasurer of the University. At the funeral service held at the Cathedral the University was represented by the Pro-Vice-Chancellor, Professor J. Michell Clarke, and members of the staff; and the robes of the Chancellor's office were laid upon the coffin. Representatives were also present from the Bristol General Hospital and the Queen Victoria Jubilee Convalescent Home, institutions to which Mr. Wills had contributed most liberally.

Bristol General Hospital.

The half-yearly general board of the hospital governors was held on Sept. 11th. The president, Mr. Joseph Storrs Fry, referred in his opening remarks to the loss that the hospital had sustained through the deaths of Lord Winterstoke and Mr. Henry Overton Wills, and also to Dr. H. G. Kyle's motor-cycle accident, mentioned a fortnight ago in these columns. It is gratifying to be able to say that Dr. Kyle's condition shows some improvement. The work done by the hospital is increasing, both in the wards and among the out-patients, as compared with previous years. Mr. Herbert M. Baker, the chairman of the committee, said that the ordinary income had increased by about £200, and that the legacies had also increased. Ordinary expenditure was also, unfortunately, greater by about £600, mainly owing to the increased cost of housekeeping commodities. The extension fund amounts to £42,365, so that a balance of £2635 remains to be collected before the sum of £45,000 is realised. Mr. Baker said that the committee had delayed the beginning of the building of the new wing until it was reasonably sure of the requisite funds. The plans have already been drawn up. The committee has decided to increase the remuneration of the nursing and resident staffs.

Post-graduate Classes in Pathology at Bristol.

During the past summer the University of Bristol made a new departure in the post-graduate teaching of pathology. Professor I. Walker Hall gave a series of lectures and demonstrations to a class of about 20 practitioners at Frome. This class was so successful that it has been decided to hold similar courses at Dorchester and at Taunton during the autumn. A short course of practical demonstrations by the professor and demonstrators of pathology is also advertised to take place at the University during September and October.

A Case of Cerebro-spinal Fever in Bristol.

Recently a child died in Bristol from cerebro-spinal fever, apparently acquired during a holiday visit to the infected area in North Cornwall. No other cases have been reported as a result of this one, but the chairman of the health committee proposes to ask the council to give its sanction to the inclusion of cerebro-spinal fever and acute anterior poliomyelitis among the notifiable infectious diseases for a period of six months, if the Local Government Board approves.

Death of Mr. Henry Robbins Dew.

Mr. H. R. Dew, consulting surgeon to the Bristol Eye Hospital, died at his residence, Stanton Wick House, Stanton Drew, near Bristol, on Sept. 6th, in his seventy-eight year. Mr. Dew was born at Warwick in 1834, and afterwards came to Bristol, where his father was an attorney-at-law. His grandfather, Dr. James Dew, was a well-known medical practitioner of Bristol; his great grandfather was John Dew of Coleford, Gloucestershire; and the family have owned for many generations a manse at Coleford, in which it is said that Charles I. took refuge on one occasion. Mr. Dew received his medical education at St. George's Hospital, and qualified as M.R.C.S. in 1855. Six years later he obtained the L.R.C.P. of Edinburgh. He served in the Crimean war, and was staff assistant surgeon to Lord Raglan. On his return he commenced practice at Bristol, where he soon established a large connexion. He held several public appointments, being at one time honorary surgeon to the Bristol Eye Hospital, surgeon to the Deaf and Dumb Institution, the Blind Asylum, and the Lying-in Institution. About 12 years ago Mr. Dew retired from all active work and took up his residence at Stanton Drew, Somerset. The funeral took place at Arno's Vale Cemetery, Bristol, and was largely attended.

The Tiverton (Devon) Board of Guardians and Pulmonary Tuberculosis.

The Local Government Board has granted permission to the Tiverton board of guardians to treat "consumptives" in huts to be placed in the open ground of the workhouse infirmary, provided that the necessary precautions are adopted.

The Health of Devon in 1910.

The annual report of the medical officer of health for the county of Devon (Mr. G. Adkins), which has just been issued, states that during 1910 8709 births were registered, equal to a birth-rate of 19·2 per 1000, compared with 20·0 for 1909. The deaths numbered 5810, giving a death-rate of 12·8 per 1000, against 13·4 in 1909. The infantile mortality was 67 per 1000 births, against 76 for the previous year. The infant illegitimate death-rate was 17·6 per cent., against 7·1 per cent. for those infants born in wedlock. 1070 cases of disease had been notified, against 1470 in 1909, including 402 from scarlet fever with 8 deaths, 412 from diphtheria with 49 deaths, and 75 from enteric fever with 10 deaths. No case of small-pox was notified. 551 deaths were due to tuberculosis, including 416 from pulmonary tuberculosis. 453 deaths were caused by cancer.

Hospital Saturday at Newton Abbot (Devon).

As a result of the Hospital Saturday collections the sum of £194 has been handed to the treasurer of the Newton Abbot Hospital. This is £28 less than the sum allotted in 1910.

The Paignton Mortuary.

At a recent inquest held in Paignton, the medical man who performed the post-mortem examination complained of the state of the mortuary, which he described as scandalous and filthy. He added that it appeared to him "almost an insult to the dead to take them into such a horrible place." The coroner agreed with these remarks, and the jury added a rider to the same verdict, recommending the district council to erect a suitable mortuary.

Sept. 12th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Water-supply in Glamorgan.

WHILE certain parts of the county of Glamorgan, including Swansea, Merthyr, Aberdare, Pontypridd, and the greater part of the Rhondda valleys, have not been affected by the recent drought, there are other parts in which the conditions are more or less serious. The Cardiff supply, which is normally obtained from gathering grounds in the Brecknock Beacons, has had to be supplemented from deep wells owned by the corporation and situated at Ely, within a few miles of the town. From this source about a million gallons daily is available. The watering of gardens with hose-pipes has been prohibited in Cardiff, and the inhabitants have been asked to be as careful as possible in the use of water. Unless there is a sufficient rainfall during the next few weeks, it is anticipated that further steps will have to be taken to conserve the supply. The Swansea waterworks have now been completed by the construction of two covered service reservoirs, each holding two million gallons. The resources of the Swansea waterworks are capable of supplying nearly 70 gallons per head of the population daily.

The Housing Question.

In spite of the acknowledged lack of suitable working-class dwellings in many parts of South Wales, very few sanitary authorities have taken advantage of their statutory powers to provide such dwellings. Amongst the few that have done so is the urban district of Gelligaer near Merthyr. When proposing that the council should take action under Part III. of the Housing Act, 1890, a member of the council stated that in one street of 50 houses in a certain locality there were no less than 420 persons. He attributed the overcrowding to the high rentals which were demanded, so that two or three families were obliged to occupy one house.

Neath Rural District.

The conditions described by Dr. S. W. Wheaton, in his report to the Local Government Board on the sanitary circumstances and administration of the Neath rural district, are most discreditable to the local sanitary authority. The population of the district has increased from 29,000 in 1901 to over 42,000 in 1911, but in only three localities is there any systematic sewerage. In two of these the sewage passes untreated into the tidal river Neath, and in the third the proprietor of a colliery at his own cost has sewered 50 houses and constructed septic tanks and bacterial filters. In the greater part of the district liquid refuse escapes into streams, ditches, or roadside channels, or, after running in surface channels for some distance, soaks into the subsoil. Many of the houses drain into soakaway cesspools, with the result that the ground beneath the dwellings is becoming saturated with filth, which, as Dr. Wheaton very properly states, may have injurious effects for some time even after the premises have been properly sewered. The contents of the privies which abound in the district are removed by contractors, but in many instances the filth is buried in a hole in close proximity to dwellings, and so small is the area available for this purpose that it frequently happens that any attempt at covering it with earth is impossible. Few of the houses have water laid on to them. In most instances it has to be carried by hand from standpipes which are 50 to 150 yards and upwards distant. The smaller sources of supply are liable to pollution. Three years ago an outbreak of typhoid fever involving 26 cases was due to the use of water from old mine workings which had become polluted by surface soakage. Dr. Wheaton recommends the council to proceed at once with the work of sewering the most populous parts of the district, and to dispose of the sewage in such a manner as not to pollute the watercourses. He also advises the council to undertake the scavenging of the district itself in place of the present system of contracting, to provide an efficient hospital for the isolation of infectious diseases other than small-pox, and to give more attention to the condition of the dairies and cowsheds in the district.

Sept. 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Donation to Aberdeen Dispensary.

IN response to an application from the directors of the Aberdeen Dispensary the town council has decided to give a donation of £750 to the institution. It was pointed out that over 15,000 cases had been dealt with in the dispensary last year. Many such cases, in the opinion of the committee, should have been treated at the Royal Aberdeen Infirmary, but a large number took advantage of the institution who were quite able to pay for medical advice and medicine. In view of the fact that the dispensary did a great amount of good to the poorer classes of the community, and also that the Lord Provost had intimated that if a liberal donation were given by the town council he could see his way to get a sufficient sum to clear off the present debt of £5000, the committee considered it was justified in recommending the council to give a donation of £750. The institution has not received a donation of any kind from the council during the last 60 years.

Aberdeen Infirmary and Water Charges.

The present charge for water made to the Royal Aberdeen Infirmary was fixed in 1892, and is covered by the moderate sum of £10 per annum. The water committee of the Aberdeen town council considers, however, that since then circumstances have materially altered. From the information before the committee it appears that the quantity of water now used in connexion with the Royal Infirmary amounts to about 14,000,000 gallons per annum, of which one-fourth is used for other than domestic purposes, such as steam heating, mechanical ventilation, hydraulic lifts, laundry, &c. The terms upon which the Aberdeen town council supplies water to public institutions within the city have been under consideration, and after Nov. 30th it is proposed that the infirmary should pay for its water on the following terms: (1) For the water used for the ordinary purposes of the infirmary, such as steam heating, mechanical ventilation, hydraulic lifts, &c., at the rate of one-fourth of the ordinary rate for supplies by meter within the city, as such rate may be fixed from time to time by the council; (2) for the water used for generating steam for electricity, the ordinary rate for supplies by meter within the city. On Sept. 5th a deputation of directors waited on the water committee with reference to the proposed change, when the matter was remitted to the water engineer to bring up a report upon the amount of water used by the infirmary and for what purposes; upon this the water committee promised to reconsider the whole matter.

Montrose Royal Asylum: Proposed Reduction of Attendants' Hours.

At the monthly meeting of the managers of Montrose Asylum and Infirmary Board held on Sept. 6th, a motion to the effect that the hours of the attendants at Sunnyside Asylum be reduced, and the principle of superannuation approved of without the intervention of Parliament, was unanimously carried. It was decided, however, to allow the matter to lie over until the result of the approaching conference on the Asylum Officers' Employment and Superannuation Bill is learned, after which it will be remitted to a special committee for consideration and report.

Arsenic Poisoning at Lamlash.

Last week, in the Sheriff Court at Rothesay, an inquiry was made into the mysterious epidemic of sickness which broke out at the end of April in the village and district of Lamlash in the island of Arran, and resulted in the death of a boy, the other sufferers all recovering after more or less severe illnesses. Investigations showed that death was due to arsenical poisoning, and that it was caused by the eating of a scone made in the bakery of a local firm. The firm instantly took steps to trace the poison, and in this they were assisted by the police authorities and prominent analysts. Arsenic in alarming quantities was found in samples of scones taken from the same batch as that from which the scone eaten by the child was taken. In the course of the evidence it was stated that one scone alone contained enough arsenic to kill three persons. Exhaustive inquiry and analyses of all materials used in the bakery demonstrated that these were all perfectly pure. This led to the belief that the poison got into the foodstuff while that material lay overnight in the prepared state ready for the beginning of the morning's baking operations. The various employees of the firm, as well as the sole partner, were unable to offer any opinion as to how the scones became tainted. The sheriff, in addressing the jury, said the poison could not have found its way accidentally into the scones. He spoke highly of the manner in which the baking business was conducted, as appeared from the evidence, and also of the assistance rendered by the firm and the employees to the authorities in their investigations. He counselled the jury to return a verdict leaving everything connected with the case open. It was then possible for the Crown to take steps subsequently if that course was found justified. The jury returned a simple verdict that the child died from poisoning by arsenic, adding that they believed the firm to be entirely free from blame in the matter.

Dunoon Convalescent Homes.

The forty-second annual report of the directors of the West of Scotland Seaside Homes, Dunoon, has just been issued. During the past year 4993 patients were admitted, exclusive of children under two years of age. Of these, 4690 were restored to health, 173 relieved, 112 did not improve, 1 died, and 148 remained in the homes. The total number of persons admitted since the homes were opened in 1869 was 135,179. These homes undoubtedly fulfil a very useful function in admitting patients not fit for their work and not yet ill enough to be admitted to hospital. The majority of the male patients during the year were skilled workmen, while young mothers and warehouse and factory girls formed the majority of the female patients. The ordinary income for the year amounted to £7581 and the ordinary expenditure to £6607.

Medical Officer's Report anent Ythanwells and Corse Schools.

The Ythanwells school board met on Sept. 2nd, when the chief medical officer's report on the schools was submitted. In it the attention of the school board is drawn to the condition of the playground of the Ythanwells school, as

follows: "The playground was in a very bad condition, and was more like a bog than a playground." Of the Corse school it is said: "The heating of the senior class-room is insufficient; there are no shelter sheds for the children; and the desks in the infant school are quite insufficient and ought to be replaced by up-to-date ones." Commenting on the report, the board felt that if the recommendations were to be carried out it would cost several hundreds of pounds. With regard to the heating of the senior class-room at Corse, it was pointed out that the board had divided the schoolroom by a partition and had had an extra fireplace put in, so that in the place of the one fireplace, which had been deemed sufficient for many years, there were now two. With reference to the playground at Ythanwells, the board took exception to its being called a bog, and considered it satisfactory. After discussion the chairman proposed that, in view of the state of the school fund and the small and steadily decreasing valuation of the school district, and the ever-increasing school rate and demands of the department, involving additional heavy expenditure, the school board take into consideration at a future meeting the discontinuing of Ythanwells as a school district, under the provisions of Section 22 of the Educational (Scotland) Act, 1908; and alternatively, that an all-round reduction of salaries be considered, so as to keep the school rate at a reasonable level. The meeting agreed to have up-to-date desks supplied to the infant department at Corse school.

Sept. 11th

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Lunacy in Ireland.

IT is terrible to note that whereas in 1880 there were only 250 insane per 100,000 population in Ireland, the proportion has continuously risen (though less markedly in the past few years) until, according to the recent report of the Inspector of Lunatics on Jan. 1st, 1911, the figures reached 558 in each 100,000.

Post-graduate Classes at Trinity College, Dublin.

The autumn post-graduate medical course for 1911 will begin on Sept. 25th. The course will be conducted on similar lines to those of past years. Instruction will be given in the various departments of medicine and surgery, and particular attention will be paid to special subjects, such as ophthalmology, laryngology, and dermatology. There are also classes in X ray work and cystoscopy. The course is primarily intended for general practitioners, and the aim of the teachers is to make the demonstrations as practical as possible. The time-table is so arranged that each member may attend all the classes. Work generally begins at 8.30 A.M. and is continued with an interval for luncheon till 5.30 P.M. The social side has not been entirely overlooked, as arrangements have been made by which a limited number of members of the class can reside in College rooms and dine in hall. This privilege is open to all members of the class as freely as to graduates of the University. A complete syllabus may be had on application to the honorary secretary.

Flies and Disease.

Sir Charles Cameron, medical officer of health of Dublin, has persuaded the public health committee to pay for the destruction of flies. Paper bags have been distributed, each of which is capable of holding some 12,000 flies, and the committee pays a few pence for each bag returned full of dead flies. This seems to be attacking the fly nuisance from the wrong end, for, as a correspondent points out in the daily papers, if the streets, lanes, and courts of the city were kept clean there would be comparatively few flies to deal with. In spite, however, of much criticism, the scavenging of Dublin is still very imperfectly performed. Meantime the death-rate is 27·6 per 1000.

Health of Belfast.

Advanced copies of the annual report of Mr. W. H. Bailie, medical officer of health of Belfast, have just been issued dealing with the year 1910. It is a pity this report is belated, as the population of Belfast, on which the vital statistics are based, is taken as that of the old approximate figures of the Registrar-General, 391,167, while the real figures, as given three months ago—after the Census of 1911—are 385,492; that is, the actual population of Belfast is nearly 6000 less than the estimated one. Taking the figures as they are given in the report, the natural increase of population—i.e., the number of births in excess of deaths—was 3604, being 268 less than in 1909, and 172 less than the average for the ten preceding years. The birth-rate of Belfast, like that of most other large cities, shows a steady and continuous decrease from 33·4 per 1000 in 1881 to 27·8 per 1000 in 1910. 7284 deaths from all causes were registered; which is equivalent to 1 in 53, or 18·6 per 1000 of the population, and is 0·4 higher than the rate in 1909, but 1·8 below the average rate for the ten years 1900–1909. The number of deaths from zymotic disease was 1073 (562 in excess of those in 1909, and 267 in excess of the average for the ten years 1900–1909). The rate (2·7) is 1·4 per 1000 higher than in 1909, and 0·5 higher than the average for the preceding ten years. This increased zymotic mortality is due to an epidemic of measles from which 504 deaths occurred, corresponding to a rate of 1·3 per 1000. There is a reduction in typhoid fever (only 18 deaths occurred in 1910), only one death occurred from typhus fever, and although 734 cases of scarlet fever were notified (there being an epidemic which began in October, 1909, and continued during 1910, largely among children of school age) only 18 died, a mortality of 0 04 per 1000. Diphtheria caused 27 deaths out of 233 cases notified, a mortality of 11·1 per cent. More than half of the cases of puerperal fever notified (16) occurred in districts where the practice of unqualified midwives is most prevalent. Eleven of the cases were attended by "handy women," and in only two of these 11 was a medical man in attendance from the beginning. Nine deaths occurred. It is hoped that the clauses in the contemplated Belfast Corporation Bill dealing with this subject will put an end to such evils, or at least will greatly mitigate them. 259 deaths (46 in excess of 1909) occurred from whooping-cough, the annual rate of mortality being 0·6 per 1000 of the population, while there were 504 deaths during the year from measles, being equal to a rate of 1·3 per 1000. This is almost the highest rate for 30 years in Belfast, the exceptions being the years 1885, 1890, and 1894, and the epidemic was prevalent all over the city. 241 deaths were due to diarrhœa. 929 cases of tuberculosis were notified pursuant to the Tuberculosis Prevention (Ireland) Act, 1908, and in addition 244 cases were notified voluntarily. 825 deaths occurred in 1910 from tuberculosis, as compared with 811 in 1909, the rate in both instances being 2 1 per 1000 of the population. It is unfortunate that the disease seems not to be decreasing in Belfast. In reference to infantile mortality, the rate was 143 per 1000 births (1553 deaths), as compared with 139 (1510 deaths) in 1909; figures showing an increase of 4 per 1000, which is very disappointing. It is unfortunate that practically two-thirds of the milk-supply of Belfast is produced in districts outside the city, which are beyond the jurisdiction of the health authorities. Attention is again drawn to the abominable double-tenancy houses, and the report advises "the erection of specially designed houses where one or more rooms can be let to people who are unable to pay more than from 1*s.* to 2*s.* per week for rent," adding that power should be "granted to the local authority enabling them to prevent owners letting houses to more than one family where sanitary conveniences are not provided for each letting." This annual report on the health of Belfast for 1910, though less elaborate and exhaustive in tables, diagrams, and in comment than some of previous years, is a valuable document. It occupies 157 pages, as compared with 230 in the report of 1909 and 198 pages in that for 1908. An index would have been a decided improvement.

Dungannon Workhouse.

As a result of a recent Local Government Board inquiry at Dungannon workhouse, that Board state that, in their opinion, the hospital arrangements require the careful consideration of the board of guardians with a view to their improvement, and that measures should be taken to remedy defects which have been shown to exist in the management of the infirmary.

Death of William Twigg, M.D. R.U.I.

Dr. William Twigg died on Sept. 11th, after a very long illness, at his residence, Northland-road, Dungannon. The

deceased gentleman, who had attained an advanced age, was a member of an old county Tyrone family. Qualifying in 1861 as L.R.C.S. Irel., he took the M.D. of the Queen's University of Ireland in 1862, and immediately began practice in Dungannon. In 1864 he was appointed medical officer of the union workhouse and fever hospital in that town, a position he held until his death. He had also been Surgeon-Lieutenant-Colonel of the Mid-Ulster Artillery for many years, retiring only in 1901, with permission to retain his rank and wear his uniform. The deceased gentleman had been a useful member of the old board of Dungannon town commissioners, and often acted as churchwarden and select vestryman in the local parish church. He had a large private practice and was greatly respected. He was buried in Dungannon on Sept. 13th.

Death of Judge McIlroy, K.C.

Great regret has been expressed on all hands at the sudden death of Mr. Robert McIlroy, K.C., recorder of Belfast and county court judge for Antrim, which occurred from the rupture of an aneurysm on Sept. 6th. As the judicial authority before whom cases of workmen's compensation were tried, he had much work to deal with in a great city like Belfast, and his decisions gave the utmost satisfaction not only to workers, employers, and lawyers, but also to medical men who appeared before him. His knowledge of law and his care and patience were supplemented by sound sense and humour. He was a distinguished former student of Queen's College, Belfast, and at the last annual dinner of the Ulster Medical Society he was one of the invited guests, and made a very able speech.

Sept. 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cremation.

THE cholera epidemic, which, starting in the East, has extended to this country, has given rise to animated and wordy discussions with regard to cremation. The partisans of cremation regard it as the sole means of securing by one procedure both the disposal of the bodies and safety from ultimate contamination of the soil. Its opponents, however, raise many objections, of which the principal one is that incineration, in destroying the corpse, destroys also every trace of poison, and thus promises immunity to criminals. In support of their case they cite arsenical poisoning, a condition that presents all the symptoms of cholera. If the bodies were cremated, toxicological investigations would become impossible in such cases. On the other hand, in the case of an accused party, or even of one suspected of this crime, earth burial would leave it possible for the accused to prove his innocence, whereas cremation would make it impossible to dissipate entirely the suspicion that always clings to the accused. Those who attach weight to this objection demand, therefore, that every cremation should be preceded by a necropsy. But here a fresh difficulty obtrudes itself, in that a necropsy in cases of poisoning offers no precise data unless accompanied by a toxicological examination, which may require three months. Consequently, a law which entailed a necropsy with a toxicological examination prior to cremation would necessarily render cremation impossible, so that such a law would be equivalent to a prohibition of cremation itself. Attention has therefore been centred on searching for a means capable of affording a sufficient guarantee without imposing too great obstacles to the practice of incineration. M. Sicard of Marseilles, who has paid special attention to this question, has made experiments on the humours of the eye, the bile, the urine, and the cerebro-spinal fluid, and has found the quantity of poison present in the eye to be even greater than that found in the other media of the body. If 30 drops of Fowler's solution are injected into a rabbit weighing 500 kilogrammes, 10 drops every eight hours, and the animal is killed eight hours after the third injection, the quantity of arsenic recovered M. Sicard finds to be as follows: in the brain, 0·3012 mg.; in the kidneys, 0·024 mg.; in the liver, 0·06 mg.; and in the media of the eye, 0·071 mg. M. Sicard, then, proposes to remove by aspiration from a corpse intended for cremation the following physiological body fluids: the aqueous and vitreous humours, bile, urine, and cerebro-spinal fluid. The fluids should be kept in small phials, which can be placed in the funeral urn or the box intended for the ashes. Thus important evidence will be preserved, so that practically an exhumation can be made later if necessary. At the present time, says M. Sicard, the use of only the bile and the urine is to be recommended, for it is difficult to induce the family to agree to meddling with the eyes; and, on the other hand, researches demonstrating the passage of the substances absorbed into the cerebro-spinal fluid in the normal condition are not sufficiently numerous to justify the drawing of any decided conclusions in so grave a question. A part of the substances taken into the organism is recoverable from the bile, and the kidneys are the most active and powerful agents in the elimination of poisons. Nearly all poisons pass off in the urine, and for many of them it is the principal channel of elimination. The urine could be collected from a corpse by means of an aspiratory puncture with the kind of aspirator used in lithotrity, or recourse could be had to aspiratory puncture of a vein, which would permit of obtaining a certain amount of blood or of sero-sanguineous fluid. But M. Sicard prudently adds that no experiment should be accepted as definitive before the advantages that he claims for it have been confirmed by other authors.

The International Sanitary Conference, 1911.

The International Sanitary Conference to revise the provisions of the Convention of 1903 to prevent the invasion and propagation of plague and cholera will take place at Paris on Oct. 10th next.

Sept. 12th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The New Medical Act.

THE work of the Union of the Austrian Medical Corporations was concluded a few weeks ago, and the outcome in the shape of resolutions has now been brought to the notice of the Government. The paramount demand of the profession is, that before the final framing of the proposed new Medical Act (Aerzte-Ordnung) practising members of the profession should be asked for their opinion, and not only medical officers of health, who with us are somewhat in the position of Government officials. The profession demands that compulsion to practise shall be abolished as it is useless to the public and a menace to the profession, and that doctors of medicine shall be made independent of lay opinion and lay judgment in all affairs pertaining to the practice of medicine. The profession also protests against being placed in the dilemma that one law demands from its members absolute professional secrecy, whilst another clause of the same law makes this secrecy illusory. They demand that the new law should abolish Section 359 of the present Civil and Penal Code, by which a medical man is forced in certain circumstances to give information against a patient who has sought his professional help. Such a law makes the medical man act the part of a police spy—a position against which the entire profession vehemently remonstrates. The confidential nature of the relations between the medical adviser and the patient must be carefully guarded by the new law, as the continuance of professional secrecy is of the highest importance to the public, the State, and the medical practitioner.

Use of Antivenomous Serum in the Army.

In the southern parts of the Austrian Empire there are several kinds of poisonous serpents, and the soldiers stationed in these districts are frequently bitten; last year four men lost their lives and seven were seriously indisposed from this cause. The chief medical officer of the army corps stationed in this part of Austria has recently ordered the use of Calmette's serum against serpent-bites, and a fairly large stock of it has now been issued to each regiment in the south. The men and the medical officers are instructed how to use it, and regular inspections of the stock, as well as lectures on the natural history of the poisonous kinds of serpents, are provided for. In addition to the serum, the various appliances necessary for its proper application have

been supplied to the army hospitals. Much reliance has hitherto been placed on the treatment of such injuries by alcohol and the application of permanganate of potash. The present unusually protracted period of hot, dry weather has been very favourable for the multiplication of serpents in the localities infested by them, so that the extra precautions were not superfluous.

The Austrian Society for the Prevention of Diseases.

A society for the prevention of diseases and epidemics (Gesellschaft zur Bekämpfung von Volksseuchen) has been founded in Austria, and will act in concert with the Public Board of Health and the Sanitary Department of the Ministry of the Interior. Its aims are to supplement the endeavours of the public authorities in combating diseases, to improve the general circumstances of patients and their families belonging to the poorer classes, to provide adequately trained attendants for the care and nursing of patients during epidemics, and to organise medical help and hospital accommodation in non-epidemic times. The society will also encourage investigations relative to the spread of diseases, as well as their prophylaxis and treatment, and will, as far as possible, make the general public acquainted with the results of these scientific researches. The society will endeavour to improve our knowledge not only of the so-called epidemics, but also of all diseases which prevail extensively among the population. All infectious diseases, including sexual diseases, will therefore receive attention from the society. The necessary funds are to be obtained by lotteries, by "hospital days," by collections, by charitable grants, and by Government subsidies. The present intention is that the scientific part of the work shall be divided amongst all practitioners in the country through the instrumentality of the local medical unions and councils. It is thought possible that an international society for the study of epidemic diseases may in the course of time be called into existence. The present menace of cholera, which threatens the whole south of Europe and also all the commercial centres of the civilised world, is a valuable instigation to the task of the society, in so far as it shows that much good work may be done within the limits of a reasonably restricted programme.

The Austrian Section in the Hygiene Exhibition at Dresden.

Great dissatisfaction is felt in this country with reference to the appearance of the Austrian Section of the International Hygiene Exhibition in Dresden. The actual condition of public hygiene and practical medicine, as well as the general position of this country in all matters pertaining to public health, are seriously misrepresented there, and several independent observers have not been very lenient in their criticism of the matter in our journals. The fault was, from the beginning, the predominance of what may be called bureaucratic influence, whilst the medical profession as a whole was in no way considered by the Government when preparations for the exhibition were going on. Remonstrances coming from non-official persons are not much thought of by our officials, and it has required an expression of public indignation to call the attention of the responsible authorities to the unsatisfactory state of this portion of the exhibition.

Sept. 11th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Cholera Epidemic in Italy.

A CHANGE for the better is now manifest in the cholera-visited cities and communes of Italy. Leghorn has hitherto been the greatest sufferer, thanks to its insanitary condition and the supineness which left to local initiative and intervention what ought to have been anticipated by direct measures inspired and carried out by the Central Office. Leghorn has actually reduced by more than one-half the percentage of reported seizures and deaths. The maritime communities south and north of that seaport also give improved returns, while the landward towns, particularly such as Florence, Siena, and Lucca, are still practically immune. As in all such visitations, the predisposed of the population, the "candidates," so to speak, are picked off first, and thereafter the less predisposed, having profited by the warning, have either betaken themselves to healthier localities or have adopted measures, reinforced by a more vigilant sanitary surveillance, to fortify themselves against attack. With this, panic subsides, and a powerful auxiliary of the disease is thus removed from the scene of its operations. Cholera may now be said to be in full retreat.

The "Congresso Forestale" at Turin.

At Bologna in 1909, at Florence last year, and now at Turin, in connexion with the exhibition and the *festa* in commemoration of the fiftieth birthday of the "Third Italy," the reafforestation of the country has been the subject of largely attended congresses, at which the crying necessity for extensive and systematic silviculture was amply discussed. Like all the States along the Mediterranean seaboard, Italy has suffered disastrously by the reckless tree-felling, uncompensated by tree-planting, prolonged through centuries, till her condition has become only less pitiable than that of Spain, which lost her mercantile marine by the improvident using up of her timber and the reduction of the majestic forests, eulogised by Martial, to naked sierra or thinly clad prairie. Germany and Austria-Hungary have shown Italy the example of jealously conserving their forest growth, while Switzerland, driving home the lesson, has utilised Italy's own invention, that of electro-dynamics, by turning the water-power evolved from the rivers to the development of the lucrative steel and iron industry. This water-power is kept going by the enlightened silviculture which, by its equable production and storage of moisture, has made the Swiss side of the water-shed a perennial reservoir, while that of her southern neighbour is prolific only in autumnal floods, which leave the rivers, after their short-lived repletion, little better than gravel-pits for nine months of the year. Italy's climate, too, like that of Spain and Greece, has changed for the worse by the denudation of her hillsides—incurring in that, as in so many other directions, the nemesis of what Virgil calls the "justissima tellus," which, loyally treated, repays the cultivator with blessings ample and unfailing; which, on the other hand, neglected or abused, visits such treatment with relentless retribution. All this, and much more, recapitulated with commanding eloquence by the ex-Premier Luigi Luzzatti, who presided at the Turinese Congress, led up to a reassuring demonstration of what an awakened Italy is now doing to atone for her improvident past—a demonstration confirmed and illustrated by the able and accomplished Minister of Agriculture, Signor Nitti, who enlarged on the intimate dependence of the country's water-supply on the maintenance of its forest growth, and showed how public hygiene is not less interested in the problem of reafforestation than the national resources generally. The proceedings, carried into the subsequent sittings, evoked much valuable comment on the various methods of reclothing the despoiled uplands, while formulating practical suggestions for meeting the financial difficulty in bringing the pastoral rights established in those uplands under the control of Government by compensation or redress.

Sept. 10th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Hungary.

Dr. Magyarevics, chief medical officer of the city of Budapest, speaking in the Medical Society on the subject of cholera, said that three cases of the disease had been recently notified in Budapest, but there was not as yet any appearance of its extending further. In Mohacs, where about 25 fatal cases occurred in 1910, there had not been a single case of cholera notified since the beginning of the present year. The vigorous efforts of the board of health in checking this outbreak deserved the highest praise. Dr. Magyarevics further said that in his opinion quarantine and detention camps were of little if any value for the prevention of cholera. The poorer classes required special attention, and there ought to be full disclosure of the facts as soon as cases appeared. No method of treatment giving satisfactory results had been discovered, although intestinal antisepsis promised well; all water should be boiled, no uncooked food should be eaten, and the contents of the stomach should be kept acid by the drinking of lemonade or lime-juice, or else of water or tea containing a little diluted hydrochloric acid, because the spirilla of cholera could not

live in an acid medium. The water-supply should be carefully guarded; and all drains, latrines, cesspools, and places where filth was apt to accumulate should be cleaned and disinfected. In the report of the public health board of the city of Budapest for 1910 Dr. Magyarevics has made an exhaustive study of the present state of knowledge relative to protective inoculation against Asiatic cholera. The principal conclusions to which his inquiries have led him were as follows: (1) When spirilla of cholera were subjected to autolytic digestion in an aqueous fluid the receptors became separated from the bacterial cells and might be filtered in solution; (2) the subcutaneous injection of such free receptors into the human subject was free from any danger and produced only slight general reaction; and (3) the method was therefore a practical one for producing a cholera-immune serum in man.

Tuberculosis and Poverty.

Much valuable information relative to the prevalence of tuberculosis among the poorer classes will be found in a small book which Dr. Berkovics has published on the various problems involved in the prevention of tuberculosis. Prominence is given to the fact that every year in Hungary this disease causes 70,000 deaths, or one-seventh of all the deaths. The figures show that a close relation exists between the social position of the patients and the number of deaths. It is found that four times as many cases occur among the poor as among those who are in comparatively favourable circumstances, and Dr. Berkovics says that this makes the problem of limiting the malady a part of the larger social problem of dealing with poverty. The efforts to limit the disease are discussed under two principal heads—namely, the public control of general health conditions, as exercised in cities, and the more immediate practical efforts directed to the medical care of infected persons. An idea of the prevalence of the disease, modified somewhat by the increased attention given to it in recent years, may be gained from the following statistics. The total number of patients treated in 1900 was 3728, in 1905 it was 4910, and in 1910 it was 5344. The expense has also about doubled, rising from 1,200,000 kronen in 1900 to 2,000,000 kronen in 1909. The most promising step that has been taken for the improvement of existing conditions was the organisation in 1902 of a central committee for establishing hospitals for tuberculous patients. The chief problems recognised are the destruction of the bacilli and the separation of tuberculous patients from other persons. The inherent difficulties of these two problems are increased by the presence of poverty, crowded habitations making infection more frequent among people who have no proper means of caring for the sick.

Acute Articular Rheumatism in Children.

Dr. Gross, writing in the *Orvosok Lapja* of August 17th, enumerates quite a goodly number of authors who have reported cases of acute articular rheumatism in very young infants, although it is known that this condition is comparatively rare in children several years of age. In his opinion the disease may perhaps be transmitted with the milk of the nurse. The incubation period in such cases is at least four days; the duration of the disease is between two and four weeks; and both the duration and the severity of the disease are less in infants as compared with adults. Implication of the pleura and of the nervous system (chorea) is of frequent occurrence. This has been reported by Baudelocque, by Rilles and Burthez, and by others. Picot found that 50 per cent. of the cases observed by him were complicated with pericarditis, while Bokay in Budapest asserts positively that the heart of every rheumatic child is found to be attacked sooner or later. Dr. Gross observed in one case a rather rare complication in the form of an effusion into the maxillary joint.

Sept. 11th.

THE DEVIZES (WILTS) HOSPITAL.—A tender for £1838 has been accepted for the enlargement and alteration of the Devizes Hospital. This is to be erected as a memorial to the late King and also as a Coronation Memorial. About £2000 has been subscribed for the scheme, including a gift of £1000 from Mr. Grant Meek, the chairman of the hospital committee.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Attack on Dr. Wiley.

THE country at large has taken a long breath of relief at the collapse of the case against Dr. Wiley, whose activities against adulterated food had made him a host of powerful enemies; so powerful, indeed, that they had succeeded in foisting on him a colleague who was able completely to nullify his prosecuting work. The main force at work against Dr. Wiley is thought to have emanated from the fruit packers of California, who maintained that the prohibition of the use of sulphur dioxide for bleaching tinned fruit would damage their industry to the extent of £2,400,000 annually. Another strong party against Dr. Wiley were the manufacturers of tomato ketchup, who were anxious to use sodium benzoate in their sauces, their contention being that the salt was not inimical to health. Dr. Wiley, however, pointed out that its use enabled criminally careless manufacturers to incorporate floor sweepings and other refuse in their products without the possibility of fermentation betraying the presence of dirty ingredients or foreign material. Thoroughly to understand the situation it must be remembered that there are millions of people in the United States who will not use a sauce that contains alcohol, one of the best of preservatives. It is therefore necessary for the makers either to go to the expense of absolutely pure and fresh ingredients, sealing them up while hot, or to check fermentation by some chemical preservative; for, above all, it is indispensable to their trade prospects to be able to advertise the absence of alcohol.

The Quarantine Investigation.

One of the most disheartening facts in this country is the way in which public officials are harried for purely personal, political, or business reasons. The attack on Dr. Wiley is an instance of the last named. The charges against Dr. Doty, health officer to the port of New York, of inefficiency and neglect of duty are an instance of political animosity that fortunately has failed. A leading article in a morning paper, usually in general sympathy with the attacking party, on August 24th spoke of the resulting investigation as "reassuring, bringing out clearly the efficiency, the comprehensive sense of responsibility, the adequate and enlightened and far-reaching methods of the man upon whom, more than upon all other instruments of protection, the country depends for safety from imported pestilence. How unwise and shameful is the warfare!" Citizens and visitors alike are pleased and reassured by the result of this investigation.

Abolition of Public Drinking Cups.

The Sanitary Code ordinance, which comes into force in New York on Oct. 1st, abolishes common drinking cups in public places, hotels, public schools, railway stations, and theatres. The large hotels will either serve water free on demand in the restaurant or bar, or provide maids to serve water from the hotel fountains in glasses to be carefully washed after each individual use. An ingenious penny-in-the-slot machine will solve the problem for the railway stations, and school children will be obliged to carry individual cups. Difficulties may arise in factories, as the law forbids the loan of a cup by the owner.

Imitation Health Board Inspectors.

Grocers and butchers in outlying boroughs of New York have been victimised by bogus inspectors from the health department, who in return for payment for supposed advertising space in an imaginary health publication, promised the tradesmen immunity from prosecution for violation of health ordinances regarding the protection of meat and fruit from street dust. It is difficult to sympathise with the victims, who were thus seeking to evade wise sanitary regulations, but the law protects even such rascals, and the impersonators will be dealt with severely when caught.

Sale of American Patent Medicines.

Patent medicines to the amount of £1,400,000 were exported from the United States last year. Cuba is the largest customer to the extent of £84,000, Canada coming next with purchases amounting to £67,000. China swallows some

£6000 worth of American patent medicine, and the Philippines about £24,000. It is not uninteresting to learn that aphrodisiacs, real or imaginary, command the largest sale in the tropics.

New Superintendent of Johns Hopkins Hospital.

The successor of Dr. Henry M. Hurd as superintendent of Johns Hopkins Hospital, Baltimore, is Dr. Winford H. Smith. He is a graduate of the medical school attached to the University, having taken his degree in arts at Bowdoin College, Maine. Dr. Smith has had much hospital experience in Cleveland, Ohio, in Hartford, Conn., and in New York, where for two years he was superintendent of Bellevue and the Allied Hospitals.

Death of a New York Physician.

Dr. Herman P. Bender, a physician in extensive practice in the borough of Brooklyn, was run over recently by a racing motor-car as he was alighting from a tramcar on his way home from a professional call and instantly killed.

Crowding of Tuberculosis Sanatoriums.

New York residents who may have been ordered by their physicians to go to a sanatorium for proper treatment of incipient tuberculosis have found it impossible to comply on account of the lack of room at these institutions; all are overcrowded and there are long lists of waiting applicants. Mr. Philip P. Jacobs, secretary of the National Association for the Study and Prevention of Tuberculosis, states that there are 30 000 cases registered in New York alone (out of a probable total of 50,000), while there are but 3000 beds in city institutions reserved for the tuberculous. Where a patient desires to pay, say, £2 a week, he finds it more difficult to obtain accommodation than the absolute pauper. There is a good opportunity for commercial enterprise, according to the secretary, to open sanatoriums where decent board and lodging might be furnished at £3 a week.

Unusual Resistance to Electric Current.

A negro convicted of wife murder was executed at Eddyville, Ky., on August 23rd. Although of frail build, the first application of a current of electricity of a voltage of 2500 caused him to burst the retaining straps and fall upon the floor unconscious. He was re-strapped in the chair and the current was passed through his body for 28 minutes before life was pronounced extinct.

Sept. 6th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Hospitals Bill for New South Wales.

THE Labour Government of New South Wales is taking an active interest in hospital questions. It proposes to remove the portion of the Sydney Hospital building that abuts on Macquarie-street and to build a new wing at the rear in what is known as the Domain. Mr. Flowers, the Chief Secretary, is submitting an extensive memorandum to the Cabinet covering hospital management in general. It is proposed to make pulmonary tuberculosis a notifiable disease and to provide homes and sanatoriums. The establishment of Lock hospitals will also be recommended, and the care of convalescents will be outlined. The memorandum will discuss the possibility of establishing (1) special fever hospitals; (2) cancer hospitals; (3) ophthalmic hospitals; (4) skin hospitals; and (5) epileptic hospitals. There are two State hospitals already in New South Wales, and the Sydney and Prince Alfred Hospitals are practically State institutions.

Curious Double Tragedy.

A fatality occurred recently in a medical ward at the Melbourne Hospital owing to a patient drinking by mistake a solution of carbolic acid instead of medicine. The patient suffered from goitre, and it was not clear that the poison was directly responsible, death being apparently from shock. The patient from the next bed, a girl aged 17 years, gave evidence at the inquest, and the following day drowned herself in the river without any apparent reason.

The Public Health Department in Victoria.

Extensive reorganisation of the Victorian Department of Public Health is in progress. Dr. A. A. Brown, superintendent of food for export, has been joined to it with his staff, and the criminal investigation analyst and his staff will also be under its direction. It is probable that before long the board will be reconstituted.

Federal Quarantine.

Dr. W. Ramsay Smith has resigned the office of Chief Health Officer for South Australia, and Dr. W. J. Gething will in future hold the appointment under the Federal Director of Quarantine. A new appointment of Superintendent of Quarantine for Victoria will also be filled shortly at a salary of £650 per annum. It is stated that Dr. B. H. Morris, the Director, will leave shortly for a six months' tour of inspection of the quarantine regulations and arrangements elsewhere.

The British Medical Association.

At the annual meeting of the South Australian branch on June 25th Dr. W. T. Hayward, the retiring President, moved the following resolution, which was carried:—

That in the opinion of this branch it is desirable that negotiations should be entered into with a view to the amendment of the constitution of the British Medical Association so far as the Australian branches are concerned.

Copies of this are to be sent to all sister branches in Australia, accompanied by a memorandum consisting of four paragraphs, the first two of which are as follows:—

1. There is no suggestion of any body separate and distinct from the British Medical Association, but only for autonomy on distinctly Australian matters. The fact that it was proposed by Dr. W. T. Hayward, one of the founders of this branch, should be sufficient guarantee of this. To use political terms, the ideal is for a federation of self-governing branches, whereas at present the branches are like Crown colonies negotiating through the Colonial Office.
2. Such autonomy is urgently required, in order that the profession may unitedly deal with questions of contract practice, hospital abuse, medical defence, &c., as outlined by Dr. G. E. Rennie's resolution carried at the Australasian Medical Congress held at Adelaide.

The suggestion will probably be favourably received in all the States, as it has long been felt that local self-government is requisite.

Health of Melbourne.

The annual report of the city health officer gives the population of the city (exclusive of the suburbs) as 100,000, with a death-rate of 12·4 per 1000 and a birth-rate of 22 per 1000. The infant mortality figure (115 per 1000) is appreciably higher than for the preceding nine years. Melbourne city has a typhoid fever mortality of 8 per 100,000, as against 4·4 in London. The death-rate from tuberculosis was 113 per 100,000, as against 266 during the period 1891–95. Food samples showed little or no adulteration; 194 of 213 samples of milk were up to the standard. The bacteriological report stated that the milk-supply as examined in the laboratory was more than four times purer in 1910 than in 1907. No sample was found to contain tubercle bacilli.

Coronation Honour.

The list of Coronation honours included the name of a well-known Melbourne medical man, Dr. J. W. Barrett, who received the Order of C.M G. Dr. Barrett's work in connexion with the Melbourne University council and his assistance in many philanthropic and artistic movements have been unsparingly rendered for a number of years. He is a graduate of the University of Melbourne, but was for some time a demonstrator of physiology at King's College, London.

Prevalence of Syphilis.

By the courtesy of Dr. J. W. Barrett an advanced copy of the report, presented to the Victorian Government, of the result of a year's impersonal investigation of syphilis in the metropolitan district of Melbourne, has been placed at my disposal. The report states that Dr. B. B. Ham induced the Government of Victoria to make provision for a collective investigation of the prevalence of the disease throughout the area in question by means of the Wassermann test. An advisory committee was formed, with Professor H. B. Allen as chairman, and Dr. Ham, Dr. Barrett, Dr. K. Hiller, and Dr. A. Jeffreys Wood. Dr. Ernest Jones being subsequently invited to join the committee, and circulars were issued to all medical practitioners within the metropolitan district inviting them to forward samples of blood from every case diagnosed as syphilis or open to suspicion of syphilis. A schedule was given not only of ordinary syphilitic manifestations, but of diseases and occurrences in adults, children, and infants, in the sane and the insane, in connexion with childbirth, &c., which, in the opinion of the

committee, should cause the test to be applied. The reports were to be impersonal, and a fee was paid for each report. Dr. Hiller performed all the tests, with assistance in collateral work in the later stages by Dr. H. Douglas Stephens. The response from the profession was very large, 5000 distinct cases being reported. In addition, Dr. Barrett during four months submitted to Dr. Hiller's testing every case attending his clinique at the Eye and Ear Hospital as in-patient or out-patient for any cause whatsoever. The main outcome of these investigations is as follows:—Out of 5000 cases reported (not including those of Dr. Barrett) 1900 gave a positive reaction, and over 400 a partial reaction. Experience has shown that out of 100 cases of syphilis, only about 60 will give a positive reaction; so that 60 positives represent 100 cases of syphilis. Therefore, 1900 positives represent 3167 cases of syphilis, or 63·3 per cent. out of the 5000 reported. On the metropolitan population of 600,000, this means that more than 0·5 per cent. were found to be syphilitic. The general figure for Melbourne is a multiple of the 0·5 per cent. found by Dr. Hiller, but exactness has not yet been attained. The gravity of the matter is beyond question, though there is no reason to suppose that Melbourne is in worse case than other large cities, and the advisory committee is convinced that the investigation must be continued. The collective investigation so conducted is the most extensive and important accurate research into the prevalence of syphilis that has yet been conducted in any part of the world.

August 12th.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Gratz:* Dr. Josef Schaffer of Vienna has been offered the chair of Histology.—*Innsbruck:* Dr. Franz Ballner, *privat-docent* of Hygiene, has been granted the title of Extraordinary Professor.—*Munich:* Dr. Süpfler of Freiburg has been recognised as *privat-docent* of Hygiene and Bacteriology.—*Palermo:* Dr. Nicola Pende of Rome has been recognised as *privat-docent* of Internal Pathology.—*Parma:* Dr. Roberto Pignatari has been recognised as *privat-docent* of Ophthalmology.—*Prague:* Dr. F. Samberger, *privat-docent* of Dermatology, and Dr. J. Cisler, *privat-docent* of Laryngology, have been granted the title of Extraordinary Professor.—*Rome:* Dr. Pietro Imbriaco of Florence has been recognised as *privat-docent* of Operative Medicine.—*St. Petersburg (Military Medical Academy):* Dr. D. D. Popoff has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. Lêbêdeff. *Sienna:* Dr. Bernadino Lunghetti of Bologna has been recognised as *privat-docent* of Anatomy.—*Turin:* Dr. Giovanni Giuseppe Guyot-Bourg of Geneva has been recognised as *privat docent* of Internal Pathology.—*Vienna:* Dr. Rudolf Loos, *privat-docent* of Odontology, and Dr. Moritz Sachs, *privat-docent* of Ophthalmology, have been granted the title of Extraordinary Professor.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The vacation session of practical classes commences on Monday next, Sept. 18th, and extends over three weeks. The following are the teaching staff on the various subjects:—Mr. J. D. Mortimer (Anæsthetics), Dr. C. O. Hawthorne (Clinical Examination of the Nervous System), Dr. J. E. Squire (Clinical Methods and Physical Diagnosis), Dr. J. Campbell McClure (Clinical Examination of Gastric Contents), Dr. F. W. Price (Clinical Studies of the Heart by the Newer Methods, including the Polygraph), Mr. J. Swift Joly (Cystoscopy), Mr. J. M. Flavelle (Electro-Therapeutics and Diagnosis), Dr. F. J. McCann (Gynæcology), Mr. J. Jackson Clarke (Intestinal Surgery), Mr. J. Gay French (Laryngology), Dr. J. Fletcher Little (Massage and Medical Electricity), Dr. R. E. Bickerton (Ophthalmology), Mr. Laming Evans (Orthopædics), Dr. Dan McKenzie (Otology), Mr. W. Stuart-Low (Rhinology), Dr. F. Harrison Low (Roentgen Rays), Mr. P. Maynard Heath (Sigmoidoscopy), and Mr. J. M. G. Swainson (Surgical Anatomy and Diagnosis). The composition fee for certain of the classes and the separate fees for each class and for the tutorial classes directed at the higher examinations can be obtained, together with information as to the days and hours on which the classes meet, from the Medical Superintendent, the Polyclinic, 22, Chenies-street, Gower-street, London, W.C. Private tuition is also offered in the ophthalmoscope, laryngoscope, otoscope, cystoscope, sigmoidoscope, sphygmograph, sphygmomanometer, &c.

THE judges appointed to examine and report on the exhibits at the Festival of Empire have awarded to Messrs. Newton, Chambers, and Co., Limited, a Grand Prix for their Izal disinfectant preparations.

A DENTAL SCHOOL FOR LONDON HOSPITAL.—A quarterly court of the governors of this hospital was held on Sept. 6th, Mr. G. E. Maurice presiding, when a vote of sympathy was passed with the relatives of Mr. John Hampton Hale, who had been chairman of the institution. At this meeting a committee reported that the governors had approved of a dental school at the hospital.

NEW HOSPITAL FOR AXMINSTER (DEVON).—The foundation-stone of the new Axminster Cottage Hospital was formally laid on Sept. 6th by Mr. R. Cornish, the president of the hospital, in the presence of a large gathering. The old hospital, founded in 1866, has for some time been found to be inadequate for modern requirements, and the inhabitants of Axminster decided to erect a new institution "in memory of His Majesty King Edward VII., and to celebrate the Coronation of King George V." The cost of the new building will be about £2000.

DEVON AND CORNWALL EAR AND THROAT HOSPITAL, PLYMOUTH.—The committee of this hospital has issued an appeal for funds for erecting new buildings for the charity. The hospital has been established about 25 years, and for some time it has been apparent that larger premises must be provided. A scheme has been prepared, at an estimated expenditure of £2000. The Charity Commissioners have sanctioned the sale of stocks representing legacies valued at £1214 towards the cost of the undertaking, and consequently about £800 still remain to be obtained, and this sum, it is hoped, will shortly be raised as a result of the appeal.

CONSUMPTION AND SANATORIUMS IN CANADA.—According to a paper published by Dr. C. D. Parfitt in the August *Dominion Medical Monthly*, Canada now possesses 20 or more sanatoriums and special hospitals for the treatment of cases of tuberculosis of the lungs. This is the outgrowth of 14 years. Twelve of these are in the Province of Ontario, with 547 beds, and during the past year 1421 patients were treated. It is estimated that the actual number of patients alone with tuberculosis in Ontario is 10,000, and that 171,000 of those now living in the province will die from tuberculosis, according to the present death-rate, at the rate of 2500 yearly.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. J. T. Johnson, the Birmingham General Hospital, the Queen's Hospital, Birmingham, the West Bromwich Hospital, and the Walsall Cottage Hospital will each receive £1000.—Mrs. S. Pierce has bequeathed by her will £1000 to the Manchester Royal Infirmary, £500 each to the Manchester Hospital for Consumption, the Manchester Hospital for Cancer, and the Crippled Children's Help Society, and £250 each to the Royal Society for the Prevention of Cruelty to Animals and the National Society for the Prevention of Cruelty to Children.—Mr. Abraham Greenwood Eastwood left £1000 to the Royal Halifax Infirmary to endow a bed in the children's ward.—The late Mr. J. E. Yonge of Brixton has bequeathed £500 to the South Devon and East Cornwall Hospital, Plymouth, and £250 each to the Plymouth Public Dispensary; Royal Eye Infirmary, Plymouth; St. Elizabeth's Convalescent Home, Plympton; and the Ear and Throat Hospital, Plymouth.—The late Dr. Samuel Jones Gee has left the residue of his property, amounting to about £20,000, to his daughter for life, with contingent remainder to the Royal College of Physicians of London, upon trust as far as possible to form a permanent endowment fund for the College.—The late Mr. Johann Jacob Michael Hermann Spies has bequeathed the

ultimate residue of his property, amounting to about £6000, with contingent remainder equally between the Hospital for Women, Soho-square, the National Hospital for Diseases of the Heart, Soho-square, the London Hospital, the German Hospital, the North Wimbledon Cottage Hospital, the South Wimbledon Cottage Hospital, the London Orphan Asylum, Watford, the Infant Orphan Asylum, Wanstead, and the Society for Granting Annuities to the Poor Adult Blind.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, London, E.C.

A Pocket Atlas and Text-book of the Fundus Oculi. With Note and Drawing Book. Text by G. Lindsay Johnson, M.A., M.D., F.R.C.S. With Drawings from Life by Arthur W. Head, F.Z.S. Price 10*s.* 6*d.* net.

A Memoir by Sir Samuel Wilks, Bart., M.D., LL.D., F.R.S., on the New Discoveries or New Observations made during the time he was a Teacher at Guy's Hospital. Price 3*s.* 6*d.* net.

ARNOLD, EDWARD, London.

Notes on Practical Physics. By A. H. Fison, D.Sc., Lecturer on Physics at the Medical Schools of Guy's Hospital and London Hospital. Price 3*s.* 6*d.*

Experimental Pedagogy and the Psychology of the Child. By Dr. Ed. Claparède, Professor of Experimental Psychology at the Geneva University. Translated from the Fourth Edition of "Psychologie de l'Enfant et Pédagogie Expérimentale" by Mary Louch and Henry Holman. Price 5*s.* net.

A Handbook of Organic Analysis, Qualitative and Quantitative. By Hans Thacher Clarke, B.Sc. Lond., A.I.C., Lecturer on Stereochemistry in University College, London. With an Introduction by J. Norman Collie, Ph.D., LL.D., F.R.S., Professor of Organic Chemistry in University College, London. Price 5*s.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

The Medico-Chirurgical Series, No. 3. Arthritis. A Study of the Inflammatory Diseases of Joints. By Peter Daniel, F.R.C.S. Edited by James Cantlie, M.A., M.B., C.M. Aberd., F.R.C.S. Eng. Price 12*s.* 6*d.* net.

BLACK, ADAM AND CHARLES, London.

The Grammar of Science. By Karl Pearson, M.A., F.R.S. Part I.: Physical. Third edition, revised and enlarged. Price 6*s.* net.

BOARD OF TRUSTEES OF BELLEVUE AND ALLIED HOSPITALS, New York.

The Bellevue Hospital Nomenclature of Diseases and Conditions, with Rules for the Recording and Filing of Histories. Compiled by the Committee on Clinical Records, composed of Robert J. Carlisle, M.D., Warren Coleman, M.D., Thomas A. Smith, M.D., Edmund L. Dow, M.D. Adopted by the Board of Trustees, 1903. Revised and made to Conform to the International Classification, 1911. Price not stated.

FALCONER, JOHN, 53, Upper Sackville-street, Dublin. BAILLIÈRE, TINDALL, AND COX, London. THIN, JAMES, Edinburgh. WRIGHT, JOHN, AND CO., Bristol.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XXIX. Edited by J. Alfred Scott, M.A., M.D., F.R.C.S.I., General Secretary; Professor of Physiology, Royal College of Surgeons in Ireland. Price not stated.

HILTON AND CO., 109, College-street, Calcutta, India.

Enteric Fever in the Tropics. By B. N. Ghosh, I.M.S. (Cal. Univ.), Lecturer on Materia Medica and Therapeutics, Calcutta Medical School and College of Physicians and Surgeons of Bengal. Price 12 annas, or 1*s.*

HODDER AND STOUGHTON, London, New York, Toronto.

Three Thousand Years of Mental Healing. By George Barton Cutten, Ph.D., Yale, Author of "The Psychological Phenomena of Christianity." Price 6*s.* net.

KEENER, GEORGE, AND CO., 16A, Red Lion-square, London.

Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science. A Manual of Practical Psychotherapy. Designed especially for the General Practitioner of Medicine and Surgery. By Henry S. Munro, M.D., Omaha, Nebraska. Third edition, revised and enlarged. Price 18*s.* net.

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons, Baltimore, Maryland. Seventh edition, enlarged and thoroughly revised. Price 21*s.* net.

A Manual of Practical Hygiene for Students, Physicians, and Health Officers. By Charles Harrington, M.D., late Professor of Hygiene in the Medical School of Harvard University. Fourth edition, revised and enlarged. By Mark Wyman Richardson, M.D., Secretary to the State Board of Health of Massachusetts. Price 21*s.* net.

LAURIE, T. WERNER, Clifford's Inn, London.

An Oberland Châlet. By Edith Elmer Wood. Price 6*s.* net.

The Cathedrals of Central Italy. By T. Francis Bumpus. Price 16*s.* net.

METHUEN AND CO., LIMITED, London.

Body and Mind. A History and a Defence of Animism. By William McDougall, M.B., formerly Fellow of St. John's College, Cambridge; Reader in Mental Philosophy in the University of Oxford. Price 10*s.* 6*d.* net.

MEUSSER, HERMANN, Steglitzer-strasse, 58, Berlin.

Bibliothek der physikalisch-medizinischen Techniken. Unter Mitarbeit hervorragender Fachgelehrter herausgegeben von Heinz Bauer. Band I. Das Röntgenverfahren in der Chirurgie. Von Dr. Alban Köhler, Spezialarzt für Röntgenologie in Wiesbaden. Price M.5.75.

SPRINGER, JULIUS, VERLAG VON, Berlin.

Technik der Thoraxchirurgie. Von Dr. F. Sauerbruch, O.Ö. Professor, Direktor der Chirurg. Universitätsklinik Zürich, und Dr. E. D. Schumacher, Privatdozent, I. Assistent an der Chirurg. Universitätsklinik Zürich. Price, bound, M.24.

STANFORD, EDWARD, 12, 13, and 14, Long Acre, London, W.C.

British Rainfall, 1910. On the Distribution of Rain in Space and Time over the British Isles during the Year 1910. By Hugh Robert Mill, Director of the British Rainfall Organisation. The Fiftieth Annual Volume. Price 10*s.*

STOCKWELL, ARTHUR HENRY, 19, Ludgate-hill, London, E.C.

Solar Life: the Desire of All; or How to Live Happy for Ever. By Thomas May. Written in the Year of the Sun, and of the Christian Era, 1911. Price 1*s.* net.

SUPERINTENDENT GOVERNMENT PRINTING, India, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 46. Malaria in the Punjab. By Major S. R. Christophers, M.B., I.M.S., Assistant to the Director, Central Research Institute, Kasauli. Price, Rs.2, or 3*s.*—No. 47. Dysentery and Liver Abscess in Bombay. Being the Report of an Enquiry carried out by Major E. D. W. Greig, M.D., D.Sc., I.M.S., and Captain R. T. Wells, M.A., M.B., I.M.S. Under the direction of the Director, Central Research Institute, Kasauli. Price Rs.2, or 3*s.*

UNIVERSITY PRESS, Cambridge.

Observations upon the Natural History of Epidemic Diarrhœa. By O. H. Peters, M.D., D.P.H. Price 7*s.* net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

A Synopsis of Surgery. By Ernest W. Hey Groves, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng. Third edition, revised and illustrated. Price 9*s.* 6*d.* net.

The New Physiology in Surgical and General Practice. By A. Rendle Short, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng. Price 4*s.* 6*d.* net.

Our Baby: for Mothers and Nurses. By Mrs. J. Langton Hewer, Certified Midwife; late Hospital Ward Sister. Thirteenth edition, illustrated (eighty-third thousand). Price, paper, 1*s.* 6*d.* net; leather, 2*s.* 6*d.* net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, LONDON. WOOD, WILLIAM, AND CO., New York.

Joint Tuberculosis. By Leonard W. Ely, M.D., Consulting Orthopædist to the County Hospital, Attending Orthopædist to the Children's Hospital, Denver, Col. Price 12*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CARR, T. E. ASHDOWN, M.B., B.S. Lond., has been appointed Resident Assistant Surgeon to the Cheltenham Eye, Ear, and Throat Hospital.

CROLY, H. P., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Charlbury District of the county of Oxford.

STEVENS, B. C., M.D., M.S. Durh., D.P.H., has been appointed Medical Officer of Health and School Medical Officer of the Borough of Hartlepool.

STUART, FRANCIS W., M.B., B.S. Aberd., has been appointed Senior House Surgeon at the Coventry and Warwickshire Hospital.

WELSH, R. C., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Biggleswade District of the county of Bedford.

WHITEHOUSE, W. H., M.D. Durh., D.P.H., has been appointed Medical Officer of Health of the Borough of Deptford.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BERKSHIRE EDUCATION COMMITTEE.—Assistant Medical Inspector of Schools. Salary £300 per annum.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum, with board, lodging, and washing. Also Physician.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £125 per annum. Also Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum. With board, apartments, laundry, &c., in each case.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, all for six months. Salary in each case £50 per annum, with board, residence, and washing.

DUNFERMLINE. CARNEGIE DUNFERMLINE TRUST.—Assistant Medical Officer. Salary at rate of £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician and House Surgeon. Salary in each case at rate of £75 per annum, with board, residence, and laundry.

EDINBURGH SCHOOL BOARD.—Assistant Medical Officer. Salary at rate of £250 per annum.

EDMONTON UNION INFIRMARY, 77, Bridport-road, Upper Edmonton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with residential allowances.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten qualified Clinical Assistants.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician and Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—House Physician for six months. Salary at rate of £70 per annum, with board and residence.

HASTINGS, EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing. Also Assistant House Surgeon. Salary at rate of £50 per annum, with residence, board, and washing.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

HUNTINGDON COUNTY HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, &c.

INVERNESS DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120 per annum, with board, lodging, and laundry.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and laundry.

LEEDS MATERNITY HOSPITAL.—Vacancy for Female on Honorary Staff.

LEICESTER BOROUGH LUNATIC ASYLUM.—Medical Superintendent. Salary £800 per annum.

LEICESTER CORPORATION ISOLATION HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with board and residence.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Salary £250 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER. BAGULEY SANATORIUM.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon, each for six months. Salaries at rate of £100 and £80 per annum respectively, with apartments, board, attendance, and laundry.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PRESTON COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

PRESTON ROYAL INFIRMARY.—Senior House Surgeon, unmarried, for six months. Salary £80 per annum, with board, residence, and washing.

PRETORIA LUNATIC ASYLUM.—Junior Medical Officer. Salary £360 per annum, with quarters, rations, fuel, light, washing, and attendance.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROCHDALE INFIRMARY.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROXBURGH DISTRICT ASYLUM, Melrose.—Assistant Medical Officer. Salary £160 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL SUSSEX COUNTY HOSPITAL.—Two Assistant House Surgeons, unmarried. Salary in each case £80 per annum, with board, apartments, and laundry.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Dental Surgeon.

ST. GILES INFIRMARY, Camberwell.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salary of Second Assistant is £150 per annum, and Third Assistant £140 per annum, with apartments, board, and washing.

ST. MARY'S HOSPITAL, London, W.—Surgeon.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with rations, washing, and apartments.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Beverley, in the county of York; at Crossabeg, in the county of Wexford; and at Whitehouse, in the county of Antrim.

Births, Marriages, and Deaths.

BIRTHS.

CUNNINGHAM.—On Sept. 11th, at Sussex-place, Regent's Park, the wife of J. F. Cunningham, F.R.C.S., of a daughter.

PENROSE.—On Sept. 11th, at West Bar, Banbury, to Dr. and Mrs. N. C. Penrose—a daughter.

WOLSELEY-LEWIS.—On Sept. 8th, at Maidstone, Kent, the wife of H. Wolseley-Lewis, M.D., F.R.C.S., of a son.

MARRIAGES.

GORDON—BANCROFT.—On Sept. 6th, at St. Mary's Church, Tenby Francis Jervis Gordon, B.A. Cantab., M.R.C.S., L.R.C.P., to Frances Gwendolen, elder daughter of John Bancroft, M.A. Oxon., H.M.I.S.

SALISBURY—MURRAY-WHITE.—On Sept. 11th, at Holy Trinity Church, Murree, Punjab, Francis Hugh Salisbury, Captain, I.M.S., to Ivy, fourth daughter of the late Captain Samuel Murray-White, of the 1st Wilts Regiment.

WALLACE—AYRES.—On Sept. 6th, at St. Barnabas, Kensington, Frederick Wallace, L.R.C.P. Lond., to Caroline Rebecca, elder daughter of the late G. S. Ayres.

DEATHS.

HATTON.—On Sept. 2nd, at Carlsbad, Piers James Hatton, M.B., aged 46 years.

PETTIFER.—On August 23rd, at Weymouth, Edmund Henry Pettifer, M.R.C.S., late of 32, Newington-green, London, aged 83. R.I.P.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CROSS-CHANNEL SWIM.

MANY attempts to swim across the English Channel have been made since the late Captain Matthew Webb first accomplished this great feat in August, 1875, but they have all been unsuccessful until on Sept. 6th Mr. Thomas William Burgess repeated Captain Webb's exploit. We reported Captain Webb's great feat of endurance, and now record that of Mr. Burgess, although our readers will probably have all read the details in the daily press. Burgess entered the water at 11.15 A.M. on Sept. 5th, to the east of Dover at a point between the South Foreland Lighthouse and St. Margaret's Bay. The wind was blowing fresh from the north-east and the water was somewhat rough. The tide was at the time flowing eastwardly and carried him in a northward and eastward direction, so that after an hour and a quarter's swimming he was near the South Goodwin Lightship, 3½ miles from the shore, and in three hours he was six miles from the shore east of his starting point. The tide now turned and carried him in a southwesterly direction until, after he had been seven hours in the water, he was three miles south of the Varne Buoy, which lies between Folkestone and Cape Grisnez. On entering the water he had been rubbed all over with lard, and as a protection against the waves and the sun's rays he wore a pair of motor goggles and an indiarubber cap. After being in the water for an hour and a half he drank some hot chocolate, and after four hours he suffered from uneasy sensations, but on approaching the Varne Buoy he felt better, and there was a complete calm on the water towards sunset. Through the ensuing night, which was in every way favourable to him, being very fine and quite calm, he took hot milk, chocolate, and grapes at frequent intervals. From the neighbourhood of the Varne Buoy the second change of tide during his swim carried him in a northerly and easterly direction, until at dawn on Sept. 6th Cape Grisnez bore south-west and Calais south-east. He had now been swimming for about 18 hours, and during the next four hours he had several attacks of weakness and muscular cramp in the left side of the chest, attributed by himself to his use of the over-arm stroke with his left arm, a stroke which he kept up for more than 15 hours at a rate of 24 to the minute. The third turn of the tide during his swim found him about ten miles off Calais and drifted him in a south-westerly direction towards Cape Grisnez, from which he was about a mile distant at 7 A.M.; another turn of the tide was then nearly due, and for a time there was some anxiety lest he might be carried past the cape without being able to land; he was, in fact, carried past it at a distance of 400 yards from the shore, but by a great effort he landed about a mile eastward of Cape Grisnez, near the village of Chatelet. He walked ashore at 9.50 A.M. on Sept. 6th, after having swum for 22 hours and 35 minutes. Burgess is a big man about six feet in height and 40 years of age, and his feat is a wonderful proof of the strength and endurance of the human frame.

HEALTH REPORT OF THE BAHAMAS.

A CENSUS of the Bahama Islands, taken on April 2nd, 1911, gave a total of 55,872 souls, as against 52,735 in 1901. The births in 1910 numbered 2129 and the deaths 1457; birth-rate 3·4 per cent., death-rate 2·3 per cent. According to the report of the acting medical inspector, quoted in the Blue-book of the colony for the year ended March 31st, 1911, the general health has been good. During the autumn and winter months influenza existed in an epidemic form in New Providence district, and on some of the outer islands its propagation has probably been greatly facilitated by means of the dust consequent on a prolonged drought. While many of the cases have been of a severe nature, comparatively few deaths have occurred. There were a few cases of typhoid fever, with two deaths. During the early part of the year a case of small-pox was landed in the colony from Mexico, but prompt measures of isolation and disinfection prevented the occurrence of secondary cases. A few cases of typhus fever were introduced into Ragged Island, but the disease did not spread. The street drainage of Nassau is still in an unsatisfactory condition, but such measures as the finances of the colony justified have been carried out for its improvement. The rainfall (25·71 inches) was unusually low, but the supply of spring-water has been plentiful and good. 622 vaccinations were successfully performed in New Providence, and 1637 on the out-island settlements.

The Bahamas General Hospital, formerly known as the New Providence Asylum, was established in 1809 as a poor-house and hospital for the poor and infirm of the island. Since then the institution has grown steadily, and its functions have been extended in many directions. In 1845 it was placed under a board of commissioners appointed by the Governor, and now comprises the hospital proper, the infirmary, dispensary, lunatic asylum, and leper compound. During the year 718 patients were under treatment, of whom 234 were discharged recovered, 99 relieved, 30 discharged not improved, and 124 died. Every year many cases are received in a hopeless—often moribund—condition. The assistant surgeon visited 1082 cases at their homes. It is probable that the accommodation for lepers (of whom there were eight in the asylum at the end of the year) will in the near future have to be enlarged and improved in view of the compulsory segregation which is under consideration.

The Colonial Secretary's report refers to a movement for the union of the colony with Canada, and suggests that one of the results of the agitation will no doubt be the influx next year of many more Canadian visitors than hitherto, and this "will at least have the effect of giving the colony a free advertisement and of drawing the attention of the public to the great advantages possessed by Nassau as a salubrious winter resort."

HEALTH AND SANITATION IN THE FALKLAND ISLANDS.

A REPORT on the Blue-book of this colony for the year 1910, prepared by Mr. W. A. Thompson, has been received at the Colonial Office. It states, *inter alia*, that the birth-rate for the year was 18·92 per 1000, as compared with 23·08 in 1909, whilst the death-rate was 6·72 per 1000 as against 8·60 in 1909; but it is pointed out that these figures are misleading unless one remembers that the population of the islands is an exceptional one owing to the immigration of young men, who frequently leave the colony when past middle age. Males are greatly in excess of females, the proportion being as much as 3 to 2. No death occurred of persons between the ages of 8 months and 40 years. The rate of infant mortality compares very favourably with that of England, and bears witness to the care which mothers in the islands devote to their offspring. The health of the colony has, with the exception of an epidemic of scarlet fever and influenza, been satisfactory throughout the year. In July influenza attacked at least 50 per cent. of the inhabitants of Port Stanley—the only important settlement. The disease was apparently imported from Buenos Aires, where it was prevalent. The earlier cases were liable to lung complications, and convalescence, as usual in this complaint, was very protracted. Towards the end of the year there was a marked recrudescence of the disease, when in most cases the digestive organs were affected, with severe vomiting and diarrhœa. The Falkland Islands, with their damp, cold climate, will be very liable to this disease.

The Colonial Surgeon (Dr. R. S. Earl) writes: "In spite of the force of the strong prevailing wind, which usually arouses into fatal activity the hitherto dormant tubercle bacillus, it is interesting to note that although diseases of the respiratory system, especially bronchitis, are prevalent here, phthisis and other forms of human tuberculosis are fortunately absent. I have only seen two cases during the 18 months I have been here, and in one of these the disease was contracted in Patagonia. This fact is the more striking as the disease is found in sheep here. Pharyngitis was, as usual, prevalent, and some cases of acute tonsillitis were seen. ..... There can be no doubt that the health of the people in Stanley would benefit if the consumption of alcohol was diminished. In the absence of statistics one does not wish to insist too strongly on personal impression, but I should be surprised if the amount of alcohol consumed per head by the population here is not found to be largely in excess of the average quantity used per head in an English seaport town."

"THE SEASONED TOBACCO PIPE."

IN an annotation under the above heading in our columns of June 3rd we referred to a singular instance of tobacco poisoning due to the use of an old seasoned pipe. It is an axiom amongst smokers that "An old pipe smokes best," but that a pipe well saturated with tobacco-distillation products can be a source of injury to the health of the consumer seems to have been established in the case referred to. Mr. W. H. Yearon, of Messrs. Grant and Co., Ltd., of Riley-street Tower Bridge, London, S.E., suggests, as a means of obviating such a mishap, an aluminium thimble placed in the bowl. To a large extent by this device the tarry oils are prevented, at all events, from entering the bowl and the pipe keeps clean. It is not certain, however, whether the oils do not accumulate in the stem and nearer the mouth of the smoker. We are inclined to think that when special precautions, in the shape of absorbers, condensers, and what not, appeal to a smoker as making smoking a safer habit he had better eschew tobacco altogether.

THE "UNKNOWN TONGUES."

AN old copy of the *Morning Herald* of Oct. 31st, 1831, has just come into our hands, which affords a curiously vivid and matter-of-fact glimpse of the phenomena known in their time as the "Unknown Tongues." These tongues were doubtless the ramblings of victims of imitative mania who were suffering from the over-excitement and mental fatigue caused by the fervid three-hour discourses of Edward Irving, the Scottish divine, whose life and achievements are familiar to many of us, especially to readers of Carlyle. Irving in 1828 had removed from a small and overcrowded chapel in Hatton-garden, London, to a more commodious one in Regent-square, and here on Oct. 16th, 1831, "the public services were interrupted by an outbreak of unintelligible discourse from a female worshipper." Our quotation is from Dr. Richard Garnett's life of Irving. These outbreaks became frequent, and on Oct. 30th, 1831, the church in Regent-square was crammed during morning service. Before beginning his sermon Irving explained his position. "I dare not—I say it is not a matter of option"—he declared, "I dare not for my life prevent the manifestations." Later he was interrupted by a man crying in a loud voice—"God's supporting me. I am ready to be crucified for the true God, but not for the Devil." These and other remarks led Irving to protest and to explain—"All persons who speak in the tongues are known to me; all others are but brawlers." In common with more modern illuminati, he sought to speak of the "unknown tongues" in terms at once rationalistic and critical. He reminds us, indeed, of certain psychical researchers labouring to appear sternly scientific. "If a foreigner," said he, "ignorant of the English language, were now present and he should see me full of action, and my countenance full of intelligence, and if he were to say, because he did not understand me, that what I am now uttering is nothing but gibberish, that would be beyond all things uncharitable. It is not only uncharitable, but the greatest and most grievous sin to deny that it is the work of inspiration."

The earliest speaker of the unknown tongues, a Miss Mary Campbell, who may have been influenced by a perusal of the old travels of George Keate and Captain Henry Wilson, believed that the tongues were the language of the Pelew Islanders, who are Shamanites of Samoan origin in the Caroline Island group (Western Pacific). Irving himself protested that they were "regularly formed, well-proportioned, deeply-felt discourse, which evidently wanteth only the ear of him whose native tongue it is to make it a very masterpiece of powerful speech."

There are, it appears, ancient Greek elements in the following hymn which appeared in the pamphlet of one M'Kerrell, who wrote when the number of the gifted was 15:—

"Hippo gerosto niparos,
Boorastin farimi:
O Fastos Sungor boorinos,
Epoongos menati.
O Deripangito boorin;
Aristos ekrampos
Senoote hypanos noostin,
Hypen hippo booros."

THE TREATMENT OF OBSTINATE PSORIASIS.

To the Editor of THE LANCET.

SIR,—I have a patient who has suffered from psoriasis for 25 years. That on the trunk and limbs answers fairly well to treatment, but on the scalp the condition is intractable. From the daily application of ointment or lotion my patient's life is anything but a happy one. I would be very grateful for any suggestions from your readers as regards treatment. I have tried all the usual remedies without success.

I am, Sir, yours faithfully,

Sept. 12th, 1911. BEATEN.

Hendiadys.—The revolting belief is still common in spite of the spread of education. It need not be said that there exists in medical literature no authentic case of such an occurrence; it would be a physiological impossibility. Popular chap-books detailing the stories of Mary Tofts, of pig-faced ladies, and so on, have popularised a credulity that always existed.

Altruist.—1. The idea is rubbish. 2. See THE LANCET, vol. i., 1897, pp. 368 and 433. 3. Our correspondent is recommended to obtain the name of the tree and communicate personally with the officials in question.

One in Doubt.—The symptom is produced by so many conditions that no one method of treatment can possibly be efficacious. We will consider the suggestion that it might be wise to discuss the matter publicly.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for September, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
Sept. 16th–23rd (London, Agricultural Hall).—Nineteenth Annual Grocery Exhibition and Market.
,, 17th–20th (Turin).—Second National Congress of Guardians of Training Schools and Prisons.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–23rd (Paris).—International Conference of Genetics.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 25th–26th (Munich).—Meeting of the International League for Medical Psychology and Psychotherapy.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th and 29th (Manchester).—Conference of British Hospitals Association.
,, 28th–30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. Graham Little: Clinique (Skin).
TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. Gordon Taylor: Clinique (Surgical).
THURSDAY.—4 P.M., Mr. H. Lett: Clinique (Surgical).
FRIDAY.—4 P.M., Dr. Dan McKenzie: Clinique (Ear, Nose & Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Bishop Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.
TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.
THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.
FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.). Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas s (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 13th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 7	30·19	S.W.	...	124	88	61	61	66	Fine
,, 8	30·03	S.	...	128	92	64	63	68	Fine
,, 9	29·94	N.E.	...	75	67	63	63	65	Dull
,, 10	30·21	ENE	...	115	74	55	60	62	Fine
,, 11	30·01	S.E.	...	123	83	58	62	67	Cloudy
,, 12	29·91	S.	...	126	86	62	61	67	Hazy
,, 13	29·89	S.W.	·04	68	63	62	62	64	Dull

The following journals, magazines &c., have been received:—La Clinique Ophtalmologique, Journal of the Royal Institute of Public Health, Canadian Journal of Medicine and Surgery, Public Health, Æsculape, Science Progress, St. Paul Medical Journal, Maryland Medical Journal, Annali di Medicina Navale e Coloniale, Revue Française de Médecine et de Chirurgie, Medical Review of Reviews, Archives de Médecine et Pharmacie Navales, Indian Medical Journal, American Journal of the Medical Sciences, The Abolitionist, Detroit Medical Journal, Journal of Tropical Medicine and Hygiene, Jahrbuch für Kinderheilkunde, Risorgimento, American Medicine, Journal of Physiology.

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A Clinical Lecture

ON

TWO CASES OF EXTENSIVE EXCISION OF THE COLON AND ILEUM FOR TUBERCULOUS DISEASE,

WITH SOME DETAILS OF TECHNIQUE.

By ARTHUR E. BARKER, F.R.C.S. Eng.,

SURGEON TO UNIVERSITY COLLEGE HOSPITAL, LONDON; AND CONSULTING SURGEON TO THE QUEEN ALEXANDRA MILITARY HOSPITAL, MILLBANK, S.W.

GENTLEMEN,—The removal of long tracts of the large intestine for malignant and other disease such as tubercle and actinomycosis is now a common operation and one giving excellent results, immediate and remote. And with the improved means of diagnosis which are almost daily being devised the procedure is certain to become more frequent and beneficial. But such operations are only justifiable when undertaken by those who fully realise their difficulties and dangers and who have studied their technique in every detail. So many minutiæ in manipulation as well as principles have to be kept in mind all through these long operations that only careful training amounting almost to habit will prevent some of them being overlooked. I venture to think that a few notes on the technique of these procedures gradually evolved in my own work, which includes numbers of cases dealt with in various ways, may be of use to others confronted by the inevitable difficulties inherent in such procedures. And from many inquiries which have reached me on the subject I gather that it has not yet been adequately discussed. As regards the diagnosis of the essential tumours of the large intestine, there is a general feeling that this is not as closely studied as is called for, and in the February number of the *Practitioner* I tried to help in this direction. And in the matter of getting at, and of the adequate and safe removal of, different parts of the large intestine for disease we need all the personal experiences which can be accumulated. It must not be forgotten that this branch of intestinal surgery is almost exclusively the growth of the last 10 or 12 years, before which time little was seen of it. Consequently much that may now be known to individual operators is not yet common property.

ABDOMINAL INCISION.

On the point of access to the various parts of the large intestine it may be said that with the exception of the central third of the transverse colon, for which a median incision is suitable, all other segments may best be reached through an oblique flank incision on either side. This not only gives as free a field as can be obtained by any reasonable opening, but also does so with a minimum of injury to the muscles, nerves, vessels, and fasciæ of the abdominal wall. As the skin adds but little to the actual strength of the parietes it can be freely incised, and should be so especially in obese people. The cut in the skin should begin near the end of the tenth or eleventh rib and run downward and forwards nearly to the mid-line between the umbilicus and symphysis pubis. When the external oblique aponeurosis is exposed its fibres should be separated rather than cut, and the same may be said of the two deeper muscles. It is surprising what a wide opening can be obtained in this manner without actually dividing the fibres of the muscles in question. The nerves which supply the rectus, the oblique, and the transversalis muscles are also preserved intact with a little care and very few vessels are cut. The innervation and blood-supply of the abdominal wall are by these means preserved and its future strength is unimpaired. If the opening is not large enough when it reaches the sheath of the rectus this may be opened and the belly of the muscle be drawn inwards without difficulty, still further enlarging the aperture. At this stage the aim should be to gain adequate room without spoiling the abdominal wall. Vertical incisions *outside* the rectus sheath are unsuitable in these cases, the tissues, owing to the direction of their fibres, giving but little hold for any form of subsequent stitching and tearing apart easily if there be any vomiting or coughing. Besides this, the nerves and vessels must be cut by such incisions, as they run downwards and inwards.

THE LOCAL AND GENERAL CONDITION.

Assuming now that on opening the peritoneum in the line described it be found, as was the case in my two last cases, now convalescent, that the upper part of the ascending colon, as well as the cæcum, are extensively involved and call for removal, what is the next step? This is largely determined by the local condition and the patient's strength. If it be found that the diseased area is sufficiently localised to justify an attempt to remove it at one sitting, this may be set about at once *provided there is no extreme obstruction* and that the last part of the ileum is normal or hypertrophied, but is otherwise healthy. On the other hand, if the ileum is found paresed, distended, and congested, and loaded with liquid fæces, no attempt at extirpation should be made at the moment. Suture of a bowel, paralysed, livid, and soaked with toxins, is almost certain to end in failure of union at the point of suture of the intestine, even if it can be accomplished without the escape at the moment of some of the acrid fæces or foul mucus. A careful distinction must therefore always be made between the thickening of the ileum owing to compensatory hypertrophy and that due to œdema from toxins absorbed from fermenting foul fæces. In the first case the bowel will probably be of normal colour and texture and not much enlarged; in the latter its lumen will be much increased and it will be œdematous, injected, or even livid and softened. If it be in this condition a loop should be drawn out of the inner angle of the wound and the latter closed completely around it. If the patient's general condition permits, this loop should not be opened for some days, when it may be incised, and a Paul's tube inserted for drainage, which must be kept up until the whole small intestine has been emptied and the bowel has returned to a healthy condition. This is accelerated, I think, by the administration of bismuth carbonate in 10-grain doses three times daily. Of the antiseptic value of bismuth in intestinal cases, as in others, I have no doubt from large experience; indeed, it is my routine to employ it. When the colour of the motions coming from the fæcal fistula has been continuously altered by the drug, and they have become otherwise normal, we may begin to prepare for the excision of the diseased portion of bowel. In cases of subacute or chronic obstruction where operation is not urgently demanded I believe also that the daily use of bismuth carbonate greatly improves the chances of asepsis during the subsequent removal of the growth. It is taken for granted that every expedient is employed at the same time to unload the bowels. But such attempts should cease at least a couple of days before the operation.

ONE SITTING, OR TWO?

When there is no acute or subacute obstruction the problem is fairly simple, as we are going to work on healthy bowel more or less empty. But we have yet to decide whether to do the operation in two stages or at one sitting; in other words, should a short circuit between ileum and colon be first made and then, after an interval of two or three weeks, the excision of the diseased bowel be undertaken, or should the latter follow *at once* on completion of the anastomosis of the bowel above and below the part to be removed? As a matter of fact, I have accomplished the end in view in both ways many times over quite successfully. On general grounds, if a patient is in fair condition, the procedure in one sitting is much to be preferred. The relief to the sufferer's mind of having the whole affair over at once is great, and, conversely, the apprehension of a second operation after the first is often very depressing and a prospect which all will not face. Nevertheless, the amount of time which is required for the double procedure, junction and excision, which will be on an average two hours (my last required one and three-quarter hours), is a matter of gravity which cannot be overlooked in view of the anæsthetic and the prolonged exposure and manipulation of the viscera. I have been amazed, however, in several cases to see how little ill-effects have been produced by the double operation at one sitting even when of the longest. My last case had little or no shock; another earlier one in which the condition was complicated by a fæcal fistula in the cæcum, and which lasted two and a quarter hours, showed absolutely no ill effect from the prolonged operation, and is now, after

more than two years, in splendid condition. Personally I am inclined to rely for guidance on this point on the following factors. If there are no signs of toxæmia and the bowels to be anastomosed are healthy; if there are no wide-reaching adhesions, and the patient's general condition is good when the short circuit has been accomplished in a reasonable time, the excision should immediately follow. Cases of marked toxæmia with distended proximal bowel are, of course, excluded; they must be treated, as already stated, by artificial anus and evacuation for a time. In many cases of less distended bowel and only slight evidence of absorption of toxins it is better also to make two stages of the procedure—that is, if it should be undertaken at all without previous drainage by artificial anus. Towards the completion of the short circuit, then, the patient's general condition should be carefully considered by surgeon and anæsthetist, and if satisfactory the immediate excision may follow.

DETAILS OF PROCEDURE.

There are several details in the performance of the junction of the small intestine proximal with the large distal to the diseased area which are of special importance. The point to be selected in each comes first. In the proximal *healthy* small bowel the lower down the junction is made the better. In the first place general nutrition is less deranged, and in the second there is less mesentery to be taken away, time and blood being thus saved. In the case of the colon there should always be a wide interval between the diseased portion (whether cancerous or tubercular) and the spot distal to it selected for the junction with the ileum. This view is based upon the known wide distribution of the disease along the submucous lymphatics proximal and distal to the infected part so admirably demonstrated by Handley and so often hitherto the cause of recurrence in our older cases. There should be no hesitation in selecting a spot in the colon 6 or 8 inches or more beyond the palpable and visible infiltration. Any closer will in many cases, at all events, fall within the area of infection.

TECHNIQUE.

When the spot for junction has been selected each part of the bowel is drawn out and emptied by pressure with the fingers. Then they are clamped longitudinally, either singly or, if possible, side to side with a Doyen's forceps. (N.B.—The blades of these instruments are often made too powerful by many manufacturers, and if so may injure the bowel.) Every part of the wound and between and around the coils and clamps should now be packed with one *continuous* long strip of sterile gauze from an uncut roll. Then the two coils are united for at least 2½ inches longitudinally at about a third of an inch from the middle of one of the tæniæ, a long "tail thread" being left at the end opposite to the needle. The latter and its thread are then covered for the present by a turn of the gauze roll to preserve it from contamination later. The thread I have employed for the whole procedure for many years is of fine linen. (Barber of Lisburn, Ireland, is the spinner of this material for Singer's sewing machines; No. 90 is the strength used.) This suture is carried by an ordinary sewing needle. The "side threading" pattern, 2 inches long, is the most convenient. It is now stocked by Meyer and Meltzer, of 71, Great Portland-street, W. The sero-muscular union being now half made the opening in one bowel is cut, for 2 inches or so, through the tænia in the case of the colon. This is best done with scissors, and the length of the hole should be the same as that subsequently made in the other. Great care is necessary in making these openings to avoid soiling the wound with the contents of the bowel. This is always a most anxious part of the operation, for, in spite of the emptying of the gut before clamping, there is always at least infected mucus within it. This is best removed with small rolls of gauze held in forceps, fresh material and instruments being used each time. Then the opening in the other coil is similarly made and cleansed. It, too, should be about one-third of an inch from the sero-muscular suture previously half made. Personally I have an objection to using any lotion or even sterile saline at this stage lest any of the fluid mixed with fæces or mucus should run down over the edges on to the intestine; dry gauze is certainly cleaner. This is a far more serious matter than the cleansing of a gastro-enterostomy junction, but can be accomplished with practice as results show.

A second needle with the same sized (No. 90, Barber's scale) thread is now taken, and at the opposite end at which the first sero-muscular suture was begun is made to transfix all the coats of both bowels at about one-eighth of an inch from their edges and is tied, leaving a long "tail thread." From this point the needle and thread are carried over the cut edges of both bowels and again passed through all their coats about a quarter of an inch from the first, and so on until the two edges are united from end to end by a continuous overcasting suture. Then the corner is turned, the greatest care being taken that the serous edges are accurately coapted without the intervention of any mucous membrane. When this continuous suture has thus brought opening to opening all round the suture is completed by tying the "needle thread" to the "tail thread" at the point of departure. Then the whole line of suture is carefully wiped clean of any mucus which may have been squeezed out. Wet swabs are undesirable except in special cases. The sero-muscular suture is now completed with the needle and thread which has been covered from contamination during the "all coat" suture. The whole area involved in the junction should now be carefully wiped front and back after release of the clamps and all traces of blood removed. The long continuous strip of gauze is now taken away, and being in one piece there is no danger of any of it being left behind in the abdomen. Round the anastomosis it is now well to wrap a fold of omentum and secure it with a few interrupted sutures.

By this time it ought to be apparent to both surgeon and anæsthetist whether the patient's condition is such as to justify the much longer and more severe operation of extirpation of the segment of bowel including the disease. But it is a nice question to decide, and on the whole it is better to err upon the safe side and to divide the procedures into two operations than to make too great a claim upon the patient's endurance at one sitting. The judgment even of the experienced operator will, of course, be at fault occasionally; nevertheless, experience will tell almost as much as skill. The advantage to the patient of getting over the whole undertaking at once is so very great, however, that some risk may be taken. Feeling thus, my own preference in making the preliminary ileo-colostomy in the majority of cases is for a "side-to-side" anastomosis which reduces the chances of infection from the bowel. In it there are no turned-in stumps of intestine left about which we need be anxious and the procedure is shorter. But where on careful exploration of the growth and its surroundings in a patient in good general condition an extirpation in one sitting seems justifiable, there can be no doubt that to join the end of the divided ileum to a slit in the side of the colon is the quickest and safest procedure. Here there is no blind stump of ileum left in the abdomen, the stitching of which would have prolonged the operation and increased the risks of infection. There is, of course, the divided stump of the ileum in the part to be taken away. But this will be securely clamped, wrapped in gauze, and immediately lifted out of the abdomen and further enveloped in sterile towels out of the way of contact with anything which could infect the peritoneum or the wound in the abdominal wall. This "end-to-side" ileocolostomy is commenced by a sero-muscular suture between the undivided ileum and colon, which includes half the circumference of the opening. Then the ileum is clamped with two pairs of Doyen's clamps, the first close against the line of suture just made and the next half an inch below the first. Between the two the ileum is cut across as close to the first pair as possible. Then the cut surface of the partly sutured ileum is wiped clean and covered with gauze for the present, the clamp on it being removed. The other end with the clamp still firm is wrapped in gauze, and the mesentery belonging to it is divided between ligatures until the bowel can be well drawn out of the abdomen and wrapped in sterile towels for the present. The gauze is now removed from the partly sutured end of the ileum, its open end again cleansed, and a corresponding opening is made in the colon through one of the tæniæ, the edge of the cut being about one-third of an inch from the previously made sero-muscular suture line. Then the "all coat" suture is made uniting the two corresponding openings between ileum and colon as previously described. When all round has been wiped clean the sero-muscular suture is completed and tied to its tail thread. In cutting across the ileum care should be taken to remove more of the free

margin than of that attached to the mesentery. The blood-supply of the free margin is by this means more certain to be adequate. This rule holds for all transverse divisions of the bowel in any part of its course, large or small. If now the patient's condition is *not* good the distal end of the ileum above the ileo-cæcal valve can be turned in and sutured, cleansed and returned into the abdomen, or may be left hanging out of the wound unsutured but enveloped in gauze drawn round it with a tight strong thread, the rest of the procedure being deferred.

But the patient may be in good condition as regards blood pressure, respiration, &c., and it may be felt that the whole procedure of extirpation may be best completed at one sitting. If this be so the original gauze packing in one continuous piece such as I have always used is removed with no danger of leaving anything behind. It is otherwise if short pieces are employed. It is very easy to overlook one of them, especially when soaked in blood-stained serum. No detached small piece of gauze should ever in my opinion be allowed within the abdomen or other large wound which is not immediately taken out. The wound is now packed off again with a fresh gauze roller paid into it, while the still unrolled part is placed in a sterile box or towel on the abdomen. What is soiled can be from time to time withdrawn and cut off, while a fresh part is inserted from the roller. When the whole field of operation has been thus freshly guarded the peritoneum reflected from the cæcum and ascending colon to the parietes should be divided with scissors, one blade of which is inserted under it. There are few or no vessels to be considered here and no time is lost. This only becomes an anxious matter in the neighbourhood of the kidney, duodenum, and ureter, when the whole cæcum, ascending colon, and part of the transverse has to be removed, as was the case in the two patients to be referred to. When the peritoneum is divided great care must be taken to remove all glands and the surrounding areolar tissue in which the lymphatics run, together with the affected bowel.

The whole of the involved intestine from the ileo-cæcal valve to the anastomosis is by this time mobilised, and the inner part of its mesentery, which contains its vessels and lymphatics, can be well defined when stretched. The vessels must be carefully secured far from the intestine, but with great care not to include the superior mesenteric or trunk of the middle colic. The right colic can be tied off an inch from its origin, but the middle colic should not be ligatured until after it has given off its left colic branch, so that the anastomosis with the left colic of the inferior mesenteric be not interfered with. The corresponding veins will also require ligatures, and the fat and lymphatic tissues should be tied off with them.

By this time the whole ascending and part of the transverse colon are detached and the tube can be cut across an inch and a half from the previous junction with the ileum. This should be done between two Doyen's clamps placed close together, but not before a fresh turn of the gauze roller has been placed under the point of division. The separated portion containing the disease is carefully lifted away with all due safeguards as to avoidance of soiling with the fresh cut stump held in the clamp. The remaining proximal stump still held in the clamp is carefully cleaned and a second clamp is put on the bowel proximal to the first, and gently closed. Then the first, which should have been tightly applied, is removed, and the edges, which are found flattened together, are overcast easily with a suture. Having again been wiped over, the Doyen is taken off and the line of sutured bowel is pushed into the lumen beyond and a continuous sero-muscular suture applied to retain it there. The stump is cleansed again and the gauze packing removed in one strip.

It only remains now to revise the whole field of operation, close all bleeding points, remove any clots and loose shreds of fatty and areolar tissue, and suture the wound in the abdominal wall. This, as a rule, can be done completely at once in layers. If the packing has been carefully carried out from beginning to end, the edges—serous, muscular, and cutaneous—will be clean, and primary union will be obtained. But there may be a doubt on this point, in which case the wound is better only *partially* sutured over a gauze packing left in for 24 hours. But it is an enormous gain to the patient to get over the whole procedure once for all, and careful packing and manipulation will secure a degree of asepsis quite compatible with primary union. The earlier operations included drainage as a rule, but this was found to prevent in some cases the coaptation of the serous surfaces round the anastomosis and stumps, and the proper deposit of lymph around them, so that not infrequently a slight fæcal fistula was the result. This almost certainly closed in a short time, but was a blemish on the operation. Now with greater command over the technique of aseptic removal and immediate and complete closure of the abdominal wound such leakages are rare and primary union is the rule. If such is the case the after-treatment is simple. Fluid diet in small amount can be taken from the first day onwards, and after the bowels have been moved naturally, as they will be in a few days, semisolid and later full diet.

The cases alluded to in the title of this lecture appear in several ways as deserving of record, and particularly as illustrating the method of operation described. They have a further bearing upon the whole question of tubercle of the intestine and its treatment, which, however, is too large to be dealt with here.

CASE 1.—The patient, an unmarried female, aged 40, was sent to me in a very emaciated condition on account of a fæcal fistula in the right groin, dating from an operation for fæcal abscess about one year before, assumed to be due to appendicitis. At the operation a suspicion, I was told, arose that tubercle was at the root of the matter. Besides the fæcal fistula a large mass occupying the whole cæcal region could be made out when I came to examine the patient.

On June 25th, 1908, under spinal analgesia, I included the scar and fistula between two curved incisions and then stitched the two included skin edges over the fistula, using the threads besides to tie a thick layer of gauze over this to prevent any soiling of the subsequent deeper wound. Then the two incisions were deepened into the abdomen. It was then seen that the whole cæcum and most of the ascending colon were involved in advanced tubercle. Besides this, the last 18 inches or so of the terminal portion of the ileum were studded with tubercles as large as small peas (*vide* illustration). The cæcum was mobilised as above described, but with the greatest difficulty owing to very dense cicatricial adhesions all round and to the omentum. During the necessary dissection the cæcum gave way, but the hole was clamped, wiped, and enveloped in gauze. The hepatic colon was clamped, divided, and its end turned in and sutured. The ileum was now cut across over two feet from the valve and the whole tuberculous bowel with its mesentery and many infected glands removed from the abdomen as above. Then the end of the ileum was planted into the side of the transverse colon about two inches from its closed end. The whole procedure was a most complicated one owing to adhesion, infiltration, and glandular infection as well as the difficulty of determining how much of the ileum should be taken, for many small tubercles were scattered widely and I have no doubt that some were left behind above the line of junction. The wound was almost closed, but as there was some justifiable doubt as to the whole of the operation having been carried out without infection from the fistula and from the tear of the cæcum I thought it better to put a gauze drain into the upper angle. This was removed in a few days, but a sinus remained at the spot for a long time until the patient went to the country. Otherwise the rest of the wound healed perfectly. The operation lasted for 2¼ hours, but the anæsthesia was absolutely satisfactory to the surgeon and to the patient, who had expressed a wish to escape from chloroform. There was no sickness and no shock.

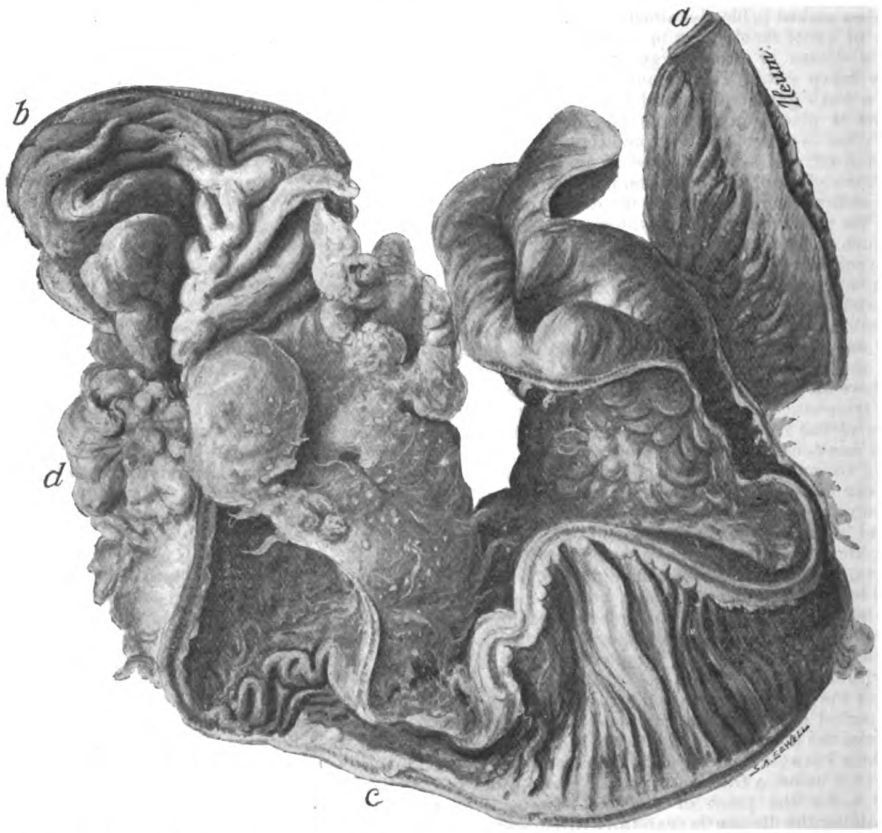
The parts removed (*vide* illustration) are thus described in the hospital surgical registrar's notes. "Cæcum with 4 inches of colon and 27 of ileum. Colon where cut through fairly healthy, though thickened and showing numerous tubercles on its peritoneal aspect. There is some ulceration of the mucous membrane, especially towards its lower end, where the whole circumference is ulcerated. Cæcum a mass of fibrous tissue, the walls ¼ to ½ inch thick and very rigid; lumen very small, mucous membrane greatly ulcerated, especially round the stump of the fistula. Some inches above the ileo-cæcal valve the lumen of the gut contracted by thick, fibrous material to such an extent that it will not admit the little finger. Above this in the ulcerated colon are five plum stones. The ileum shows numerous ulcerations of the mucous membrane, some healed, many recent, and encircling the bowel. About 22 inches up the ileum is a healed ulcer contracting the bowel. At the cut end the ileum, though thickly studded with tubercles, is

fairly healthy, showing no recent inflammation or ulceration."

I have recently seen this patient nearly three years after operation. She is plump and ruddy, and the bowels act regularly. Her local and general condition, in short, appears perfect, and her high spirits are remarkable.

CASE 2.—The patient, a soldier, aged 32, was sent to me as a case of probable carcinoma of the ascending colon. The diagnosis was based on a history of chronic intermittent obstruction and wasting with tumour in the flank, and on the discovery of a tumour from cæcum to hepatic flexure with infected glands during an exploratory laparotomy in December, 1910. Nothing further was done then and the wound was closed and healed per primam.

On admission, Jan. 23rd, 1911, the tumour, though large, appeared to me to have increased, but slowly, and the general condition to be less serious than might be expected in a young man who was known to have obstructive symptoms from tumour (presumably malignant) since at least the previous October. It appeared probable that the disease and the wasting might be due to tubercle, and this view gained support from the presence of tubercle bacilli in the sputa and the physical signs of dry phthisis in the right apex. The hope was justified that the symptoms might be due to a tubercular mass in the walls of the colon, as in the last case, and the glands only infected from this. After due preparation the same oblique skin incision was made as above, the muscle fibres separated, and the abdomen opened. The mass felt consisted of cæcum, infiltrated ascending colon, and hepatic flexure and glands obviously infected but not carcinomatous. This mass was widely adherent by fibrous bands to the border of the liver, kidney, and duodenum, and the omentum was also extensively adherent to it. The diagnosis of tubercle having been confirmed at once by a microscopic section of a gland, a lateral anastomosis of ileum to middle of transverse colon was made and the wound was closed. Spinal analgesia made the operation much easier than usual, but time had been lost in the examination of the relations of the tumour, and it was thought better to postpone the extirpation of the disease until a later period. At the end of a fortnight all was well, and the bowels had been thoroughly unloaded naturally through the anastomosis. The wound, which had healed per primam, was again opened up, and the last part of the ileum, cæcum, ascending and part of transverse colon up nearly to the anastomosis were excised with the same details as above. There were extra difficulties in this case in dissecting the mass from its adhesions with the liver, kidney, and duodenum, and in extirpating the widely infected glands. But in the further course of the case there is nothing to note except perfect recovery. There was no drainage, and the wounds healed without a flaw.



a, Divided ileum. *b*, Divided colon. *c*, Ileo-cæcal valve. *d*, Contracted portion of cæcum. All parts studded with tubercles.

When the man came back from the seaside to report himself he was in rude health, could eat any diet, and his bowels acted normally. The tubercle bacilli had disappeared from what he coughed up.

DONATIONS AND BEQUESTS.—Subject to certain legacies and conditions the Glasgow Royal Infirmary, the Western Infirmary, Glasgow, and the Victoria Infirmary, Glasgow, will receive about £40,000 each under the will of the late Mr. J. S. Dixon. The Glasgow Sick Children's Hospital will receive about £20,000.—The late Lieutenant-General Mostyn de la Poer Beresford has bequeathed £1000 to the Free Home for the Dying, Clapham Common.—The executors of the late Captain Ralph Slazenger have allocated £1000 of the £2000 left for charitable purposes for the endowment of a bed in King Edward VII. ward of the Royal National Orthopædic Hospital.—By the will of the late Mr. Edmund B. Gibson the Saffron Walden Hospital will subsequently receive £500.

THE OPERATIVE TREATMENT OF MALIGNANT DISEASE OF THE PELVIC ORGANS.

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MALIGNANT disease of the pelvic organs is so common and its operative treatment is yet so varied and on the whole so unsatisfactory that it is highly probable that no finality of method of dealing with the disease has yet been reached. The crux of the whole problem seems to be the disposal of the ureters and the eradication of malignant metastases in the walls of the pelvis. Were we sure that enlarged glands lying near the external and common iliac vessels were malignant many cases would have to be given up immediately on opening the abdomen. But these enlarged glands have been found so often to be merely inflammatory that though everyone is convinced that they should be removed whenever practicable few look upon them as an absolute bar to attempting eradication of the disease. The lymphatic distribution from the pelvic organs has been thoroughly worked out by innumerable investigators, and though their findings do not invariably agree it is safe to assume that no part of the pelvis proper can be held to be unaffected in malignant disease of its organs except the small part in front of the bladder, and that only when the disease is not primarily in the bladder itself.

The operation for malignant disease of the uterus, usually known in this country as Wertheim's operation, and the abdomino-perineal operation for rectal cancer, may be taken as examples of real attempts to deal radically with malignant disease of the pelvic organs, and in simple cases, and in the hands of practised operators, they have obtained a position in practical surgery. But the ordinary surgeon still dreads to attempt such delicate operations, and it is in his hands, chiefly from want of experience in the particular operation, that the mortality is excessive and injury to the ureters is so common. The latter accident is capable of rectification at the time if the damage is noticed by the operator, or may be cured by a later operation, but generally this is by the sacrifice of a kidney, or there is left intermittent difficulty with micturition.

In a case of cancer of the uterus I on one occasion was compelled to sacrifice a portion of the bladder with both ureters, and though the patient survived for a considerable time and died from an indefinite lung trouble the method adopted to benefit the urinary discomfort does not deserve more than a passing notice. In separating the uterus from the bladder the latter was opened, as was immediately evident, by tearing through the growth. Palpation revealed malignant infection of the bladder mucosa, covering an area of 1 by 1½ inches, with its long axis antero-posterior and involving the base of the bladder about the ureteric openings. This area, along with about half an inch of margin of healthy bladder tissue, was clipped away and removed along with the uterus. The ureters were divided before they reached the uterus but were not otherwise disturbed. After removal of the growth a few catgut sutures fixed the edge of the cut bladder to the front of the rectum a drainage-tube being left in each corner fixed by a catgut suture and protruding from the vagina. The patient made a normal recovery from the operation, but all the urine escaped per vaginam. This was rectified later by closing the vaginal orifice, and when the patient was last seen, a year after the second operation, she expressed herself as quite comfortable.

The operation was done five years ago and was by no means a complete one, and had the patient lived or even been available for examination of the pelvis a couple of years or so after removal of the tumour, in all probability some recurrence would have been noted; but as it happened she left the district, and only a meagre account of her last illness was obtainable from her friends. In discussing this case with another surgeon, I learned that in at least one case where part of the ureter had to be sacrificed a German surgeon had successfully grafted a shaving from the skin, cut slightly thicker than a Thiersch's graft and coiled in the form of a tube. Though no opportunity has yet been afforded of trying an alternative method, it seemed likely that if such a graft lived the ureters themselves would act better if they could be attached to another immoveable part of the bladder. The usual method of attaching them to the peritoneal surface exposes the ureters to periodic changes of tension, besides leaving them uncovered by peritoneum.

The following operation was done with comparative ease on a male cadaver. A Mackenrodt's incision, extending from one superior iliac spine to the other, and reaching to within half an inch of the symphysis pubis, divided all the structures of the abdominal wall. With the cadaver in the Trendelenburg position, the bowels were pushed upwards, an abdominal gauze cloth was packed in, leaving sufficient edge outside to cover the convex upper flap, which was then stitched at its centre to the tissues of the sacral promontory by one silkworm-gut suture. This effectually retained the intestines and gave an excellent view of the whole pelvis. The ureters and anterior division of the internal iliac vessels were located and the peritoneum opened by a vertical slit over the vessels, which were at once tied with a catgut ligature. The slit in the peritoneum was extended upwards to the division of the common iliac, and downwards along the side of the pelvic colon to the base of the bladder. The peritoneum was reflected outwards on both sides. The central flap of peritoneum was reflected upwards. The ureters were freed, from the brim of the pelvis to the base of the bladder, by blunt dissection and a few slips of a knife or scissors, care being taken not to injure them or their vessels by too close dissection or rough handling. The lower end of the ureter was gently pulled upon, and a pair of artery forceps occluded its vesical end, below which it was cut across. An opening was next made over the front of the bladder in the space of Retzius by reflecting the peritoneum from the lower side of the abdominal wound, and a pair of dressing forceps was passed from this opening under the peritoneum along the pelvic brim and out under the flap that had been dissected up. The end of the ureter was grasped by this forceps, and brought along the tunnel and pushed through a hole made in the front of the bladder. This can be done without the least tension on the ureter, especially if the outer edge of the fixed part of the bladder be utilised. A single silk suture fixed the ureter. The whole of the pelvis could then be cleaned out.

The operation was continued as for cancer of the rectum. The sigmoid flexure was pulled down till it became taut, and ligature of its mesentery was begun at this point. After the superior hæmorrhoidal artery is secured the rest of the mesentery can be stripped clean off from the brim of the pelvis down to about the top of the coccyx. There would be some hæmorrhage from the middle sacral artery, and probably from the lateral sacrals, but with a clear view of the pelvis these could easily be secured. If the base of the bladder be infected part of it can be removed without hæmorrhage as the vesical arteries are already controlled. Nothing need be left on the pelvic wall except the nerves and muscles. The colon was next ligatured in two places as low down as convenient, and divided between the ligatures with a knife, which was then discarded. The ends of the cut bowel are immediately covered with gauze to prevent any leakage. This is a speedier method than inverting the ends and needs less handling. It is also preferable to division by cautery, the handle of which cannot easily be kept aseptic. The long piece of colon was brought out at the left extremity of the wound and covered over, while the short end was dropped into the bottom of the pelvis. Division of the colon at this point does not make such a perfect specimen for preservation, and suggests a possibility of malignant infection, but this with the precautions mentioned above is hardly possible. The peritoneal flaps were next stitched together and completely closed the floor, and this diaphragm would be pushed right down to the bottom of the pelvis by the weight of the bowels. The upper end of the bowel was fixed into the left corner of the abdominal wound, and the rest of the incision closed by layer sutures. A rubber drain would be left in the space of Retzius as a precaution against urinary leakage. The rest of the operation could be done quickly and bloodlessly by any of the usual methods from below. If part of the bladder had been removed, there would be leakage of urine for a time and a drain would be necessary. In every case two-hourly catheterisation of the bladder must be done for ten days to allow the ureters to get quite firmly fixed.

If this operation be done with spinal anæsthesia there will

be practically no shock, and the operation should be finished in about an hour, no time being wasted in securing bleeding points. Krönig showed that both internal iliacs can be occluded without interference with the vitality of the bladder, and if the uterus is to be removed the superior hæmorrhoidal and sacral arteries would afford sufficient blood-supply to the rectum. If the base of the bladder were removed along with the uterus, which would seem to be almost necessary in cancer of the cervix, there would be leakage through the vagina, but this in malignant disease, which occurs late in life, may be rectified, as the vagina can be closed at a future time and made part of the bladder.

Hitherto all rectal operations for cancer, even Kraske's, have been followed by a huge mortality from shock, hæmorrhage, and sepsis. But by the method described the last could be almost abolished. Hæmorrhage in most of the low operations is very free, and the tying of vessels, even after the difficulty of catching them is overcome, is so awkward that sepsis is nearly certain to follow. Shock oftener follows pelvic operations in males, who do not seem to recover from loss of blood in such so speedily as do females, and whose pelves are not so tolerant of surgical interference. I have long been impressed with the idea that general anæsthesia, however induced, is followed by shock in proportion to the handling of sensitive tissues as much as from the length of time taken by the surgeon to do the operation. Afferent and efferent impulses are transmitted as if there were perfect consciousness, and only by blocking these impulses by spinal or local anæsthesia can shock in such cases be modified. The operation is recorded in the hope that specialists in pelvic surgery may consider its practicability.

Dundee.

THREE CASES OF CONGENITAL HEART DISEASE,

WITH NOTES OF THE FAMILY HISTORY RELATING TO THEM.

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THE clinical story of these cases begins with a note relating to a lady, Mrs. A. B., and the particulars which I shall describe very concisely have come to my knowledge during the last 30 years. The details of the several defects recognised in the three cases have not been secured with accuracy, but the important facts as to their incidence admit of no doubt.

Family history.—Mrs. A. B. was one of several daughters of a gouty man who died over 80 years of age. Her mother was also long-lived, and appears to have suffered from some variety of chronic arthritis. Mrs. A. B. married at the age of 17 and went out to India with her husband, who was a rather delicate man, and died some years later at sea from chronic dysentery. One son, Mr. B. C., was the issue of this marriage, born in India. He has been healthy and vigorous and still survives at the age of 60, with some slight indication of a gouty proclivity.

Mrs. A. B. married a second time a sufficiently robust man, aged 47 years, and had by him two sons and three daughters, all now living and healthy. Soon after this marriage she became very stout (arthritic obesity). After 12 years this husband died from cardiac dilatation and hemiplegia.

Later, at the age of 37 years, Mrs. A. B. married a third time, the husband being a healthy man of about 30 years of age. In this man's family there were signs of gouty proclivity in both parents. (His father died at the age of 79 years from the effects of interstitial nephritis. He had Heberden's nodes, and these also developed in others of his children in later life, with obvious gouty symptoms.) During her pregnancy with her first child by this (third) marriage, Mrs. A. B. suffered from gouty pains in the joints, and began to lose a good deal of her obesity. A female child was born at term, somwhat small and weakly, and with a languid circulation. In the course of the second year of its life it was still feeble and backward, although not rachitic, and had a tendency to dyspnœa on exertion, and progressive clubbing of finger-ends, with duskiness of the lips. An examination of the heart at this time, by the late Dr. S. J. Gee, revealed the existence of a murmur in the pulmonary arterial area. The child remained delicate and died from scarlet fever in its thirteenth year.[1] There was no necropsy.

Eighteen months later Mrs. A. B. gave birth to a second daughter. This child was with great difficulty made to breathe on delivery, and was very cyanotic. It lived only 14 hours. A necropsy revealed a small opening in the septum ventriculorum and patent ductus arteriosus, and extremely small pulmonary veins. The mother had suffered for some weeks during her pregnancy from severe gouty pains in various parts of the body.

Two years later she gave birth to a healthy male child, who is still living and robust, and leading an active life.

In the course of the next three years Mrs. A. B. was found to be the subject of gouty glycosuria, little controlled by dieting. She lost weight very gradually and became feeble. She died at the age of 56 years from pleuro-pneumonia, having suffered from glycosuria in varying degree for 12 years. The husband has since his marriage had several gouty attacks of arthritis, lumbago, and phlebitis.

The third case of cardiac malformation occurred in the first child born to Mrs. A. B.'s son by her first husband. This son married a daughter of a distinctly gouty man, who had "regular" arthritic gout at intervals. Their first-born daughter showed obvious signs of congenital heart disease from an early date, suffering from dyspnœa, some degree of cyanosis, and backwardness in growth. There was a murmur heard to the right of the sternum, and the right ventricle was enlarged. This child hardly grew at all after eight or nine years of age and was very delicate. She died about the age of 13 years. There was no necropsy. A second daughter was born after this child and has maintained good health.

The children by the second husband of Mrs. A. B. have all grown up in satisfactory health. The eldest and second of the daughters and one of the sons have married and had normal children.

The third husband of Mrs. A. B. married a second time a daughter of an exceedingly gouty father, and has had two healthy children by her.

Remarks.—There are some noteworthy points in this remarkable family history. First, we find that the mother of the first son (Mrs. A. B.) came of a gouty stock. This son next married into a family with a gouty history, and his first child had a malformed heart. Secondly, we note that the children of the second husband of Mrs. A. B. were all free of such malformations. Thirdly, we find that two of the children by the third husband (gouty history on both sides of the family) had cardiac malformations. Fourthly, it appears that a coalescence of gouty proclivity in both parents in the third marriage tended to favour these malformations. This is in accordance with an apparent law that an intensification of any diathetic habit of body, both parents being the subject of it, leads to graver manifestations in the offspring.

I am not prepared to describe these instances just recorded as in any way indicating that such untoward sequels of the intermarriage of persons, each issuing from gouty ancestors, are to be regarded as common or likely to occur. I have no knowledge of any histories or literature in which such events have been noted or recorded. The facts related here are certainly striking and noteworthy, and I think they are worthy of publication if only to stir further inquiry.

Dr. A. E. Garrod[2] has recorded several cases of congenital malformation of the heart in which there was a strongly marked history of true rheumatism. In one instance the mother had rheumatic fever in the seventh month of her pregnancy. He directs attention to other deformities associated with the cardiac defects. In 11 out of 15 cases there was distinct history of rheumatic fever in near relations.

It is certain that subjects of the arthritic habit of body are specially prone to infection in early life by the specific (exogenous) toxins of rheumatism, and in later life to generate the (endogenous) morbid metabolic products which determine the onset of gout in many and varied phases.

It is now generally admitted that the cardiac malformations,

[1] Sir William Jenner was of the opinion that such children were bad subjects for the exanthemata.

[2] St. Bartholomew's Hospital Reports, vol. xxx. p. 53, 1904. "On the Association of Cardiac Malformation with other Congenital Defects."

of which we have clinical and pathological knowledge, are determined, and occur, about the seventh week of fœtal life.[3] Hence the old idea of shocks and strong maternal impressions during any period of pregnancy is now much, or altogether, discredited by pathologists as an etiological factor in such cases, and the majority of such cases are rightly to be regarded as developmental defects, and not as results of endocarditis in the embryonic stage.

While paying little attention to the idea of strong maternal impressions, we may yet suspend our judgment respecting the influence sometimes of lesions due to rheumatic, gouty, and syphilitic toxins on the fœtal endocardium. The latter are certainly most rarely met with. We have to remember that the placenta is permeable by micro-organisms and toxins, and further studies in this direction are very desirable.

THE VARIABILITY OF AGGLUTINATION OF B. TYPHOSUS AND M. MELITENSIS BY NORMAL SERA AND ITS IMPORTANCE IN LABORATORY DIAGNOSIS.

BY MILITARY ASSISTANT SURGEON E. C. R. FOX,
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IN spite of the discovery of many new tests for the existence of specific bacterial disease the test of serum agglutination continues to hold an important place in diagnosis. This is especially the case for typhoid fever, and physicians still rely very largely upon laboratory findings for its diagnosis.

Now a very common question which is put by the physician who receives a report upon a serum which he has sent to a bacteriological laboratory is, What dilution of serum giving a definite agglutination am I to regard as diagnostic of typhoid fever? The laboratory report may only state the fact of agglutination in a given dilution and consider that that is all the help it can give in the matter. For purposes of discussion one feels inclined to alter the form of the physician's query, and ask, What dilution is to be regarded as affording strong evidence that the disease in question is typhoid fever? The answer should strictly be based upon the degree of certainty afforded by the reaction. In some cases the reaction cannot be regarded as justifying an altogether positive statement, and again different persons hold different views as to what constitutes certainty. One person is satisfied when the odds in favour are 10 to 1; another requires at least 100 to 1. We may put this in a more familiar form by saying that one diagnostician is pleased when his diagnoses are correct nine times out of ten, and another only when they are correct 99 times out of 100.

Agglutinations in low dilution cause particularly great difficulty, not only because of our want of exact knowledge of the variations which may occur in a healthy serum, but also because of the necessity for differentiation of the action of co-agglutinins. A "typhoid serum" will to a greater extent than a normal serum agglutinate B. coli, B. paratyphosus, and others of this group. A normal serum, again, will agglutinate the B. typhosus up to a certain dilution, and we require to know, not only to what dilution, but also the frequency of its occurrence. Lastly, different strains of the typhoid bacillus show great differences in their susceptibility to agglutination by typhoid, paratyphoid, and normal sera.

Now many standards have been laid down as to the degree of agglutination which is characteristic of typhoid fever. Most of these may be called safety estimates. Few of them refer to such points as the degree of agglutinability of the particular laboratory strain used with normal sera, and seldom refer to the degree to which confusion with paratyphoid disease may occur. An ideal way of expressing the results of an agglutinating test would be to give it in this way:—

Agglutination with B. typhosus up to 1 in 64; probabilities against the serum being normal, 10,000 to 1; against its being a B. paratyphosus serum, 80 to 1; against its being a B. coli serum, 50 to 1.

I have only taken the odds at random in order to illustrate and explain the principle which is involved. But how are these probabilities to be arrived at? Briefly stated, they are to be obtained by an application of statistical methods. Thus they may be obtained for normal sera by examining a very large number of healthy individuals as to the agglutinating power of their sera—so large a number as to give, by its very largeness and uniform distribution of values, approximately actual probabilities of occurrence for any given dilution. But it is almost impossible to obtain numbers large enough to satisfy this requirement. The next method would be to take a reasonably large number of individuals, set down the frequency distribution of agglutination dilutions, and fit a curve to the observations. This curve would give the real probabilities with a correctness which would depend partly on the actual numbers observed and partly on the degree of variation found. But to fit such a curve to a distribution requires a mathematical knowledge which many laboratory workers like myself do not possess.

The worker who has not the knowledge, and who is dissatisfied with such a very defective presentment of his facts as an average or a single percentage, has still a method open to him. It consists simply in giving the whole of his results in the form of a frequency distribution, and calculating by simple arithmetical procedure the measure of the variability of that distribution. It may then be possible on certain assumptions and in simple cases to calculate the probabilities for and against a particular value corresponding, as the case may be, to a normal state or to a specific diseased state. It is most important, also, to state exactly the circumstances under which the frequency distribution has been constructed. This last precaution is required in order to set at rest any doubts which might arise regarding the possibility of selection of cases. My own work refers to the differentiation of test typhoid and Mediterranean fever sera from normal sera. My cases were simply taken haphazard from amongst the patients attending the Pasteur Institute for anti-rabic treatment. I think I may, therefore, exclude the possibility of selection here. The individuals were all adults—natives of India.

The calculations of variability and probability referred to above have not been actually made because the successive dilutions used in testing the agglutinating power were, through inadvertence, increased not additively but as simple multiples of each previous dilution. That is to say, the intervals between my groups were not the same throughout, which they ought to have been. The frequency distributions only are given.

TABLE I.—*Agglutination B. Typhosus with Normal Sera; Strain "Douglas."*

Emulsion killed at 60° C. for half an hour; 0·5 per cent. carbolic acid added.

Dilutions of serum.	Under 2	2	4	8	16	32
Frequency	38	55	17	1	1*	0

* History of long-continued fever 12 months ago.

All agglutinations were taken to their end point as given by the series of dilutions 2-fold, 4-fold, 8-fold, 16-fold, 32-fold, 64-fold, and so on. Only the complete agglutination was recorded. An agglutination at a 4-fold dilution, and negative at 8, might have agglutinated at the point 6, and it is unfortunate that these intermediate values were not determined throughout. The series by simple multiples, however, allows of a simpler technique.

Looking at the distribution, we see that the agglutinations given by normal sera are very low, quite a large proportion not giving the reaction even in a two-fold dilution. In order to determine (1) what the effect of heating of the emulsion and addition of carbolic acid might be on the agglutinability of the organism, and (2) what the variations in agglutinability of different strains might be, the following observations were made:—

TABLE II.—*Agglutinations Using Three Different Strains of B. Typhosus.*

"Living." Normal sera. 109 observations.

All strains compared were first standardised to give approximately emulsions of equal density of suspension. Thus the cultures used were all of 24 hours. Culture tubes in which the density of growth was uniformly distributed were selected, and normal salt added in quantity proportional to the area covered by the growth. This precaution was

[3] For an admirable discussion of the whole subject the reader is referred to a communication by the late Dr. George Carpenter in the Royal Society of Medicine Transactions, vol. ii., No. 9, July, 1909.

necessary in order to exclude as far as possible differences in agglutination due purely to differences in the density of the emulsions used.

Strain "Douglas."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	2	18	53	31	5*	0	0

Mean = 5·3, or excluding the fever cases 4·8.

* 3 had a history of long-continued fever.

Strain "Berlin."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	0	16	30	47	13*	2†	1†

Mean = 7·9, or, excluding fever cases = 6·9.

* No history of fever.

† Had a history of long-continued fever.

Strain "Kral."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	0	0	0	0	0	1	108†

† Not put up to higher dilutions.

The conclusions to be drawn from these tests are:—

1. There are probably few sera which do not agglutinate B. typhosus at least in a two-fold dilution.

2. Strain "Berlin" gave agglutinations with higher dilutions of sera than strain "Douglas," but nothing much over 16-fold was likely to be frequent.

3. Strain "Kral" was agglutinated with normal sera up to a dilution of 1 in 64 and over. As a matter of fact, this strain agglutinated even with physiological salt solution.

It is obvious, then, that a laboratory finding must vary considerably with the particular strain used, and therefore it is very essential to have a knowledge of the peculiarities of the strain used. It is quite possible, too, that a given strain might in course of time alter as regards its agglutinability with normal sera. Such conditions might be those afforded in the plains of India in the hot weather. Strain "Kral" evidently could not be used in our laboratory agglutination tests, and the choice of a strain lay between "Douglas" and "Berlin."

TABLE III.—*"Douglas" and "Berlin" Strains.*

"Living" emulsion. Showing the agglutinations obtained with the same individual's serum on 30 consecutive days.

Strain "Douglas."

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	0	1	28	1	0	0	0

Strain "Berlin."

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	2	3	16	8	1	0	0

From these distributions we see that strain "Berlin" varied in its agglutination more than strain "Douglas," even with one and the same individual's serum. I chose strain "Douglas," therefore, for the final test of agglutinability with normal sera.

TABLE IV.—*Strain "Douglas" B. Typhosus.*

Living emulsion; sera of healthy individuals; 500 observations.

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	6	92	223	146	29*	4x	0

* 8 gave a history of long-continued fever.
x 4 " " " "

The sera of healthy individuals, therefore, as far as these observations go, do not agglutinate B. typhosus "Douglas" in higher dilutions than 1 in 16, or possibly 1 in 32. The probabilities, accordingly, in favour of a dilution of 1 in 64 being abnormal are likely to be higher than those of its being normal. We cannot, for want of the necessary observations, consider the case of B. paratyphosus as against B. typhosus. These are being carried out.

The question of co-agglutinations or of group reactions has never arisen in the case of M. melitensis, and the problem of differentiation of specific sera from normal sera becomes here comparatively simple.

TABLE V.—*M. Melitensis: Frequency Distribution of Agglutinations.*

Emulsion killed at 60° C. for half an hour. 0·5 per cent. carbolic acid added. 612 observations.

Serum dilutions.	Under 2	2	4	8	16	32	64	128
Frequency	184	349	60	15	2*	1x	1x	0

x Definite clinical histories of having had Mediterranean fever recently.

* No history of fever. One of these two individuals, a laboratory attendant, showed a very high phagocytic count to Mediterranean fever. In this individual, however, the opsonin was thermolabile, as the following experiment shows.

Mediterranean fever serum, thick emulsion	35·1§	Mediterranean fever serum heated 60° C.–15 minutes— Thick emulsion	28·0§
Serum of laboratory attendant, thick emulsion	21·3§	Thin "	6·3§
Mediterranean fever serum, thin emulsion	4·4§	Serum of laboratory attendant heated 60° C.–15 min.— Thick emulsion	0·3§
Serum of laboratory attendant, thin emulsion	4·3§	Thin "	0·2§

‡ Obtained from a patient suffering from Mediterranean fever.
§ Phagocytic count per leucocyte.

The serum of this laboratory attendant, then, gave a high agglutination and a high phagocytic count, and yet there is no reason from a consideration of its phagocytic action to suppose it other than a normal one.

But before closing this investigation into the agglutinating power of normal sera on B. typhosus and M. melitensis, it will be interesting to give some indication of the degree of agglutination which can be met with in typhoid fever and Mediterranean fever respectively. Instead of taking proved cases of typhoid and Mediterranean fever, I have had to take simply cases sent for investigation and suspected of being typhoid and Mediterranean fever. Only dilutions of 1 in 8 and upwards were used, as it is difficult to get serum for lower dilution from blood capsules sent to the laboratory.

B. Typhosus.

Serum dilutions... ...	8	16	32	64	128	256	512	Mean = 120·2
Frequency	4	6	7	9	11	4	4	

M. Melitensis.

Dilutions	8	16	32	64	128	256	512	1000	2000	3000
Frequency...	0	0	0	2	3	3	0	1	1	1

Remarks.

1. All strains of organisms used for the agglutination reaction should be tested quantitatively as regards agglutinability.

2. The laboratory strain used should be tested against the sera of as large numbers as possible of healthy individuals.

3. The laboratory strain should be tested against the sera of as large numbers of persons known to be suffering from the disease caused by the specific organism, and also of persons suffering from diseases caused by allied organisms, before differentiation between the diseases can be attempted by means of the agglutination test.

My grateful thanks are due to Captain W. F. Harvey, I.M.S., Director, Pasteur Institute of India, for initiating this investigation and for help and advice throughout.

Kasauli.

MEDITERRANEAN FEVER: ITS INFLUENCE ON THE FŒTUS IN UTERO.

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THE following case differs from that related by Major E. M. Williams, R.A.M.C., in the July number of the *Journal of the Royal Army Medical Corps* for 1907, inasmuch as the blood of the fœtus gave a positive reaction to Mediterranean fever at birth. The possibility of extra-uterine influence is entirely excluded in this case, since the fœtus was stillborn at the fifth month of gestation.

The patient, aged 17 years, was admitted on Jan. 22nd, 1911, to the Central Hospital, Floriana, suffering from fever of a fortnight's duration. Temperature 103 5° F., tongue furred, anorexia, constipation, pulse frequent, headache, urine normal, spleen enlarged, pregnancy (about five months). Treatment: benzonaphthol and salicylate of quinine. The patient's blood was examined and found to give a positive reaction to the Micrococcus melitensis in a large dilution. On Jan. 28th the patient aborted, and the fœtus was brought to the laboratory for examination, which was performed six hours after abortion.

There was no sign of putrefaction or maceration. The cord was cut, but was fresh and gelatinous. In order that no trace of the mother's blood should remain adherent to the surface of the fœtus its body was washed with soap and water, and then thoroughly rinsed in distilled water The left jugular vein was incised but yielded a mere trace

of blood; the whole of the left side of the neck was then incised, but still the quantity of blood obtained was insufficient for examination. Sufficient quantity of serum was obtained in sterile capillary tubes from the heart cavities, and the agglutination test was performed in various dilutions with an eighth generation culture of Micrococcus melitensis.

Dilution ...	1 : 40	1 : 80	1 : 200	1 : 300	1 : 500
Agglutination ...	Immediate. Complete.	4 min. Complete.	12 min. Complete.	20 min. Complete.	40 min. Slight.

The test was also applied to a small quantity of cerebro-spinal fluid obtained in a sterile capillary tube from the cerebral ventricles, with similar results—viz., a positive reaction with a tenth generation culture of Micrococcus melitensis in a dilution of 1 : 300.

Smear preparations were now made on nutrose-glucose-litmus agar from the spleen pulp, heart muscle, and brain. These were incubated in a Hearson incubator at 37° C. for four days. A growth was noted after 24 hours in the Petri dish over which the brain emulsion had been stroked, and as this could not be the Micrococcus melitensis it was put aside for examination, but was accidentally exposed to contamination and therefore disca ded. The remaining Petri dishes showed no sign of growth after four days' incubation, and none after a further period of three days.

Conclusions.—1. The fœtus in this case had been exposed in utero for 21 days to the influence of those abnormal conditions of the maternal blood consequent upon a severe attack of Mediterranean fever.

2. The child's blood and cerebro-spinal fluid yielded a positive reaction to Micrococcus melitensis in large dilution.

3. The Micrococcus melitensis could not be recovered from the internal organs of the fœtus.

4. Acute infectious diseases are known to be transmitted by the maternal blood to the fœtus in utero, endangering or interrupting pregnancy. Thus cases of intra-uterine variola are by no means rare, while intermittent fever has been known not only to attack the fœtus, but in some instances the attacks have continued after birth, and in all the child had at birth an enlarged spleen (Felkin, Goodell and Harris, Bonfils). There seems to be no reason, therefore, why Mediterranean fever should not be transmitted from mother to child during gestation.

5. The presence of agglutinins alone in the present case raises the important question whether, in the absence of the Micrococcus melitensis in the fœtal organs, they could have been elaborated by the fœtal blood, or whether they were transmitted directly from the maternal to the fœtal circulation.

Sliema, Malta.

ACCIDENTS WHICH HAVE OCCURRED THROUGH COLOUR BLINDNESS.

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I HAVE written this article because of the continued repetition of the mis-statement that no accident has ever been shown to have occurred through colour blindness.

One of the most extraordinary circumstances in this connexion is the refusal of the authorities to have the eyesight examined of those who are responsible for a collision caused by an error in the interpretation of the coloured signals. I am not aware of a single case in which either the Marine or the Railway Department of the Board of Trade has had the colour perception of an officer responsible for a collision examined, even by the very imperfect methods which are official with them. A man might just as well say that no person had ever died from a very common disease because this disease required for its certain diagnosis a microscopical examination of the blood, and this examination was never made.

I am also precluded from giving those cases in which officers have consulted me because they have found difficulty with coloured lights, and have caused, or nearly caused, an accident. I can with the greatest ease show how dangerous it is to employ colour-blind persons by testing them with my lantern in which the same colours are shown as those in their daily employment. Definite mistakes between the red, green, and white lights are made in a few seconds; and if the examinee be in control of a miniature engine or ship, which he has to direct by the lights, he will soon display his incapacity. I have demonstrated cases of colour-blind men who have passed the official wool test, and shown how they may be made to call green red, and red green, by the proper selection of the colours and their sequence.

Apart, however, from the difficulties which I have just mentioned, there are many cases of accidents which have been proved to be due to the colour-blindness of those in charge. The following is to be found on page 6 of the Annual Report of the Supervising Inspector-General of Steam Vessels to the Secretary of the Treasury, Washington, 1880:—

On the night of July 5th, 1875, there was a collision near Norfolk, Va., between the steam-tug *Lumberman* and the steamship *Isaac Bell*, the former vessel bound to, and the latter from, Norfolk. The accident occurred at about 9 P.M. on an ordinary clear night, under circumstances which, until recently, seemed more or less mysterious. The master of the steamer and all his officers made oath that at the time signals were made to the tug the latter was from one to two points on the steamer's starboard bow, and consequently the steamer's green light only was visible to the approaching vessel. Yet the master of the tug, whose statement was unsupported by any other testimony, asserted that the steamer's red light was exhibited, and he signalled accordingly. The discrepancy in the statements was so great that many persons uncharitably charged the master of the tug with being intoxicated, although no evidence was ever offered in support of the charge. By this accident ten persons lost their lives. Upon a visual examination of this officer under the rules during the past summer—namely, four years after the accident happened, and during which time there had been no question as to his sight—by the surgeon of the marine hospital at Norfolk he was found to be colour-blind, two examinations having been accorded him with an interval of ten days between them.

It is to be particularly noted that the colour blindness was not discovered in this case at the time of the accident, but four years afterwards.

The following is a record of an accident occurring through colour blindness. Mr. Haynes Walton, in a letter published in 1877,[1] says, with regard to acquired colour blindness:—

A few years ago I was investigating colour appreciation, and the first instance of the acquired defect that came to my knowledge was in the person of an engine-driver. This man confessed, after an accident through his not distinguishing the red signal, that he had gradually lost his colour power, which had been perfect; and so sensible was he of his loss and its disadvantages that before the accident he had determined to give up the situation.

The following case is related by Dr. S. T. Armstrong.[2] He says:—

The master and owner of a steamboat on the Mississippi river brought a man to me for examination for colour sense. The man proved to be colour blind and on looking over the records his rejection several years previous was found; the man said he had not expected to pass, and stated that his steamboat had once collided with and sunk a steamboat on account of his inability to distinguish the signal lights. His would-be employer was aware of these facts.

The following case occurred in 1881[3]:—

Colour-blindness, New York, June 18th.—The pilot of the steamer *City of Austria*, which was lost in the harbour of Fernandia, Florida, last April, is proved to be colour blind. In this it would appear that he mistook the buoys, and his mistake cost the owners 200,000 dollars (£40,000). An examination showed that at a distance of more than six feet he could not distingush one colour from another. The physicians attribute the defect to an excessive use of tobacco. The services of the Marine Hospital surgeons were tendered to the local authorities without fee two years ago, but were declined.

The following is related by Dr. Joy Jeffries:—

Dr. Gintl, chief inspector of one of the Austrian roads, got the report of an accident due to colour blindness on the Finnish Road between Helsingfors and Tavastchus in July, 1876. It was caused by a colour-blind switch-tender showing a green instead of a red light to the approaching train.

The following quotations from two letters are very interesting:—

1. I have been on the railway for 30 years, and I can tell you the card tests and the wools are not a bit of good. Why, sir, I had a mate that passed them all, but we had a pitch into another train over it. He couldn't tell a red from a green light at night in a bit of a fog.[4]

2. Some years ago a collision occurred on a railway in consequence of a train over-running a signal; the driver was firm in his statement that the light was "green," whereas all the other men said it was "red." The driver was fined and afterwards continued at work as usual. He then made some other mistakes, which would have ended in collisions had not the fireman said, "Stop, mate." Without any cause being stated the driver decided to give up railway work and take to another occupation.[5]

[1] Times, Jan. 3rd, 1877.
[2] Brit. Med. Jour., Jan. 28th, 1888, p. 188.
[3] Shipping and Mercantile Gazette and Lloyds' List, June 29th, 1881.
[4] Recorded in Invention, Dec. 28th, 1889. An extract from a letter by "Thirty Years Railway Man."
[5] A letter by Mr. Stretton, published in Engineer, Dec. 6th, 1889.

The following is written by Captain Coburn[6]:—

The steamer *Neera* was on a voyage from Liverpool to Alexandria. One night, shortly after passing Gibraltar, at 10.30 P.M., I went on the bridge, which was then in charge of the third officer, a man of about 45 years of age, and who up to that time I had supposed to be a trustworthy officer, and competent in every way. I walked up and down the bridge until about 11 P.M., when the third officer and I almost simultaneously saw a light about two points on the starboard bow. I at once saw it was a green light and knew that no action was called for. To my surprise, the third officer called out to the man at the wheel "Port," which he was about to do, when I countermanded the order and told him to steady his helm, which he did, and we passed the other steamer safely about half a mile apart. I at once asked the third officer why he had ported his helm to a green light on the starboard bow, but he insisted it was a red light which he had first seen. I tried him repeatedly after this, and although he sometimes gave a correct description of the colour of the light, he was as often incorrect, and it was evidently all guesswork. On my return I applied to have him removed from the ship, as he was, in my opinion, quite unfit to have charge of the deck at night, and this application was granted. After this occurrence I always, when taking a strange officer to sea, remained on the bridge with him at night until I had tested his ability to distinguish colours. I cannot imagine anything more dangerous or more likely to lead to fatal accidents than a colour-blind man on a steamer's bridge.

A similar experience is thus related by Captain Heasley of Liverpool:—

After passing through the straits of Gibraltar the second officer, who had charge of the deck, gave the order to port—much to my astonishment, for the lights to be seen about a point on the starboard bow were a masthead and green light; but he maintained that it was a masthead and red, and not until both ships were nearly abreast would he acknowledge his mistake. I may add that during the rest of the voyage I never saw him making the same mistake. As a practical seaman, I consider a great many accidents at sea arise from colour blindness.

The following case is related by Mr. T. H. Bickerton in the *British Medical Journal* of 1887:—

A captain of a large Atlantic steamer, in answer to my inquiry as to whether he had ever come across a colour-blind man, gave me the following information.

One night, while lying in his berth, he heard the officer on watch sing out, "Hard a port!" He at once rushed on deck, and asking the officer what was the matter was answered: "Red light ahead, sir." He looked, and seeing on the starboard bow a green light at once had the helm starboarded. He could not understand how such a mistake could be made as the officer was considered to be an experienced one. On a subsequent occasion a somewhat similar occurrence took place. The order, "Hard a port!" was given, and on the captain hurrying on deck he found that the man had mistaken the pyrotechnic lights by which vessels at night signal the name of the company to which they belong, and which was shown on the starboard side of the advancing vessel for its port light. On each occasion a probable collision was only averted by the prompt intervention of the captain. On the owners of the vessel being informed by the captain of these incidents the man was examined, found to be colour blind, and dismissed.

Mr. Bickerton gives a most convincing example of how an accident may occur through colour blindness, and also of the inadequacy of the official Board of Trade methods. He writes in the *British Medical Journal*, Vol. I., 1900, p. 621:—

In February, 1897, the 4000-ton steamer *D*——, belonging to Liverpool owners, was in the North Sea. The time was night, and the second officer, who had passed for second mate in 1894 and first mate in 1895, was on the bridge. By accident the captain came on deck, and was horrified to find his vessel making straight for an approaching sailing ship. The second officer had seen the approaching craft's green light and mistaking it for a white one, supposing it to be exhibited on some stationary craft, kept his course. A minute or two more and it would have been too late to avert a disaster, and probably the resulting collision would have sent one, if not both, vessels to the bottom. As it was, however, the captain grasped the situation at once and promptly starboarding averted the danger of collision, but not until the two vessels were less than a length apart.

On reaching home the officer was re-tested by the Board of Trade and passed as possessed of normal vision. He went to sea again. He freely confessed that he could never distinguish with certainty a green from a white light.

This and the previous case are even more convincing than those in which accidents occurred, because accidents were only obviated by the prompt action of the captain.

One of the latest is the wreck of the British steamship *Australia* at Port Phillip on the morning of June 20th, 1904 The pilot who caused the accident was subsequently examined and his vision was found to be: right eye 6/36 partly, left eye 6/36 partly.[7] The colour vision, tested by Holmgren's wools, was normal, but tested by luminous discs considerable illumination was required to elicit a satisfactory discrimination of some of the colours. The same pilot was in charge of the ss. *Indraghiri* on March 10th, 1904, when she ran aground to the north-west of the entrance to the South Channel. The night was dark but clear, and the lights were visible. The pilot, however, failed to see the occulting light at No. 15 buoy. It is noteworthy that if the pilot had been examined after the wreck of the *Indraghiri* the wreck of the *Australia* would probably have been prevented.

I have not given those cases of collisions which have occurred on a clear night, and for which no apparent cause was to be found, and of which the lay papers state that it would have been thought that only a madman or a blind man could, in the conditions, have caused an accident. The examples I have given show that colour blindness of the navigating officer is an easy explanation of the mystery.

Willesden Green, N.W.

[6] Mercantile Marine Reporter, vol. xiv., No. 162.
[7] Barrett and Orr, THE LANCET, Oct. 29th, 1904, p. 1202.

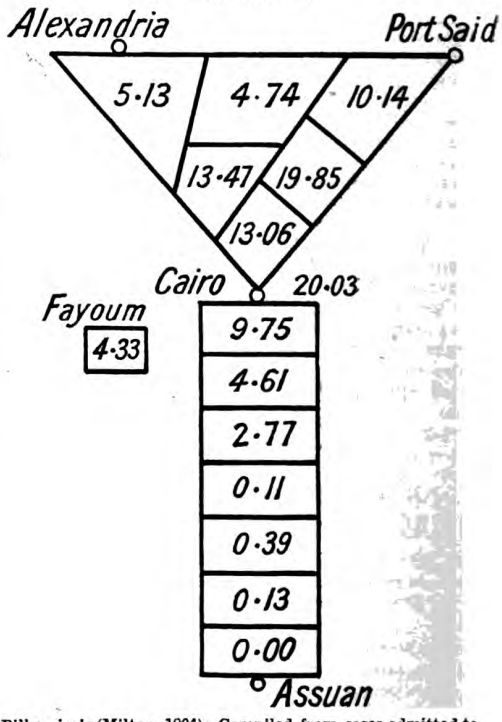
NOTES ON BILHARZIOSIS AND ANKYLOSTOMIASIS IN EGYPT.

BY G. W. G. HUGHES, M.R.C.S. ENG., L.R.C.P. LOND., CAPTAIN, R.A.M.C.

Bilharziosis.

IN the Records of the Egyptian Government School of Medicine for 1904 are some interesting notes by Mr. Frank Milton on cases treated at the hospital and found to be suffering from bilharziosis. He tabulated them according to the provinces from which they came, working out the number of cases per 100,000 of population of each province. I have shown these figures in a diagram (1), giving roughly

DIAGRAM 1.



Bilharziosis (Milton, 1904): Compiled from cases admitted to Kasr-el-Ainy Hospital, Cairo. Figures represent proportion of cases per 100,000 of population of each province. *Note.*—Cairo: Probably most of these cases came from the provinces originally.

the geographical position of the provinces, the triangular portion representing the Delta, with Cairo at its apex; the elongated portion the long, narrow valley of the Nile of Upper Egypt, with the Oasis of the Fayoum on the west. Mr. Milton says:—

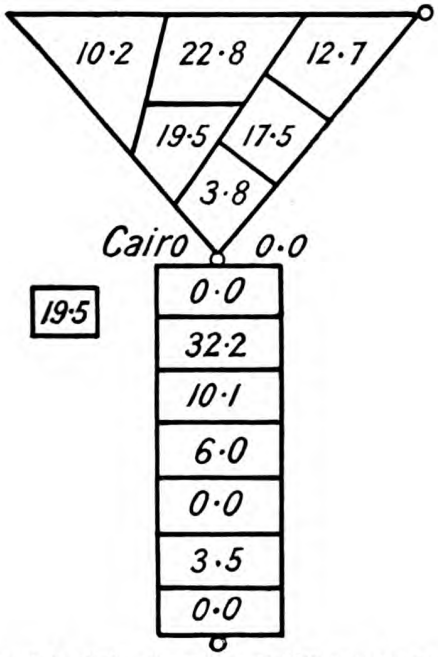
The disproportion between the number of cases of bilharzia from the two natural divisions of the country is so very marked that there must be some very well defined cause constantly acting, and this, I believe, is to be found in the way in which water is supplied to the different provinces for the purposes of irrigation. ..... Thus the peasant from Lower Egypt has a much longer period of time during which he is exposed to the chance of infection, and infection is more frequently repeated than is the case with his brother in Upper Egypt.

The difference in the water-supply referred to is that in Lower Egypt (the Delta) the land is watered perennially,

whereas in most of Upper Egypt "basin irrigation" is employed, and the land is dry for many months in the year.

The Egyptian army is a conscripted army, and the recruits are examined and selected by medical officers in the various provinces, and the required numbers are sent to Cairo, where they are again medically examined. Part of this second examination is a microscopic examination of the urine. The men sent to Cairo are all apparently healthy and strong, but as many as 7·5 per cent. of these are found to have bilharzia ova in the urine. Out of 1516 found fit in the provinces, 115 were found to have bilharziosis. In the second diagram I

DIAGRAM 2.



Bilharziosis (1910): Percentages of 1516 men apparently healthy and fit for the army and found to have bilharzia in urine.

have distributed them according to the districts from which they came, to compare with the first, but the numbers are really too small to give an accurate idea of the distribution. It must be remembered that these are young men of 21 years of age.

Ankylostomiasis.

One of the most striking results of ankylostomiasis in the young is the stunting of growth. When the young men of Egypt are called up at 19 years of age to be balloted, two classes are at once rejected—(1) those who are blind in one eye or in both, or are deformed or maimed; and (2) those who are under 155 cm. (5 ft. 1 in.) in height. I wish to draw attention to this second class.

The average height of these "short men" is about 150 cm. (4 ft. 11 in.), and it is found that though a very small number of them may be really under age and others are normally undersized, the great majority are suffering from obvious anæmia, or show evidences of having suffered from it. Not only undersized, but with childish voices and genitals, one would gauge their age at 12 or 14 rather than at 19 years.

The numbers of these unfortunate boys give a very good idea of the extent of the ravages of ankylostomiasis among the male population in Egypt. In the third diagram the figures represent the percentage of youths rejected as being under 155 cm. As in the diagrams for bilharzia, the Delta shows a far greater prevalence, the figures becoming lower towards the south. Another noticeable point is the comparison between the large towns of Cairo and Alexandria and the rest of the country.

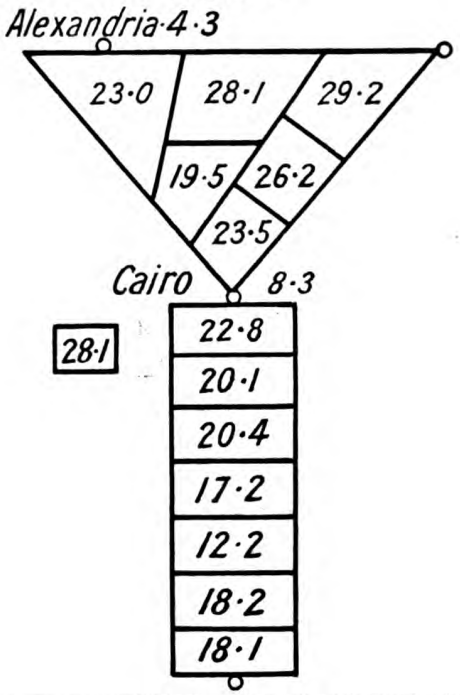
These figures do not represent, of course, the full numbers of men who have this "Egyptian chlorosis," far less of those who harbour the ankylostoma. If they represent anything, they only give an idea of the number of those who have suffered so severely from the disease between the ages of about 10 to 16 years that their growth has become stunted.

Remarks.

Are not the figures rather appalling? It is impossible not to be impressed by the shocking waste of life and waste of labour caused by these diseases. The huge percentage of eye diseases is more obvious, but not more serious. As regards eye diseases, it is pleasant to note that the educative influence of the travelling eye hospitals inaugurated by Sir E. Cassel is bearing fruit, and that in many of the principal towns permanent eye hospitals are being erected by public subscription.

But can nothing be done for ankylostomiasis and bilharziosis? Nothing at all is being done at present. Prophylaxis seems almost impossible, or at any rate so large and so difficult a task that one cannot blame the already over-worked and under-staffed public health authorities for their inaction. Could not the idea of a travelling eye hospital be utilised? Apart from the actual relief such a hospital gives to its patients, the *educative influence*, already

DIAGRAM 3



Ankylostomiasis (1909): Percentages of youths found under 155 cm. when 19 years of age.

referred to, is most important. Treatment by anthelmintics might be given free in every town where there is a government hospital. Thymol, however, is not a drug which it is advisable to sell wholesale without medical supervision, as quinine is sold to the public at post offices in India. But I am not sanguine enough to believe that the native in the country can be persuaded, or taught, or induced, within many generations, to observe European ideas of cleanliness. He works in mud, his house is of mud, and his habits are filthy.

Cairo.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—An examination will be held at St. Bartholomew's Hospital on Sept. 25th and following days, on the results of which the scholarships enumerated in the Students' Number of THE LANCET (August 26th, 1911, p. 571) will be awarded. The successful candidate in each case will be required to enter for the full course as a student at St. Bartholomew's Medical School immediately after the examination.

X RAY TREATMENT OF SARCOMA:

A CASE OF ROUND-CELLED SARCOMA OF THE RIGHT ANGLE OF THE LOWER JAW IN WHICH COLOSSAL DOSES OF X RAYS PROVED EFFECTIVE.

BY J. DELPRATT HARRIS, M.D. DURH., M.R.C.S. ENG.,
HONORARY MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT, ROYAL DEVON AND EXETER HOSPITAL.

THE following case may prove useful in marking out a new line in the use of X rays therapeutically.

The patient, a boy, aged 4 years, was brought to the Royal Devon and Exeter Hospital for a small swelling over the ascending ramus of the jaw on the right side. As he had at the time a catarrhal condition of the auditory meatus on both sides, the swelling was thought to be glandular, and the ears were thoroughly treated until the discharge ceased. During the next month the swelling became much larger, the whole bone on that side appearing implicated and the enlargement being now noticeable both inside the mouth and externally. A fortnight later the swelling had increased in size and a point of softening was noticed on the inside. At this time (June 25th, 1910) the case was admitted.

On admission the patient was drowsy and took very little notice. The temperature ranged between 98° and 100° F., rising on July 4th to 103·4° in the evening. On July 5th, under chloroform anæsthesia, an exploratory puncture in the mouth was made, and some soft material was removed for microscopical examination. Some slight gouging and examination with a probe was made in order to ascertain whether tubercular disease of the bone existed. No evidence of this was obtained. On July 11th the pathologist reported: "The growth proved to be small round-celled sarcoma."

After the operation the patient became more drowsy than before, the skin over the tumour becoming reddened and softened as though about to break down. The temperature ranged between 101° and 104°. Inside the mouth the condition was that the swelling was so situated that the teeth could not be made to touch, and mastication of food was prevented, the teeth chewing the tumour and causing a line of ulceration. Coley's fluid was now injected: July 15th, ♏ ½ was given; 16th, ♏ ¼; 17th, ♏ ⅜; 18th to 20th, ♏ ½; 22nd, ♏ ¾; 23rd and 24th, ♏ 1; 25th, ♏ 1⅛; July 26th to August 3rd, ♏ 1½. After the injections, which were given in the forenoon, the patient usually had an evening reactionary temperature of 101° to 102°, the temperature becoming normal in the morning. As a result of nearly three weeks injections, the swelling was noted as being "much smaller, the skin becoming normal in appearance, and the general condition much improved. The fluid was sometimes injected into the tumour, at other times into the arm."

On persevering with this treatment it was noted that reaction was still obtained on August 20th, but on Sept. 9th, although ♏ iv. were given as one dose, no reaction was obtainable. The case being now in a latent condition and no further benefit appearing, on Sept. 18th, 1910, what must be called a colossal dose of X rays was given, since the word massive has already been used for far smaller doses. The child was prepared for the ordeal by being given a mixture of bromide and chloral in small doses during the day. A regenerating X ray tube (sparking from mica type) in good condition being selected, a glass shield and cylinder were used to protect other parts of the face, and to maintain the proper Sabouraud distance; an aluminium filter was used about half a millimetre in thickness; and the tube was illuminated with a 100 volt current, so arranged that 5 ampères passed through the primary of the induction coil. This on being measured gave a good Sabouraud dose in rather less than 20 minutes. This current was maintained for six continuous hours, from 6 to 12 P.M., with a short interval at 9 P.M. to soften the tube. This was made up later.

The house surgeon's notes run: "On next day the side of the face was very red, and later some inflammation of right tonsillar region. The temperature rose gradually for three days (Sept. 19th to 21st) from normal to 103·6°, but remained normal on Sept. 25th. There is a very definite recession in the apparent size of the growth. The outline of the jaw can be felt on all sides of the tumour. The ulcerated surface inside the mouth was quite healed on Sept. 25th."

On Sept. 28th a second dose of the same length of time and quantity was administered, being the fourth day of normal temperature. The house surgeon's note runs: "Tumour now feels about the size of a hen's egg and quite hard, arising abruptly from the inferior maxilla. No egg-shell crackling obtained."

On Nov. 9th my own notes run: "The condition now is that all soft parts of the tumour are more or less absorbed, and hence the projection into the mouth, and also on the cheek, is much reduced. The boy can chew and shut his mouth and open it widely. The bony condition is, however, one of considerable expansion still, but harder as though condensing. His general condition is much improved, and he is now lively and boyish. Seen from the foot of his bed, the two cheeks are not dissimilar." On Oct. 29th, and again on Nov. 26th, the same dose was repeated, being four colossal doses of 18 Sabouraud doses each.

I have omitted to state that on August 25th and twice a week after, for five times in all, the patient was given single Sabouraud doses during the administration of Coley's fluid. It was the failure of this treatment and that of Coley's fluid that induced me to try such large doses.

The child was now much improved in appearance and had put on many pounds weight. His parent desired to have him home, and he was made an out-patient. Owing to domestic circumstances his treatment was discontinued in December, but on Jan. 14th, 1911, another colossal dose was administered, there being a small lump palpable under a good layer of fat, for he was now fairly "chubby." He did well, and was regarded by his relatives as cured, and was allowed to play in the public grounds with other children.

In the month of May he was brought with the history of being knocked on the jaw by another boy whilst playing. On examination the tumour was much swollen out, and the teeth were kept apart by growth in the mouth as at first. It was hoped the great enlargement might be hæmorrhagic, and cooling lotions were at first applied. Later one colossal dose was given on May 13th, but no marked result followed, and finding that he was likely to sink shortly the mother removed him to her home to die there rather than in hospital. Thus the case ended untowardly, although there seemed every hope at one time that the daring treatment might prove permanently successful.

I have not read or heard of so large a dose being given, but I was driven to it by the hopelessness of the case in one so young, and the fact that radium treatment lends itself to prolonged sittings; for whilst radium rays are not X rays nor serve the same purpose, yet there is a similarity. I was also influenced by an expression I saw in the *Archives of the Roentgen Ray*, in which it was stated that "a good kick sometimes does more good than several slight pushes."

I believe there is a future for this form of treatment, and I have another case of cancer of the jaw undergoing similar treatment. Should others wish to try such colossal doses I wish to urge them to regulate their coils not to exceed in quickness 17 minutes to the Sabouraud dose, to filter with aluminium, and to take the temperature night and morning. One of my difficulties lay with the toxins which were liberated. Unless the temperature does rise no great good seems to occur, but it must be normal when the next colossal dose is given.

I think Coley's fluid did good at first, but the boy soon grew immune to it, and on reaction failing to occur no further benefit ensued. It is noteworthy that single Sabouraud doses given during the treatment by Coley's fluid produced no marked reaction. It seems improbable, then, that the reaction following the first colossal dose was in any way due to Coley's fluid, and none had been given for 12 days prior.

It seems clear that X rays are capable of producing necrotic changes of the cells, by which certain products are liberated which can be taken away by the lymph channels: these, on finding their way into the general circulation, set up febrile action, as large doses of tuberculin used to. It is for us to find out how much of this toxin the individual patient can contend with, and how large a dose of X rays is necessary to liberate the required amount in such cases as prove themselves amenable to this form of treatment.[1] I

[1] The thickness of aluminium used in this case was determined by our engineer as gauge 24.

wish to acknowledge the care shown by our then house surgeon—Mr. Vernon Starr—in keeping so clear a record of this important case, and also by Sister Hussey of the electrical department in carrying out so conscientiously the long sittings.

Exeter.

NOTE ON A CASE OF

ACUTE PLASTIC IRITIS, MARKEDLY BENEFITED WITH ANTISTREPTOCOCCUS SERUM.

BY A. A. BRADBURNE, F.R.C.S. EDIN.,

OPHTHALMIC SURGEON TO THE ORMSKIRK HOSPITAL AND DISPENSARY, AND TO THE SOUTHPORT EDUCATIONAL AUTHORITY.

ON April 11th, 1911, I was asked to see, in consultation, a patient, aged 46 years, who for three or four days had been suffering from very acute pains in his legs, back, and chest. The previous day unmistakeable evidence of pleurisy had been found, and so severe had the pains been that four injections of morphine had been given in 24 hours.

I found the patient in bed, looking flushed and anxious. There was intense hyperæmia of the ocular and palpebral conjunctiva of the left eye. The cornea was so hazy as to almost occlude the iris, which could be dimly discerned lying attached to the lens capsule, causing naturally a very deep anterior chamber and a contracted pupil. Vision was reduced to light perception. The ocular movements were normal, the tension was high, but there was no tenderness to pressure. The right eye was normal.

Salicylates and potassium iodide had been given previous to my visit with the idea of combating what looked like an attack of rheumatism. Examination of the patient's teeth revealed the presence of suppuration around the roots, and this feature led us to come to the conclusion that the condition was due to a staphylococcal or streptococcal toxæmia. To settle this point a sample of his blood was taken and sent to Dr. A. Ramsbottom of Manchester. Meanwhile the iodide was stopped, and the dose of the salicylates increased to 20 gr. every four hours. Local treatment to the eye consisted of fomentations and drops containing dionine, atropine, and cocaine.

The patient passed a very good night, quite free from pain, but on his medical attendant visiting him next morning he found the right eye starting a similar but less intense attack, for which he promptly instilled a weak solution of belladonna. On my seeing him I found that the mydriatic in the right eye had dilated the pupil, leaving in the centre of the pupil a deposit of lymph. Atropine was immediately instilled, but only very little further dilation could be obtained, and again it left another ring of exudation on the lens capsule. The condition of the left eye was practically unchanged. In neither eye could any deposits of lymph (keratitis punctata) be made out.

The patient was removed to a nursing home. During the next 24 hours the atropine drops were continued, but the only result was to produce a peculiar tucking up of the pupillary margin of the iris. On the third day a report was received that the examination of the blood confirmed the view that the condition was streptococcal in origin, and upon this it was decided to inoculate with antistreptococcus serum. At 1 P.M. an injection of 10 c.c. of Messrs. Parke, Davis, and Co.'s antistreptococcus serum (polyvalent) was given. At 3 P.M. the temperature went up to 99° F., and the patient complained of itching of his left eye. At 7 P.M. the eye became more injected. This evidence of local reaction was particularly pleasing, and when he was seen next morning it was found that the deposit of lymph on the lens of the right eye had completely gone, and the liquefaction of the exudation had enabled the atropine to start dilation of the pupils. At the same time the texture of the iris became evident, its markings having previously been obscured by the lymph.

No medicine had been given since the injection. The patient was free from pain and had slept well, and was apparently perfectly comfortable and much brighter since he found his vision so improved. Forty-eight hours after the injection the right pupil became fully dilated and the left to three-quarters. In the left eye a curious condition was to be seen. Extending from the cornea to the anterior surface of the lens was a cone-shaped solid semi-transparent mass, bearing a striking likeness to a lump of camphor. Its broad expanded base was attached to the posterior surface of the cornea; its apex, resting on the lens capsule, corresponded to the size of the originally contracted pupil. As matters progressed this mass rapidly melted away, and in four days all that was left was a centrally situated nodule, surrounded by a series of concentric rings slightly coloured with iris pigment.

A second sample of blood had been submitted, and the report stated that there was undoubted evidence of streptococcal infection, and advised a second injection. This was accordingly done, but it caused a rise of temperature and upset the patient generally, without producing any particular benefit. The patient remained in the home for three weeks, and had all his teeth removed, the majority of which were found to be the seat of alveolar suppuration at their roots. A scraping taken from the root of one failed to grow any micro-organism whatever. I saw him finally on May 23rd and could find but very little trace of the recent trouble. The pupils were equal and active, there was not the merest spot to be found anywhere on the lens capsule or cornea of either eye. There was, however, some vitreous haze in the right eye, close behind, if not on, the posterior surface of the lens at its nasal side, and in the left all over the posterior pole, but in both eyes it was little more than a veil.

Since this case came under my notice I have received Darier's latest work, "Ophthalmic Therapeutics," and in it he makes the following statements:—

> The anti-diphtheritic serum is the only specific serum that has been recognised in ocular therapeutics. ..... At present we possess few sera the action of which is really specific. Meanwhile, ought we not to find out whether certain serums do not possess, in addition to their purely specific action, therapeutic properties that may be utilised in infections of a less serious nature or that have some analogy with the specific infections.

This case seems to show that certain antitoxic serums, even if they do not possess specific action, have marked therapeutic properties of liquefying and aiding absorption of the exuded lymph. Whether the good results were in any way due to the previous use of salicylates or not this one case cannot prove. It, however, proves the utility of antitoxic sera, as without it the case could scarcely have made such rapid and astonishing progress. Another question which seems of interest is whether the case was really one of the manifestations of so-called rheumatism of streptococcal nature. The fact that the salicylates relieved the intense pain seems to support this idea. One would be glad to have the views of bacteriologists and others on this case.

Manchester.

A CASE OF SYPHILITIC NECROSIS OF THE CERVICAL VERTEBRÆ.

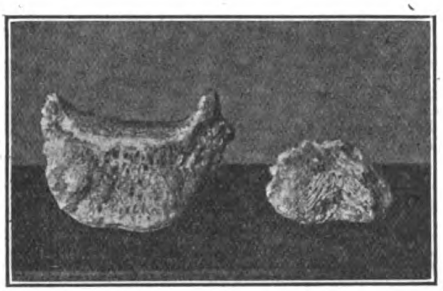
BY F. X. J. CALLAGHAN, M.B., B.CH., D.P.H. R.U.I.,

SENIOR PHYSICIAN TO JERVIS-STREET HOSPITAL, DUBLIN.

THE patient, a female aged 23 years, was admitted to hospital on August 17th, 1910. In 1906 she had contracted syphilis. The primary infection was very marked, so much so that portions of the vulval and vaginal mucous membranes were destroyed. Three months later she had suffered from sore-throat and a "spotty red rash." She was not medically treated for either the primary or secondary symptoms. In June, 1909, the patient was treated in the out-patient department of Jervis-street Hospital, Dublin, by Mr. J. L. Keegan for an ulcer on the right side of the neck. The ulcer had healed readily under antisyphilitic treatment. In June, 1910, the patient began to suffer from pain in the neck and from difficulty in swallowing; she was treated for this condition in another hospital and obtained some temporary relief from an operation performed on her throat (the throat was approached from the side of the neck, not through the mouth). On August 17th she was admitted to Jervis Street Hospital by Mr. Keegan, who kindly placed her under my care.

On admission the temperature was 101° F., the pulse-rate 130, and the respirations were 30. The patient complained of severe pain in the head and the neck. The pain was relieved by supporting the head on the hands, and was intensified by movement. The head was held thrust forward, the chin being directed slightly upwards. There were extreme rigidity of the neck and tonic contraction of the sterno-mastoid muscles, the cervical glands were enlarged on both sides, there was marked tenderness on pressure over the

upper cervical vertebræ, and the pupils were obstinately contracted. The patient complained also of pain and difficulty in swallowing. I was unable to examine the condition of the throat, as the attempt to open her mouth at all widely caused her extreme pain. Except for rigidity of the arms, I found no other signs of irritation or compression of the cord or nerves. The heart and lungs were normal. The symptoms pointed to pressure on the cervical portion of the cord, and a diagnosis of gumma pressing on this portion of the cord was made. The patient was given 10-grain doses of potassium iodide with 1/16th grain of perchloride of mercury three times daily, and was kept as quiet as possible. Though unable to swallow solids, she could swallow fluids in small quantities. On August 19th the patient stated that she felt something sticking in her throat, "something which felt like a piece of bone." The throat, however, could not be examined owing to the extreme pain which the necessary manipulations caused. Later in the day the patient coughed up a large piece of bone, which on examination proved to be the greater portion of the body of one of the cervical vertebræ (probably the third), the upper and lower anterior borders and the upper articular surface of the body being plainly shown on the fragment. Another fragment, apparently a



Reproduction of a photograph of necrosed fragments of cervical vertebræ.

portion of the body of the second, was coughed up some hours later. From this date the patient improved rapidly. The pain and difficulty in swallowing disappeared, but the rigidity of the neck persisted to such a degree as to suggest ankylosis of several cervical vertebræ. She was allowed to get up in ten days' time and when last seen (November, 1910) presented no abnormal sign or symptom beyond the cervical rigidity. She now wears a metal support for the chin and occiput attached to a jury-mast, and is thus protected from the disastrous consequences which would ensue were her neck suddenly bent forwards; the support also removes some of the weight from the weakened vertebræ.

The measurements of the larger fragment were as follows: Greatest transverse diameter, 2·1 cm.; vertical diameter, 1·3 cm.; and antero-posterior diameter, 1 cm.

The case was apparently one of syphilitic necrosis of a portion of the cervical vertebræ, followed by the formation of a sequestrum which was subsequently extruded through the posterior pharyngeal wall and so coughed up. I think the rigidity which is now present is due to the formation of new bone welding together the bodies of the upper cervical vertebræ.

Reference to the literature of the subject shows that syphilitic necrosis of the vertebræ is a rather rare condition; it usually affects the upper cervical vertebræ and begins in the anterior portion of the bodies. It starts as a periostitis which is followed by death of a portion of bone; a rarefying osteitis now takes place at the junction of dead and living bone, and so a sequestrum is formed. Subsequently the periosteum may form new bone.

As to the diagnosis, syphilitic necrosis may give rise to all the clinical features of tuberculous caries, but the onset in the former is more sudden and the progress more rapid. In most cases valuable information is obtained from the history of the patient, the presence of other evidences of syphilis, and by noting the effect of antisyphilitic treatment.

I wish to thank Mr. Keegan, surgeon to the hospital, for kindly allowing me to publish this case.

Dublin.

PORTAL PYÆMIA AND HÆMORRHOIDS.[1]

BY DAVID A. ALEXANDER, M.B., CH.B. VICT.

THE subject of the following account, a master workman, was at the time to which it refers (February, 1910) in appearance and form in the prime of physical manhood. The family to which he belonged, a numerous one and widely scattered, exemplifies in its various branches the usual morbid diatheses. One of his children is distinctly oxycephalic. In himself the only constitutional peculiarity to be noted was blanching or empurpling of the fingers and hands—that local asphyxiation which culminates in Raynaud's disease. I had previously attended him in September and in November, 1909, for attacks of which he had had a succession during recent years. With sudden abdominal pain in the right lumbar and iliac regions, tenderness, nausea, and dysuria, they suggested to me the passage of a renal calculus, being similar to those in another patient whom I was simultaneously attending, and in whom, without the confirmatory proofs of blood in the urine or the testicular direction of the pain, the symptoms at last abated with the expulsion of several small stones. There was no rise of temperature that I discovered during these attacks; they did not last long; the patient kept his bed for a day or two, and then resumed work.

On Feb. 16th, 1910, when I saw him, he had been seized with pain in the night on the right side of the abdomen as before, but there was now an area of tenderness and resistance in the appendicular region, and he had a temperature of 100° F. On the third day these symptoms were subsiding. But the patient did not, as on former occasions, quickly recover himself; he kept his bed, with an air of weariness, which left a misgiving as to his real condition. On the 21st a gangrenous odour was perceptible, which investigation showed to be due to a sloughing hæmorrhoid. The patient then stated that he had long been subject to piles, and that they had occasioned him no small inconvenience. The pile occupied the right side of the anal ring, was as large as an almond, and had prolapsed from within. It quickly sloughed off, leaving a tender area within the anus. There now appeared no reason to expect a delay in convalescence; there was no abdominal pain or tenderness. Temperature was absent, the pulse was steady, and the patient was quiet. I did not think him morbidly apathetic. Shortly, however, an icteric tinge was visible in the eye and skin, and bile appeared in the urine. The patient's wife also reported that he had had "shakings" in the night, the significance of which statement I overlooked and regarded the jaundice without apprehension. On the 26th, ten days after the onset of illness, going in at 9 A.M. I witnessed a rigor. It was impressive in its severity. The patient became deeply cyanosed; his teeth chattered; he shook; the bed shook; his temperature rose to 105·5°, the pulse-rate to 120; he was in great distress for 15 minutes, then began to perspire, and regained composure, but was much exhausted.

At this juncture he was seen with me by Mr. T. Carwardine. It was clear that we had to do with a virulent infection the seat of which was to be located or removed. Looking over the past history, it was very doubtful whether the earlier attacks were renal. So far, only bile had been found in the urine. The local signs of appendicular mischief were not in evidence, some pain only being elicited by deep pressure in the right loin. There was a little flatulent distension of the abdomen, but no hepatic tenderness or increase of dulness or splenic enlargement. Of typhoid infection, recent or remote, there was no proof. The breath had an acetous odour. There remained the anal area and the site of the sloughed pile. Here the canal was found to be still tender to the touch, bleeding slightly. The rectum, considerably ballooned, presented on the right side some resistance to the examining finger as though the walls were thickened. Nothing comparable to an abscess sac was encountered. It seemed reasonable to consider the anus as the site of infection, to attribute the pain to phlebitis in the portal veins, and in the icterus to see proof that the liver was already invaded. This was not a condition for operative intervention and only

[1] A paper read at a meeting of the Bristol Medico-Chirurgical Society.

the gravest prognosis could be offered. The patient was removed to a nursing home for greater care or possible emergencies.

Day now succeeded day without diminution in the recurrence or the violence of the rigors. The whole picture of the disease was one seldom to be seen outside tropical clinics, composure and apparent safety suddenly changing to danger and distress. In a fortnight the patient was much wasted; the feet and legs were œdematous, abrasions appeared at bony prominences, here and there were minute ecchymoses, and small subcuticular abscesses began to form.

In March the crural veins of the right leg became thrombosed, signified by increased swelling and persistent pain. Meanwhile the local condition of the anal canal had improved. No collection of pus could be detected in the rectum, although a little was now and then apparent in the motions. The urine now began to run clear of bile, the rigors to cease, and the daily range of temperature to fall. By the middle of April, however, the pulse began to flag, concomitantly with the discovery in the abdomen of free fluid and another rise in temperature. After eight weeks of a septic state, therefore, sometimes expressing itself in a hyperpyrexia of 107° and with the complications already seen, little ground of hope remained.

Rallying again, the patient passed another fortnight without increase of abdominal fluid, with recovery of heart force, freer urinary flow, and declining temperature, and in this condition he returned to his own house.

In May increasing pain and localised tenderness of the right calf pointed to abscess formation, and on the 21st, under local anæsthesia, an incision was made and about a pint of foul greenish pus was evacuated. Continual irrigation followed until, in three weeks, healing was complete.

A favourable course now seemed to open, but it was interrupted towards the middle of June. Gastric discomfort was complained of and dyspnœa; the temperature, reduced almost to the normal, again showed an ascent, and these symptoms were associated with extension from the flanks and rapid increase of ascitic fluid. Large veins appeared in the hypogastrium, the whole abdomen was distended, and the parietes were œdematous. This condition was relieved on June 27th by the insertion of a trocar and with the escape of some quarts of clear fluid. Thenceforth ascites was controlled by diuretics and purgatives; cutaneous œdema lingered for a while only and the enlarged veins ceased to be visible. Convalescence followed, and a visit to the country was possible in August.

In October an attack of two days' duration recurred similar to those of the preceding year, with pain of the same distribution and with a slight rise in temperature. In the time which has since elapsed the patient has regained his former weight and vigour, and maintains them, complaining neither of pain nor hæmorrhoids.

It will now be asked what the bacteriology of the infection was and what it contributed to treatment. First, of the urine: it yielded nothing; there were neither tubercle bacilli, as evidence of chronic tuberculosis, nor colon bacilli. Blood drawn from a vein on March 3rd, when the rigors were frequent, proved also to be sterile. It showed a moderate leucocytosis. The subcuticular abscesses were not investigated, being abraded almost as soon as formed and prone as they were to surface contamination. When the crural abscess was emptied in May it yielded a streptococcus brevis, and provided to Professor I. Walker Hall the means for an autogenous vaccine. One administration, indeed, of polyvalent serum had been made in the early days of the infection, but it happened that afterwards the patient was more than usually prostrate, and no second dose was given. So with a vaccine; there was no encouragement to continue what might not be a specific at all. When at last the autogenous vaccine was in our hands the time for its value to be proved had passed. With the crural abscess the septic process had come to an end; the abdominal distress, ascites and anasarca, as it turned out, depended on no fresh focus of infection, but rather was a mechanical result of portal obstruction, and I hesitated to use it.

A few observations may be made upon the course and incidents of the illness. The patient was a good patient; he took gratefully all the care shown him and the comfort he derived from assiduous nursing. He was content, not to say cheerful, even when, as his weakness deepened, he ceased to expect his restoration. He slept much; was often delirious, too, and required a sedative. His appetite was always better than his alimentation; he wanted common food, even whilst his motions were large and fetid or tympanites was calling for turpentine enemata. He took much milk, and of brandy some four to six ounces daily when at the worst. Intestinal antiseptics (excepting iodoform suppositories) were not given continuously. Utropine was early discontinued. Strychnine was frequently required, especially after the severer rigors. Quinine was given at the beginning in 5-grain doses. From perchloride of iron, in large doses, I believe he derived advantage, and perhaps also later on from the sulphates of iron and magnesium.

The temperature charts presented a fair conspectus of the case. Evening rise and morning fall were not quite regular during the first month, and the constancy of the temperature was then further broken by the recurring seizures. Of these some 30, the greater number, were crowded into 13 days. The daily range at this time lay between 98° and 104°, exceptionally exceeding the latter, as on March 3rd, when 106·6° was recorded with and also without a rigor. In the first half of April the reading was 98° to 100°. Irregularity and perceptible rise accompanied the appearance of ascites and cardiac feebleness of that time. In the middle of May pyrexia was only slight, until the crural abscess pressed for relief, when 100° was again reached. And the same rise from an almost normal was repeated at the end of June when the trunk was dropsical. The pulse record 80, 96, 120, 130, followed remission or exacerbation of other symptoms.

Reviewing the whole case, I think it probable that all the previous seizures were of the nature of the last: in the former a limited tract of the hæmorrhoidal veins being thrombosed; in the latter, extension having taken place, there resulted, what must be rare in the experience of any—portal pyæmia as a complication of hæmorrhoids. There may remain a lingering doubt whether, in his present seeming perfect health, the patient has lost the disposition to reinfection—a doubt which qualifies one's satisfaction at his recovery.

Clifton.

THE PREVALENCE OF PULMONARY TUBERCULOSIS IN THE MERCHANT SERVICE.

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THERE is a widespread belief that a seafaring life is one of the most effectual remedies in the treatment of those who suffer from "weak chest," and no doubt to a certain extent and under favourable conditions this is true. Life at sea would naturally appeal to the lay mind as an ideal one for people in indifferent health, and especially for those with any tubercular tendencies, in that the open-air treatment is to be obtained here in its truest and most economical form. But when one inquires into the circumstances under which the sailor lives on the sea there are many fallacies intimately connected with this belief, and the benefit derived is in many cases meagre compared with the disadvantages and even danger closely associated with such a life. Not only is tuberculosis a very prevalent disease among sailors, as I shall try to show in this paper, but also cardio-vascular diseases and their effects are extremely common. The latter, however, are rightly attributed more to hard work, alcohol, and syphilis—a trio still closely connected with the sailor—than to inefficient accommodation and ventilation. I shall confine my remarks, therefore, to the influence of the latter defects on the incidence of pulmonary tuberculosis among the sailors.

To the patient who is already affected with pulmonary tuberculosis, and who can afford time and expense, a long sea voyage is still recommended as one of the best means of overcoming the effects of the tubercle bacillus. Undoubtedly in many cases much benefit is derived, and better results still would be expected in accordance with the present-day idea of treating tuberculosis if certain facts were taken into consideration. First, cases should be selected, and only those in which the disease is in its early stages and not rapidly advancing should be recommended for a prolonged sea.

voyage with any prospects of permanent benefit. Secondly, variations in temperature and climate ought to be taken into consideration. Long periods of bad weather, with frequent and sudden changes of temperature, produce very deleterious effects on patients suffering from diseased lungs. During these periods the patient is confined to his cabin, where more often than not the accommodation provided is very unsuitable and the conditions under which he lives, as far as ventilation and supply of pure air are concerned, are for the time being worse than they would be at his own home on land. Hence it is not surprising to find that many patients do not gain any material benefit from the treatment, and this no doubt accounts to a large extent for the disrepute into which it has of late years fallen.

It might be expected, however, that the sailor who presumably commenced his seafaring life in good health would maintain perfect health, and of all people would be the least liable to contract tuberculosis. In the merchant service, from which the statistics given in this paper are derived, such is not the case. The prevalence of the disease is marked and the suffering produced enormous. No better proof could be required of the infectious nature of pulmonary tuberculosis than that supplied by the frequency of that disease among the sailors, the vast majority of whom have no hereditary tendencies to that disease, but, on the contrary, are physically of such build and good development as to preclude any suspicion of that taint. When, however, a single member of a crew suffers from tuberculosis he becomes a grave danger to all the others. The insufficiency of the cubic space provided, the lack of proper ventilation and aeration, especially in cold weather, in addition to the want of sufficient sunlight—all these deficiencies aid in an unmistakable way the growth and dissemination of the tubercle bacilli. The increase of temperature below decks, especially in the engine-rooms and stoke, helps to dry the expectoration which is spat indiscriminately in all parts of the ship visited by the infected person. This dried sputum is constantly blown about by currents of air, is inhaled by others, or may be deposited on food or in drink exposed to the atmosphere. Fortunately, however, in the healthy and strongest members of the crew the tubercle bacilli, even if inhaled in the manner described, do not find a favourable medium for their growth and development, and the individual maintains good health owing mainly to his own powers of resistance. There are others, again, who from the nature of their ratings are less favourably disposed. Firemen, engineers, greasers, cooks, and stewards pass most of their time below deck in stuffy atmospheres, in ill-ventilated, dark, and dusty rooms, with the too frequent result that in the course of time anæmia is produced, health deteriorates, and they readily become a prey to the tubercle bacillus. Additional factors, such as the abuse of alcohol, venereal diseases, irregularities in diet and sleep, are all most potent causes of the debility and deterioration in health which precede and increase the susceptibility to pulmonary tuberculosis.

At the Dreadnought Hospital merchant seamen of all nationalities are admitted and treated. A special department of the hospital is set aside solely for tuberculosis, and open-air treatment is adopted in such cases as are definitely diagnosed as tuberculosis. Under this treatment, combined with as much nourishment as the patient can possibly consume, the results are good in many of the cases. After a stay varying from a few weeks to many months some of the patients gain vastly in strength and weight, and the disease appears for the time being to be quiescent. This, however, only holds good in those cases in which the disease is at its earliest stages. In others more advanced improvement is only temporary, and eventually a time comes when the patient begins to dislike his food; he gradually loses weight and strength, and the temperature gets more hectic in type until he dies. Patients of the former class, in the course of a few weeks or so, improve to a certain extent, and insist on leaving the hospital, under the impression that they are quite well again, or, at all events, that they are sufficiently recovered to resume their usual employment. The majority of these patients, however, after varying periods of absence in comparatively good health, eventually return to the hospital in worse condition than when they were previously admitted. These are the cases which are a source of great danger, in that they disseminate the disease, and not only make matters worse for themselves but infect their fellow shipmates, and thus, as it were, complete the life cycle of the disease.

To remedy this serious state of affairs there should be a definite understanding that no patient who has been treated for tuberculosis of the lungs should ever be admitted to the merchant service. By the aid also of thorough medical examination, and of inquiries into the previous state of health, all tuberculous cases should be rejected. By this means material aid in diminishing the incidence of, and the death-rate from, tuberculosis among seamen would be given.

The following tables have been compiled to show the total number of admissions to the Dreadnought Hospital of patients suffering from pulmonary tuberculosis in 21 years (1890–1910 inclusive); the annual number of admissions under each class and the death-rate; also the percentage death-rate from phthisis calculated from the total number of deaths from all causes. In Table I. is given the total annual number of admissions under each rating; in Table II. the total annual admissions of phthisis cases with the percentage death-rate; and in Table III. the total deaths from all causes and the death-rate from phthisis calculated from such total.

TABLE I.—*Total Number of Admissions under each Rating.*

Year.	Able-bodied seamen.	Firemen.	Engineers.	Cooks.	Stewards.	Officers.	Various.	Total.
1890	41	13	13	8	2	2	3	82
1891	45	24	8	6	9	3	4	99
1892	47	24	2	3	6	0	7	89
1893	39	30	9	4	8	0	2	92
1894	41	25	5	7	3	2	0	83
1895	39	23	10	8	7	2	3	92
1896	42	28	9	10	8	1	4	102
1897	41	31	7	7	9	0	3	98
1898	47	33	13	6	10	1	2	112
1899	38	34	15	13	7	2	5	114
1900	32	29	17	5	10	0	2	95
1901	36	24	5	8	6	2	3	84
1902	41	23	3	3	9	1	3	83
1903	40	26	4	5	3	0	4	82
1904	39	21	2	4	10	3	8	87
1905	35	14	5	2	9	1	10	76
1906	28	29	1	5	10	0	4	77
1907	38	21	4	2	4	1	4	74
1908	21	24	3	3	5	0	7	63
1909	29	21	6	3	7	0	8	74
1910	23	17	3	9	5	1	5	63
Total	782	514	144	121	147	22	91	1821
Per cent. ...	42·9	28·2	7·9	6·6	0·8	1·2	5	—

TABLE II.—*Total Annual Admissions of Phthisis Cases, with Percentage Death-rate.*

Year.	Admissions.	Deaths.	Percentage death-rate.	Year.	Admissions.	Deaths.	Percentage death-rate.
1890	82	35	41·6	1901	84	31	35·7
1891	99	33	33·3	1902	83	30	36·1
1892	89	31	34·8	1903	82	31	37·6
1893	92	28	30·4	1904	87	37	42·5
1894	83	32	38·5	1905	76	17	22·3
1895	92	32	34·7	1906	77	30	38·9
1896	102	39	38 2	1907	74	35	47·2
1897	98	28	28·5	1908	63	28	44·4
1898	112	35	31·2	1909	74	20	27·0
1899	114	37	32·4	1910	63	22	34·7
1900	95	37	38·9				

TABLE III.—*Total Deaths from all Causes, with Death-rate from Phthisis.*

Year.	Total deaths from all causes.	Percentage death-rate from phthisis.	Year.	Total deaths from all causes.	Percentage death-rate from phthisis.
1890	122	31·2	1901	130	23·8
1891	127	25·9	1902	142	21·1
1892	119	26·0	1903	113	27·4
1893	116	24·1	1904	125	29·6
1894	134	23·8	1905	116	14·5
1895	130	24·6	1906	136	22·0
1896	155	25·1	1907	144	24·3
1897	116	24·1	1908	127	22·0
1898	126	27·7	1909	100	20·7
1899	121	30·5	1910	123	17·8
1900	136	27·2			

On glancing rapidly over the foregoing tables, it will at once be apparent to anyone how great are the permanent disablement and loss of life from a preventable disease among a class of people who from the nature of their employment ought to show a very small percentage of deaths from such causes.

It is interesting to note with regard to the admissions that the total annual admission was at its highest in the years 1896–99 inclusive, and from that year onwards to 1910 the rate of admission has considerably and almost steadily decreased.

Classified according to ratings, the greatest number of admissions occur among the able-bodied seamen, among whom are included for convenience quartermasters, boatswains, ship's carpenters, and others who work on deck but are not classified under any of the other headings. The high admission-rate among the "able-bodied" may partly be accounted for by the fact that there are more sailors included in this than under any other heading, and it frequently happens that seamen of foreign nationality, unable to talk English, are admitted as sailors under this category.

Next come the firemen, and although the admissions among them are much less than in the preceding class, there is a very much greater incidence of phthisis among them than in any of the other succeeding classes—about equal, indeed, to the total of all the other sections put together. Stewards supply a greater percentage than cooks. Under the officer class are included first, second, and third mates and the captains. The rate among them is very small. Under the heading, "Various," are included stevedores, bargees, &c.

Death-rate.—It will be noticed that although the number of admissions has decreased the death-rate does not show a corresponding decrease. The highest number of deaths corresponds closely to the highest number of admissions, but the death-rate per cent. of total cases treated is highest in the years 1904–07–08. Comparing the actual number of deaths from phthisis with the total deaths from all causes, it will be seen that from one-fourth to one-sixth of the registered deaths are due to tuberculosis of the lungs. The highest death-rate per cent. calculated in total deaths from all causes occurred in 1890. The rate then slightly diminished until 1899, when it went up to 30, but since then it has kept below that figure.

To summarise the points brought out in the tables, it is seen that the number of admissions of cases of tuberculosis of the lungs has somewhat diminished during the last 10 years, but that the percentage death-rate out of the total numbers treated does not show a corresponding decrease, the highest figure, 47, occurring as late as 1907. This high death-rate is probably due to the advanced state of the disease in the majority of the cases before the patients seek treatment at the hospital. In the younger members of a crew who are admitted in a comparatively early stage of the disease the type is more often acute miliary tuberculosis, the course of which is very rapidly fatal.

If the crew of a ship were arbitrarily divided into two sections—viz.: (1) those who spend most of their time below deck, and (2) those who work for the most part on deck—it would be seen that tuberculosis is more frequent among the former than the latter. In the navy tuberculosis has decreased for the last 10 years. This is no doubt due to the fact that the conditions under which the sailor lives as regards sanitation and accommodation have vastly improved, and when cases of tuberculosis occur they are immediately invalided out of the service. In the merchant service there is still much room for improvement. Not only is there need of this in accommodation and ventilation, but the elementary principles of hygiene should, as far as possible, be instilled into the sailor and the danger of indiscriminate spitting brought before his notice by printed forms or otherwise. More stringent precautions also should be taken in that all subjects of tuberculosis should be discharged from the service, and no man who, on medical examination, shows signs of tuberculosis or gives a history of having suffered from it should be engaged for service on board ship.

But now comes the difficulty as to what is to be done with patients discharged as unfit for further service on board. Hitherto they have been allowed to drift about, and no provision has been made either in the navy or the merchant service by which the sufferers could be treated or given a chance to improve in health. Now that the National Insurance Bill includes the provision of State-aided sanatoriums, much good will be expected to accrue, but failing this it is high time that philanthropy extended its generous hand to provide a sanatorium exclusively for our sailors, on whom more than on any other members of the community the wealth and prosperity of the nation depend.

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A NEW THERMO-THERAPEUTIC METHOD IN GYNÆCOLOGICAL CASES.

BY S. FLATAU, M.D.,
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AGES ago the therapeutic instinct recognised the healing properties of warmth, and added them to its stock. But the employment of heat as a treatment, founded on scientific principles, dates from the time when August Bier collected, extended, and enlarged the earlier works of physiologists and pathologists in his system, "Hyperämie als Heilmittel."

As a matter of course the gynæcologists, too, were desirous of applying the advantages of hyperæmic treatment to their special branch, the accessibility of the female genitals favouring the introduction of heat. Finally, according to the researches of Goldscheider,[1] the abdomen seemed especially adapted to the stimulating properties of warmth on account of the numerous nerve endings susceptible to heat which it contains (Ruffini termini). We know, indeed, that warmth exercises an expanding effect on the vascular system and that the amount of blood in the skin operates on the neighbouring deeper-lying vessels in the sense of causing a more rapid exchange, a larger "turnover."[2] As a matter of fact, the abundant subcutaneous cellular tissue by its low conductivity (which was demonstrated by Fuchs[3]) forms a great obstacle to the penetration of heat when we desire to apply it only through the skin. But, on the other hand, by reason of the extraordinarily decreased speed of the blood in the pelvic nervous system, we may assume that the heat will not be too rapidly dispersed or lost, but that, on the contrary, it will accumulate. Moreover, the stimulating effect of heat-therapy increases, to a certain degree, with the degree of temperature and the duration of the application. It is on this hypothesis that thermo-therapy, in cases of pelvic diseases in women, must be built up.

But a long time passed before a useful and practical method, which was destined to receive widespread recognition in medical circles, made its appearance. Strictly speaking, the first applicable thermo-apparatus was that produced by Polano,[4] while working side by side with Bier and Klapp in Greifswald. In this apparatus hot air, up to a temperature of 100° C., was caused to circulate round the abdomen of the patient, the abdominal regions being isolated in a wooden case. But in spite of the excessive heat registered by Polano's thermometer, the

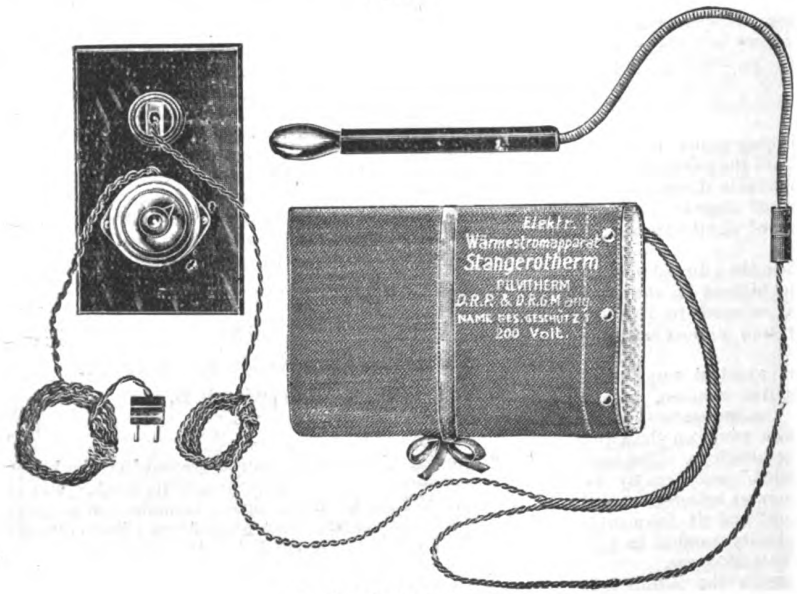
[1] Archiv für Psychiatrie, 1887.
[2] Matthes: Klinische Hydrotherapie, 1900.
[3] Zeitschrift für Biologie, vol. x., p. 73.
[4] Zentralblatt für Gynäkologie, 1901, No. 30.

temperature of the pelvic contents was very slightly affected, for heat which is applied to the skin penetrates it to only a very small extent. The subcutaneous tissues form a bad conductor. Furthermore, the perspiration which collects on the skin in large quantities, and with which the air in Polano's apparatus became saturated, formed another and still greater obstacle to heat penetration. If any hyperæmic result was produced in the interior of the pelvis it could only have been a very weakened, and if one may say so, a collateral, effect. Neither was the problem of raising pelvic temperature solved by the kataplasma ovens, heat boxes, and so-called thermophores, with highly saturated solutions of sodium acetate.

The early practical tests which I made in my private clinic were successful. During the application the pelvic contents were always raised several degrees in temperature—that is, the pelvic organs were really heated. My experiments were still more successful when the introduction of the instrument into the vagina was combined with an electro-thermophore which covered the abdomen (Fig. 2). Through the proximity of two hollow organs, the bladder and the rectum, we have a good opportunity to measure the increase of temperature and the influence of the heat introduced into the pelvis. Numerous measurements were made in this manner, and the temperatures were read on thermometers introduced into the bladder and rectum (after the latter had been cleaned by enema). Here I give the averages of a very large number of readings expressed in Centigrade:—

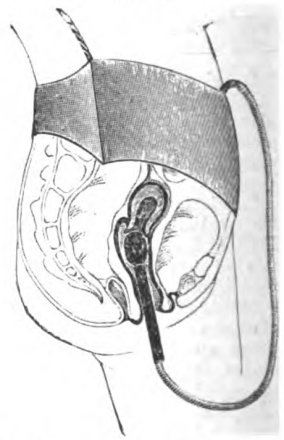
	After 1 hour.	2 hours.	3 hours.
Bladder	38·8°	39·8°	40·2°
Rectum...	38·5°	39·2°	39·8°

FIG. 1.



Dr. Flatau's "Pelvitherm."

FIG. 2.



Semi-diagrammatic view of the introduction of a "Pelvitherm."

Other gynæcologists endeavoured to obtain direct results in the diseased genitals. Incessant syringing from a sort of thermophoric vessel [5] was also recommended. Stratz [6] and Baumgärtner [7] designed apparatus by which they claimed that vaginal washings up to 50° C. might be carried out without scalding the external genitals. Finally Walser and Pinkus produced an instrument [8] which proved to be serviceable.

But the results of all these methods of applying heat are feeble and evanescent. Even if 20 pints of hot water are passed through the vagina, still the rise of temperature in the pelvic organs is practically *nil;* and, moreover, the processes require too much attendance. Hence arose the idea of Mirtl [9] and Stehlik [10] to construct a thermophore in the form of a "colpeurynter" filled with "thermaphore" salts, which could be introduced into the vagina. Unfortunately, the heating effect in this case also was insignificant, and the stock of heat in the thermophore decreased continuously instead of remaining constant.

To produce a source of heat that should remain constant was the problem to be solved in heating the pelvis. Its practical solution was only made possible by the improvement in thermo-electric apparatus. When I first saw the electric thermophore cushions, as made by the firm Heinrich Stanger, in Ulm, a solution of the problem immediately occurred to me. I made out of silver-plated metal a thick hollow rod ending in a sort of bulb (see Fig. 1). Within this is a mass of asbestos powder, which is heated by passing an electric current through it. A small indicator makes it possible to increase or decrease the temperature with sufficient delicacy.

The mode of application is the simplest imaginable. My apparatus can be connected up to any switch terminals or any electric lamp which can be replaced by a screw contact, and using either a continuous or an alternating current. The regulation of the heat introduced, as shown by the indicator, is best attended to by the patient, whose safest guide is her own sensations. There is no deposit of perspiration on the abdomen; the heat is absolutely dry. We know that, objectively considered, dry and damp heat are totally different phenomena, and subjectively, too, are differently felt; and dry heat is more agreeable to by far the most patients. My patients bore the application in all cases excellently; on other parts of the body, especially the breast and head, symptoms of their perception of increased temperature appeared as well as perspiration. Although measurements taken under the arm showed no increase of temperature in the body as a whole, increased activity of the heart and lungs was observed, but this was not severe enough to cause the patient inconvenience. If the vagina and the cervix uteri are examined in a mirror shortly after treatment, marked hyperæmia and hyper-secretion will be observed.

The diseases in which the apparatus is indicated are numerous, although greater experience in more extended medical circles is necessary before drawing hard-and-fast lines. Chronic disease of the para- and peri-metrium, chronic catarrh of the uterus and Fallopian tubes, so-called chronic metritis, exudation remains, dysmenorrhœa without evident cause, amenorrhœa in cases of uterine atrophy during nursing, all have shown symptoms of improvement under thermo-penetration. Catarrh in the bladder of long standing has also been favourably influenced.

[5] Pflanz: Zentralblatt für Gynäkologie, 1899, p. 1297.
[6] Ibid., 1898, No. 17.
[7] Monatsschrift für Geburtshilfe und Gynäkologie, 1897, p. 5.
[8] Ibid., 1899, No. 7.
[9] Wiener Medizinische Presse, 1899, No. 16.
[10] Münchener Medizinische Wochenschrift, 1899, No. 27.

On the other hand, the method is out of place in treating cases where there is fever, and in all diseases of the annexa in which pus is present or may be expected to form, and in tuberculosis of the genitals. As is well known, the gonococcus is hypersensitive to high temperature,[11] and hence diathermal experiments in cases of infection with Neisser's diplococcus would probably be attended with success. Usually I apply the instrument to patients for three hours daily, although, of course, there is no reason why this duration should not be increased. The temperature of the pelvis falls very slowly after the instrument is removed, so that the tissues only assume their normal temperature after one or two hours.

I demonstrated my apparatus before the Franconian Gynæcological Society on Oct. 24th, 1908, and spoke, too, of the extent to which it might be employed.[12] This I wish to emphasise because the whole idea was evidently in the air during the development of our electrotherapeutic methods—I mean the idea of diathermia, the thermo-penetration of segments of the body (*vide* the works of von Zeynek, von Preyss and von Berndt, Klingmüller and Nagelschmidt.) Thus, Sellheim described, 18 months later,[13] a process in which the temperature of the pelvic organs was raised to 40° and 41° C. by passing the so-called high-frequency currents (de Forrest current) between two electrodes. For the present, however, there are two arguments against the general employment of that method. First, we still know too little concerning the physical and biological effects of the high-frequency current on the living tissues. Secondly, Sellheim's apparatus is much too dear. Its price ranges from £35 to £45, and only one patient at a time can be treated. The purchase of a number of Sellheim's apparatus for a large gynæcological department with moderate means would be in most cases an impossibility.

Next, Feis, in Frankfort, in ignorance of my first publication, announced his kolpotherm.[14] In this instrument a small electric lamp is enclosed in a metal case and introduced into the vagina. Compared to the fragile carbon wire and glass case in Feis's kolpotherm, my device has the advantage of being absolutely unbreakable, and can be used for an unlimited length of time.

I do not report a large number of cases, but I wish to make more generally known a method which I devised three years ago, and since then have thoroughly tested in my clinic and in private practice. To recapitulate: (1) This vaginal heating instrument, the "Pelvitherm,"[15] raises the temperature of the female pelvis up to about 40° C. for any length of time; (2) its use, in contrast to all other existing methods, requires no special superintendence, and therefore does not take up the time of the clinical staff; (3) it can be used anywhere where electric light is in use, including the patient's home; and (4) the instruments are so cheap and lasting that every hospital or private practitioner can procure a number of them.

A CASE OF MYELOID LEUKÆMIA WITH CHYLOUS ASCITES.

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AND
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THE patient, a man aged 40 years, was admitted to the Lambeth Infirmary on July 12th, 1909. He complained of swelling of the abdomen, which commenced in January, 1908. In February and March, 1909, he was an in-patient of St. Mary's Hospital, where the diagnosis of splenomedullary leukæmia was made. By the kindness of Dr. Reginald Miller we are able to give the following particulars of his condition at that time:—

There was a general enlargement of the lymphatic glands, the liver and spleen were enlarged, there was some free fluid in the abdomen, and the urine was normal. The condition of the blood was as follows: Hæmoglobin, 70 cent.; red cells, 5,600,000; and white cells, 1,800,000. A differential count of the white cells gave the following percentages: Polymorphonuclear neutrophiles, 47; myelocytes, 20; large mononuclears, 6; small mononuclears, 26·5, and mast cells, 0·5. The red cells showed some poikilocytosis and variation in size, and polychromatophilia; nucleated red cells were very numerous, nearly all normoblasts.

Three weeks before admission to the infirmary the swelling of the abdomen increased considerably, and the legs had been swollen for three and a half months.

On admission the patient was pale, very short of breath, and there were dilated venules on the face; the lymphatic glands were everywhere enlarged. On the left side of the neck was a discharging sinus where an abscess had been opened two years previously. The abdomen was distended and the legs were markedly œdematous; there were signs of free fluid in each pleural cavity. On July 14th the abdominal distension was relieved by paracentesis, 11½ pints of milky fluid being withdrawn. It was then easy to feel the enlargement of the spleen and liver. The spleen formed a hard rounded tumour in the left hypochondrium, and reached below the umbilicus; the surface was markedly rough. The lower limit of the liver was a hand's breadth below the costal margin. The removal of the fluid gave great relief at first, but the abdominal distension soon recurred, and the œdema of the subcutaneous tissues increased. On the 23rd 8 pints of ascitic fluid, having the same milky appearance as before, were withdrawn. The patient died suddenly on the 24th. The condition of the blood was as follows: Hæmoglobin, 65 per cent.; red cells, 4,500,000; and white cells, 326,000. A differential count of the white cells gave the following percentages: Polymorphonuclear neutrophiles, 41·6; myelocytes, 52·4; eosinophile myelocytes, 0·4; small lymphocytes, 2·8; large lymphocytes, 1·6; eosinophile leucocytes, 0·4; and mast cells, 0·8. A specimen of the ascitic fluid was examined by the Clinical Research Association, who reported as follows:—

A faintly alkaline opalescent fluid of specific gravity 1015, only moderately albuminous in character. The opalescence persists after prolonged centrifugalising, but is more or less cleared up by extraction with ether, and the ethereal extract is found to yield a moderate quantity of fat. The centrifugalised deposit from the fluid consists of leucocytes with a slight admixture of red blood corpuscles. The following are the percentages of a differential count: Myelocytes, 28; eosinophile myelocytes, 12; polymorphonuclear neutrophiles, 23; lymphocytes, 7; eosinophile leucocytes, 8; and mast cells, 22.

The urine of the patient was milky in appearance like the ascitic fluid, and also contained myelocytes and a large quantity of albumin.

On post-mortem examination free fluid was found in the chest and the abdomen; that in the abdomen had the appearance already described, and that in the chest presented the ordinary characters of a serous pleural effusion. There was marked perisplenitis, the capsule of the spleen being greatly thickened and adherent to the anterior abdominal wall and omentum. Sections of the liver, the spleen, and the kidneys showed very numerous leukæmic nodules, which had the usual appearance under the microscope. A section from a gland in the neighbourhood of the discharging sinus in the neck showed characteristic tuberculous giant cells and patches of degeneration.

The interest of the case lies in the presence of large numbers of myelocytes in the ascitic fluid and urine, the chylous nature of the ascites, and the extensive general enlargement of the lymphatic glands.

We are indebted to Dr. W. H. Willcox for the use of the notes taken at St. Mary's Hospital, and to Dr. M. H. Quarry for permission to publish the case.

Lambeth Infirmary, S.E.

UNIVERSITY OF BIRMINGHAM.—The Dean and Faculty of Medicine of the University will give a conversazione to inaugurate the opening of the session of the Medical Faculty of the University on Monday, Oct. 2nd.

VIEWING THE BODY.—The question of the juror's viewing the body at an inquest is perennially green. The Home Secretary has replied recently to the Wilmslow authorities, who addressed him in protest against the existing law, that he could not hold out any prospect of legislation at present. At Bolton the compulsory viewing of bodies has just been strongly protested against by several jurors, when the coroner said that the best course would be to pass a resolution framing their opinion, and forward it to the local Members of Parliament.

[11] Quincke, Berliner Klinische Wochenschrift, 1897, Nos. 49 and 50; Abutkow, ref. Zeitschrift für Diätetische und Physikalische Therapie, 1900, p. 615; Eitner, Wiener Klinische Wochenschrift, 1909, p. 1173.

[12] See official report in No. 2, Münchener Medizinische Wochenschrift, 1909.

[13] Monatsheften für Geburtshilfe und Gynäkologie, May, vol. xxxi.

[14] Münchener Medizinische Wochenschrift.

[15] To be obtained from Heinrich Stanger, manufacturer of electrical apparatus, Ulm, Germany, price £3.

Reviews and Notices of Books.

Die Basedow'sche Krankheit. (*Basedow's Disease.*) Von H. SATTLER, Professor in Leipzig. Part II. From Graefe-Saemisch' Handbuch der Gesamten Augenheilkunde. Leipzig: W. Engelmann. Pp. 154. Price 6 marks.

THIS section of Professor Sattler's exhaustive contribution on exophthalmic goitre to the Graefe-Saemisch' Handbuch deals with a variety of questions in connexion with the affection. In Part I. the symptomatology of the classical or typical form of the disease was fully discussed.[1] Here attention is drawn to the various incomplete forms (*formes frustes*), in which one or more of the cardinal symptoms are absent through the entire period that a case is under observation, or, at any rate, during a very great part of its course. Of these forms there are one or two that call for more particular notice—viz., the so-called kropfherz (thyreotoxic cardiopathia), the struma basedowificata, and the "basedowoid" variety.

In cases of kropfherz, cardio-vascular symptoms, usually accompanied by tremor, a tendency to perspiration, and increased excitability, supervene upon a simple goitre that has existed for a longer or shorter period. In some these symptoms are, no doubt, due to mechanical causes, whether from pressure of the deap-seated goitre on the air-passages (whereby changes in the lungs, the pulmonary circulation, and the right side of the heart are produced), or on the great veins opening into the right auricle (the struma vasculosa venosa of Kocher), or in exceptional cases from pressure of the goitre on the nerves in the cervical region. The great majority of these cases, however, occur independently of any mechanical pressure, and it is to this class that the name thyreotoxic cardiopathia (thyreotoxisches kropfherz) is applied. This condition is most frequently met with in young girls; it is favourably influenced by the administration of iodides or preparations of thyroid gland, and may continue for years without developing into the typical form of the disease. It possesses, therefore, characteristics which distinguish it from other incomplete forms, and are of importance from the point of view of prognosis and treatment; from an etiological standpoint, however, it really forms a link in the chain of diseases with artificial thyroidism at one end and typical Graves's disease at the other, which are all due to the toxic influence of a specific pathological condition of the thyroid gland.

In struma basedowificata, sometimes called secondary Basedow's disease, one finds the typical symptom-complex of exophthalmic goitre grafted on a simple goitre of long standing, the exciting cause of the further development in such cases being some mental shock, infectious disease, or operative procedure undertaken for the goitre. In this group some of the symptoms of the typical form—e.g., exophthalmos—are not infrequently absent. The same symptoms may supervene in cases of malignant disease of the thyroid gland. It is difficult to account for their development in such cases. It is suggested that the growth of the tumour in the thyroid gland sets up changes of a similar character to those produced in it by other agencies, such as the application of X rays to a goitre, although it has been shown that the histological appearances of carcinoma of the gland, as well as of the metastatic growths from it, are sometimes in many respects similar to those found in the goitre of typical Graves's disease. In the "basedowoid" variety of R. Stern it is the wide group of nervous symptoms that are most pronounced, this condition being sometimes mistaken for neurasthenia. An attempt has been made to distirguish this variety as a separate entity from the classical type of exophthalmi goitre, because of the presence of some hereditary neuropathic taint in such patients, but such a distinction the author considers too arbitrary to be entertained.

In the chapter on the course of this eminently chronic affection reference is made to the acute form which it sometimes takes at different stages, the tendency to relapse, and the very rapid development of symptoms that is sometimes manifested where the cases run a short course and end fatally or, more infrequently, in complete recovery.

The discussion of the termination of the disease is one of interest. It is pointed out that statistics on the death-rate that have been drawn from hospital practice are misleading from the fact that it is chiefly the more severe cases that are admitted to hospital, while the great number of mild cases are seen only outside or, it may be, are sometimes not recognised; on the other hand, where the number of cases observed has not been very large, the inclusion of a few acute and fatally ending cases renders the percentage unduly high. Another source of error lies in the fact that few observers are able to follow the subsequent history of patients that have been discharged as improved or cured. An analysis of a wide range of cases recorded in the literature shows the mortality to be 11 per cent. As a general rule the danger of a fatal issue is proportional to the severity and acuteness of the case. The question of the proportion of recoveries depends on the strictness with which different observers regard such a result. This varies considerably, as is seen from the figures quoted by writers in different countries, and while a very large number of cases attain what may be termed a relative recovery, where the patients are free from any subjective symptoms and can resume their ordinary vocation, the author comes to the conclusion that complete and permanent recovery is very rare where the disease has existed for any length of time and the symptoms are numerous and well marked. Attention is also drawn to the various conditions, such as pregnancy, as well as gynæcological and intranasal operations, that have a favourable influence on the issue of this disease.

After a consideration of the order in which the various clinical symptoms may usher in this affection, the questions of age and sex are taken up. From an analysis of 3800 cases gathered from the literature and the author's own observation it is found that the proportion of females to males affected is 5·4 : 1, but it varies in different countries and in different parts of the same country. It is worthy of note that in England the ratio of incidence among females is very much higher; out of 13 writers in this country there are only three in whose series of cases the proportion between the sexes approaches that of the average above mentioned; in the reports of all the other writers, and especially in those in which large numbers are available, the preponderance of cases of the female sex is much more pronounced, the ratio in a total of 660 cases being 23 : 1. As regards the incidence at different periods of life, it has been found that out of 3477 cases where the age of the patients was recorded 184 have occurred before the sixteenth year; amongst these there is a relatively larger percentage of males than females. In the latter sex the greatest number of cases occurs between the sixteenth and fortieth year of life, and after the age of 45 the predominance of females affected becomes less, except about the menopause, when there is a slight increase. Amongst male patients most cases occur between the twentieth and thirty-fifth year, and after the forty-fifth year the percentage of males is appreciably greater than that of females—viz., 20 per cent., as compared with 14 per cent. for the latter.

The chapter on the characteristics of this disease in childhood brings out a number of interesting points on the general

[1] See THE LANCET, August 20th, 1910, p. 547.

resemblance of its clinical characters to those observed in adults, and emphasises the relatively mild form and course which it takes. The volume concludes with an account of the geographical distribution of Graves's disease—in which the variation in its frequency in various parts of the world is well brought out and comment on its prevalence in this country is made—the so-called Basedow diathesis, and the occurrence of the disease among the domestic animals. The bibliography is continued in this part and brought up to the end of 1909.

Handbook of the Surgery of the Kidneys. By W. BRUCE CLARKE, M.A., M.B Oxon., F.R.C.S. Eng., Senior Surgeon to St. Bartholomew's Hospital; formerly Surgeon to the West London Hospital and to St. Peter's Hospital for Stone and Other Diseases of the Urinary Tract; Member of the Council and of the Court of Examiners of the Royal College of Surgeons of England; formerly Examiner in Surgery to the University of Oxford. With 5 plates and 50 illustrations in the text. Oxford University Press: Henry Frowde. London: Hodder and Stoughton. 1911. Pp. 199. *Price 10s. 6d.*

MORE than 20 years ago Mr. Bruce Clarke was awarded the Jacksonian prize by the Royal College of Surgeons of England for an essay on the surgery of the kidneys, and ever since that time this department of surgery has had a special interest for him; and now, after this long interval, he has put into print the fruits of his experience of renal surgery. He acknowledges that some of the views he has put forward are at variance with those which are generally held, but the record presented in this book is a personal one, and he has referred to the views of others mainly when they differ from those which he holds. The book is not intended to be an encyclopædia of the progress of the surgery of the kidney, but rather a handbook for the busy practitioner and a record of the opinions held on this subject by a surgeon who has had ample opportunities for studying it very thoroughly.

The book commences with an account of the normal and the abnormal anatomy of the kidneys and ureters, and here we have a very simple account, without any unnecessary refinements, of the relations of the kidneys, so that it is easy for the reader to form a clear idea of the position of the organs and of the structures with which they are in relation. The second chapter describes the way in which a patient should be examined in order to ascertain whether there is anything wrong with the kidney, and the main conditions are indicated which have to be distinguished from enlargements of the kidney. The situation of pain due to disease of the organ is then considered, as well as the direction along which that pain may spread. The author speaks in favour of the use of a urinary separator for the purpose of comparing the urine from the two kidneys, but he refers also to such other methods as the methylene-blue test and the cryoscopic test. He mentions, however, that the latter test can only be carried out by a practised hand, and that it cannot be regarded as of any value in the daily routine of surgical practice, unless the surgeon is able to command the services of a skilled pathological chemist. In the chapter on operations on the kidney Mr. Bruce Clarke states that for the operation of lumbar nephrectomy he prefers to make the incision below and parallel to the last rib, and by the same incision he removes stones from the upper part of the ureter. He speaks with approval of an apparatus devised by Professor Watson of Boston, Massachusetts, for catching urine in the loin, either after the formation of a urinary fistula, or for cases in which the ureter is brought out into the loin.

In the chapter on wounds and injuries of the kidney the author mentions an important point in diagnosis—that renal injury alone is, in his experience, never associated with severe shock and a depressed temperature, and therefore the presence of shock following on an accident and coupled with a rapid fall of temperature is suggestive of injury of some other abdominal organ rather than of renal trouble. The author considers that if a moveable kidney causes no pain or inconvenience no treatment is needed, but if it is certain that the kidney is giving rise to symptoms an operation is needed, for he holds that belts are of little value. He performs Hahn's operation of nephropexy. An important chapter is that devoted to stone in the kidney and ureter; this is illustrated by a large number of skiagrams of renal stones *in situ*, and a very excellent skiagram from a case under the care of Mr. P. Furnivall shows even the laminated condition of the stone. Stress is laid on the need to distinguish shadows cast by stones from those cast by calcified glands or fæcal contents. Chapters on tuberculosis of the kidney and pyelonephritis follow. Mr. Bruce Clarke concurs in the opinion which is generally held at the present time that tuberculosis may be confined to one kidney for a long period. In the treatment of acute pyelonephritis due to the bacillus coli the author expresses great faith in the use of vaccines. The final chapter deals admirably with renal tumours.

We congratulate Mr. Bruce Clarke on the result of his labours; the one criticism which we offer is that some of the illustrations which are reproduced from photographs do not show clearly what they are intended to portray—for instance, Figs. 42 and 43; and better results would have been obtained if they had been re-drawn. The main characteristic of the book is its practical nature, and its value lies in the fact that it is likely to prove of service to the practitioner in his daily work.

Diagnostic and Therapeutic Technic: A Manual of Practical Procedures Employed in Diagnosis and Treatment. By ALBERT S. MORROW, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic; Attending Surgeon to the Workhouse Hospital and to the New York City Home for the Aged and Infirm. With 815 illustrations, mostly original. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 775. Price 21*s.* net.

MODERN methods of diagnosis and treatment of disease in all departments of practice involve the use of minor manipulative measures, the technique of which is taken for granted or but briefly considered in many text-books. Dr. Morrow, realising the importance of the details of many of these in regard to their effective or successful employment, has collected them in the book before us, and has described them simply and practically. He has illustrated his descriptions with copious diagrams, from which all unnecessary details are eliminated. In nearly every case the instruments used are figured, so that the necessary apparatus for each procedure can be seen at a glance. It is obvious that in regard to such matters dexterity can come only from practice, but clear descriptions, including practical hints, should be useful aids to the practitioner in applying these methods, which are becoming daily of greater importance, and in avoiding the dangers or disadvantages of limited experience, since in not a few instances the causes of failure are indicated.

The opening chapters deal with the administration of general anæsthetics and the production of local anæsthesia. Sphygmomanometry forms the subject of the next chapter, and several of the more commonly employed instruments are figured and their use is described. The technique of transfusion is then examined, and the details of various methods, including those of Crile and Carrel, are carefully explained and illustrated. The various ways of infusing physiological salt solution are next reviewed. A chapter is devoted to certain miscellaneous procedures, such as the hypodermic and intra-muscular administration of drugs, vaccination,

acupuncture, venesection, scarification, cupping, and leeching. The uses and methods of application of Bier's hyperæmic treatment are described; and sensible directions are given as to the manner of applying the method, the time for which it should be given, and the choice of cases for its employment. The collection and preservation of pathological material for microscopical or bacteriological investigation are next dealt with. The necessary apparatus is figured, the precautions to be taken are clearly indicated, and the manner of collecting and preserving the substances obtained is in every case clearly stated. Exploratory punctures and the aspiration of various cavities for therapeutic purposes are described in the detail that their importance demands. In aspiration of the abdomen for ascites the use of a straight or curved trocar with a diameter of $\frac{1}{8}$ to $\frac{1}{4}$ of an inch is recommended. Tapping by means of a long Southey's cannula and a fine rubber tube to facilitate drainage, which is often a very satisfactory measure, is not described.

The remainder of the book deals with the application of digital or instrumental methods to the diagnosis and treatment of the individual organs or regions of the body. Space will not permit us to enumerate all the various methods described, but they comprise many of the newer as well as the older procedures, and they are invariably given in sufficient detail to be readily understood and applied. The nose and accessory sinuses, the ear, the tongue and trachea, the œsophagus, stomach and intestines, urethra, prostate, bladder, kidneys, and generative organs are all separately considered. Among the methods described we may mention tracheobronchoscopy, œsophagoscopy, urethroscopy, cystoscopy, and catheterisation of the ureters.

Dr. Morrow's book is essentially practical and should be useful to the hospital resident and to the practitioner who wishes to employ up-to-date methods in diagnosis and treatment.

Nouvelles Méthodes de Sero-diagnostic. Syphilis, Mycoses, Kystes Hydatiques, Lèpre, &c. (*New Methods of Serum Diagnosis*) Par le Dr. ED. JOLTRAIN, Ancien interne des Hôpitaux. Préface du Professeur GAUCHER Troisième édition, avec figures, revisé et augmentées. Paris: A. Maloine. 1911. Pp. 254. Price Fr.4.

THIS book presents in convenient and intelligible form the general technique of the Wassermann reaction and of some of its many modifications, together with a clearly written exposition of the principles upon which they are founded and a review of their practical uses and of their limitations.

The general nature of immunity reactions is first briefly indicated, then some experiments upon the agglutination of the treponema of syphilis are described, and the fundamental facts in regard to hæmolytic reactions are outlined. Wassermann's method is described in full detail, with the manner of preparing and titrating the individual reagents necessary, and with a full account of the various controls essential to its proper performance. An interesting analytical and statistical study is given of its indications in regard to syphilis in all its stages, including the various forms of visceral lesions and the parasyphilitic affections. The influence of various therapeutic agents upon the reaction, such as mercury and organic forms of arsenic, is discussed. The results obtained by Wassermann's reaction with the cerebro-spinal fluid are compared with those afforded by the cytology of the fluid and by Noguchi's butyric acid test. The various non-syphilitic conditions in which a positive reaction has been obtained are discussed—namely, leprosy, scarlet fever, certain diseases due to spirilla and trypanosomes, and in some persons under narcosis. The application of similar methods to other affections, such as sporotrichosis, actinomycosis, hydatid disease, mycosis fungoides, and a number of infective processes, including pneumonia, Mediterranean fever, relapsing fever, tuberculosis, and leprosy, is also dealt with. Other serum reactions, including the opsonic index, the determination of antitryptic power, and the meiostagmine reaction, are also described, and the results obtained by them are briefly referred to.

Dr. Joltrain's book has reached its third edition, and merits the commendatory remarks bestowed upon it in Professor Gaucher's preface.

Hygiene for Nurses, Theoretical and Practical. By HERBERT W. G. MACLEOD, B.Sc., M.D., C.M. Edin., M.R.C.P. Lond., D.P.H. Lond. and Camb. With 49 illustrations. London: Smith, Elder, and Co. 1911. Pp. 233. Price 3*s.* 6*d.* net.

THE necessity of including lectures or instruction in hygiene to nurses generally at the hospitals, including those in London having medical schools, has apparently been overlooked as part of their regular training. Nurses certainly have to ventilate the wards and to see that the annexes, closets, and baths are kept in a clean state, but they do not receive systematic instruction in public health. The author of the work under review recognises the important rôle that hygiene plays in nursing duties, and he explains simply and concisely the more important facts in public health a knowledge of which is valuable to a nurse in her daily work. The information given will be found extremely useful to those who desire to obtain a certificate in hygiene from the various public bodies which grant them.

The methods of instruction adopted by Dr. Macleod are those employed by him as one of the lecturers to the Queen Victoria Jubilee Institute for Nurses, and his methods are thorough. Attention is directed to those sanitary laws of the United Kingdom useful to nurses, and some of the most recent regulations and by-laws of the Local Government Board and the London County Council are inserted. The information regarding the sick-room, ventilation, heating, lighting, water-supplies and fittings, and drainage is given at length, and should be of practical value to every nurse when treating a case in a private house. A table of the chief infective fevers, giving useful information, has been included. Food, milk, and personal hygiene are all carefully considered.

The author has, on the whole, confined a wide selection of subject-matter within narrow limits, and what has been written will be very helpful to those for whom it is primarily intended.

The Anatomy of the Brain and Spinal Cord. By J. RYLAND WHITAKER, B.A., M.B. Lond., Fellow of the Royal College of Physicians, Edinburgh; Lecturer on Anatomy, Surgeons' Hall, Edinburgh, and School of Medicine for Women, Edinburgh; Examiner in Anatomy, Royal College of Physicians, Edinburgh. With 36 plates comprising 103 figures, many of which are coloured. Edinburgh: Messrs. E. and S. Livingstone. 1911. Pp. 228. Price 5*s.* 6*d.* net. Fourth edition.

Dr. Whitaker is to be congratulated on the fact that this book, which he wrote originally in his student days, has now, after a rather long dormant period, appeared again in the shape of a fourth edition. The author's claims for the little book are, and always have been, exceedingly modest, for the work is intended merely as a first introduction to the study of the central nervous system. A simple outline is provided, and the author has resisted the temptation, which the demand for a fourth edition and an accumulated mass of modern literature must have furnished, to enlarge the aims and scope of the work beyond the limits of its present utility. As a simple outline it has already proved its worth. The present edition has fallen into line with the requirements of modern terminology, and it contains a large number of clear

and useful diagrams which should be grasped without difficulty by the student who for the first time attempts to follow the complicated maze of cerebral anatomy. The author is fortunate in steering a happy middle course between the avowed "cram" book and the detail-laden modern text-book. The sphere of usefulness filled by the former editions of the work should be equally well occupied by the present issue.

Kursus der Normalen Histologie. Ein Leitfaden für den Praktischen Unterricht in der Histologie und Mikroskopischen Anatomie. (Course of Normal Histology, being a Guide for Practical Instruction in Histology and Microscopical Anatomy.) Von RUDOLF KRAUSE, a.o. Professor der Anatomie an der Universität Berlin. Mit 30 Figuren im Text und 208 mehrfarbigen Abbildungen auf 98 Tafeln nach Original-Keichnungen der Verfassers. Berlin und Wien: Urban und Schwarzenberg. 1911. Pp. 441. Price M. 20; bound, M. 22 50.

THIS work is designed by its author to give his medical students a thorough practical training in histology by the simplest available means, and the preparations he describes are such that most of them can be made by the student himself. The author attaches the greatest value to the freezing method of section-making, and he uses the Schanze pattern of microtome and carbonic acid as the freezing agent, while, of course, not excluding other methods Rightly, he lays great stress on the importance of making drawings of the preparations themselves. To this end he has himself drawn and coloured 208 preparations, which are reproduced in 98 beautiful plates accurately drawn, which give a guarantee that the methods used by the author are most satisfactory.

After a short description of the microscope and the mode of using it (pp. 1–24), about 70 pages are given to general micro-technics, including methods of fixing, teasing, cutting, decalcifying, and staining sections. All this is on the usual lines. The special part is divided into three unequal sections, dealing with cells, tissues, and organs. A careful description is given of each plate—first the magnification employed, and then the method used is stated, e.g., "Liver Cell of Salamander. 1000. Sublimate 3 p.c. Freezing. Biondi solution," and so on throughout the volume. Plates 1–11 inclusive contain 34 coloured figures and deal with the structures and characters of cells and epithelium in general. Plates 12–32 (82 figures) give a beautiful series of stained examples of tissues, including blood. The chapter on blood might perhaps be expanded. The rest of the plates are devoted to the study of the various organs. The organs of the circulation, lymphatics, and spleen are dealt with in Plates 33–38 (13 figures); ductless glands, Plates 39–41 (6 figures); digestive organs, Plates 42–55 (29 figures); respiratory organs, Plates 56–58 (5 figures); urinary and reproductive organs, Plates 59–67 (20 figures); motor organs, including motor and sensory terminations of nerves and muscles, Plates 68–71 (7 figures); nervous system, Plates 72–85 (29 figures); sensory organs, Plates 86–92 (13 figures); skin and mammary glands, Plates 93–98 (11 figures). This summary shows approximately the range of subjects embraced in the illustrations.

There are a few omissions—e.g., parathyroids and the results of the Golgi method for gland structures—though, on the other hand, very full details are given as to the use of the *intravitam* method. There are relatively few examples of organs with the blood-vessels injected; thus there is no section of injected lung, thyroid, muscle, stomach, cerebrum, and so on. In the descriptive text, also, references to the actual sizes of the cells or parts are missing. Perhaps this is intentional, as the work deals with the practical instruction in microscopic anatomy, but size should not be excluded. We see that for elastic fibres the author uses the resorcin-fuchsin method and omits the well-known orcein stain.

The work as a whole is accurate and painstaking, while the methods are carefully selected and are such as have commended themselves to the author, and we are sure that they will prove equally satisfactory in the hands of his English *confrères*. We should note that in many cases the magnifying powers are higher than those ordinarily used in some medical schools in this country. We commend Professor Krause's treatise to histologists generally.

Abnormal Psychology. By ISADOR H. CORIAT, M.D., Second Assistant Physician for Diseases of the Nervous System, Boston City Hospital. London: William Rider and Son. 1911. Pp. 329. Price 5*s.* net.

THE study of abnormal mental phenomena is a part of human knowledge which should be undertaken only by such as have had adequate medical and scientific training and education. The general reader has a certain interest in the problems of human personality, in the subconscious mind and its workings, in the curious cases of loss of memory or hysteria that find their way into the public prints; and if his conception of these difficult matters is not to be hopelessly vitiated by imperfect understanding he must be willing to learn from someone who has devoted himself to work in this province how meagre is the basis of established fact on which facile hypotheses are all too readily erected. When the abnormal mental phenomena above referred to are made to include crystal-gazing, automatic writing, and other kindred topics, the need for scientific caution is the more pressing.

In this small volume from the pen of Dr. Coriat will be found a series of discussions on the phenomena of the subconscious life, on the emotions, dreams, sleep, hypnosis, as well as on such pathological conditions as losses and illusions of memory, splitting of personality, hysteria, neurasthenia, psychasthenia, and psycho-epileptic attacks. The principal work in this field is summarised, and personal observations and experiments are added. Dr. Coriat explains and illustrates with lucidity and aptness, and his book can be recommended to the physician and to the layman whose tastes lead them to desire to explore these fascinating by-paths of mental life. In some ways the book is rather unequal. In the chapter on illusions of memory and the sensation of "*déjà vu*," reference might with advantage have been made to the light thrown on the subject by a consideration of the symptomatology of lesions of the uncinate gyrus and temporo-sphenoidal lobe. In the paragraphs dealing with what the author calls "psycho-epileptic attacks," he does not draw very clear distinctions between hysterical fits, psychic equivalents of true epilepsy, and such "functional" conditions as vaso-vagal attacks, the latter of which are frequently associated with marked psychical disturbances. Dr. Coriat gives due attention both to Janet's and to Freud's theories of hysteria and psychasthenia, but the reader is not enlightened as to their relative merits or demerits. As a whole, however, this little book contains much material not often brought within such small compass, and it may be read with pleasure and profit.

Recent Advances in Hæmatology, being the Dr. James Watson Lectures for 1910. By WALTER K. HUNTER, M.D., D.Sc. Glasg. With a coloured plate. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1911. Pp. 119. Price 5*s.*

IN this volume the author has reissued in book form the Watson lectures delivered by him before the Royal Faculty of Physicians and Surgeons of Glasgow in 1910.

The first lecture is devoted to the consideration of the blood itself, and in it are fully pourtrayed the matters

connected with the specific gravity, the alkalinity, the coagulation, the viscosity, and the cryoscopy of this tissue. The questions concerning the fat in the blood and the spectroscopic examination of the latter are next considered. The criticisms of the writer on these points are of much value. For example, he points out the small clinical importance to be attached to the estimation of the specific gravity, inasmuch as this is, speaking generally, an estimation of its hæmoglobin, whereas this can be measured more accurately by the hæmoglobinometer. Critical remarks will also be found concerning the question of the coagulation of the blood. This lecture concludes with an account of the various forms of red and white corpuscles, and it is illustrated by an excellent coloured plate.

The second lecture deals, first, with the origin of these corpuscles, as well as their mode of production, the two tissues chiefly concerned being the bone marrow and the lymphatic glands. The author then proceeds to pass in review some of the recognised diseases and disorders of the blood, and to place before his readers the present position of our knowledge as regards their etiology and pathogenesis. In this lecture will be found the facts related to secondary anæmia, chlorosis, splenic anæmia, kala azar, and infantile splenic anæmia. An interesting point narrated is the disappearance that is going on in America of chlorosis, there not being in that country nearly so many cases as there were five or ten years ago.

In the last lecture the author deals with the various forms of pernicious anæmia, paroxysmal hæmoglobinuria, splenomegalic polycythæmia, enterogenous cyanosis, leukæmia, purpura, hæmophilia, and scurvy. The section dealing with the subject of pernicious anæmia is one of the best in the book; the author makes five groups of this affection, as he rightly states that as yet there is no settled agreement as to what shall constitute the boundaries of this disease. He appears to favour the view that scurvy is a disease infective in origin. This view was also put forward some few years ago by Coplans in South Africa,[1] but the arguments in its favour are not very convincing.

This small volume concludes with an appendix wherein are described the various methods connected with the fixing and staining of blood-stains. The lectures will be found of great value to those who are interested especially in hæmatology, and Dr. Hunter has done wisely to issue them in volume form.

Some New and Interesting Points in Ships' Hygiene. By W. MELVILLE DAVISON, M.B., B.S., Medical Superintendent of the Booth Steamship Company, Limited. Bristol: John Wright and Sons. 1911. Pp. 87. Price 4*s.* net.

THE short title of this book is misleading, but the full title accurately describes the contents. It is not a book on ships' hygiene; for instance, there is nothing said about the ventilation, the drainage, the furnishing, the painting, the storage of food-supply, the cubic space per inmate, and many other problems affecting the health of those who live on board. But the book is valuable because practical and interesting in the account given of what can be done in regard to the new requirements that very recent discoveries have proved to be necessary. Perhaps the oldest of these comparatively new requirements is the killing of rats. Attempts have always been made to deal with rats, if only for the sake of saving the cargoes; but now that they are recognised as plague-carriers the rat grievance has become a much more serious matter. With the fleet of the Booth Line at his disposal Dr. Melville-Davison has made experiments on a very large scale with a rat-killing virus. The story of these experiments is remarkably interesting, for it was found that while the rats had become immune to the disease conveyed by the virus, the immune rats acted as disease-carriers to other rats that had not attained immunity. The rat problem, though not absolutely solved, can be mitigated, it is claimed, to the extent of 80 per cent. This would be worth effecting, not only as a measure against plague, but on financial grounds. It is calculated that the total annual damage to British ships done by rats amounts to £262,500. By the use of the virus this, it is suggested, might be reduced to £52,500; but there would be the cost of these operations, estimated at £13,125. Deducting these two sums from the loss usually experienced, we would have a net annual saving of £196,875.

The danger of mosquitoes and vermin as disease-carriers is also a recent discovery, and the little volume before us deals extensively with the practical means of getting rid of these pests. Not only is there given a full scheme of so constructing the port-holes, the ventilators, and the doors that mosquitoes cannot get inside a ship, but the authorities of the Booth Line have availed themselves of their medical officer's suggestions and built their new ship *Hildebrand* on these principles. All who are interested in sanitation at sea will congratulate the company on their enterprise, which should enable us to take a voyage to the Brazils with much less risk of contracting yellow fever, and with better prospect of enjoying a quiet sleep at night, even in the tropics. The suggestions made in regard to cockroaches call for very full research and experiments. This insect, it appears, carries numerous parasites, and cases of beri-beri have occurred at sea where there was no contact with other cases, but cockroaches had been found in the rice which the patients had eaten. There is much that is new and suggestive in this volume.

LIBRARY TABLE.

British Rainfall, 1910. By H. R. MILL, D.Sc., Director of the British Rainfall Organisation. London: Edward Stanford. 1911. Pp. 440. Price 10*s.*—All students of Nature and scientific observers will join in congratulating Dr. Mill on the completion of the fiftieth annual volume on British rainfall, which now contains the records of 4874 observers, this being a net gain of 190 over the previous year. The organisation is now vested in a body of trustees, but the available funds are not sufficient to carry on the work, a deficiency of £142 having had to be met by the director. The principal novelty in the present report consists in a rearrangement of the rainfall stations. When Mr. Symons commenced the publication of the annual volume in 1863 he adopted "with considerable hesitation" a classification of the stations by counties. Dr. Mill has now grouped them according to the river basins in which they are situate, this being the only satisfactory method from the standpoint of physical geography; but as for practical purposes the division by counties could not be abandoned, each county has been divided by watershed lines, so that the "river divisions" can be built up either into counties, or into river-basins, as desired. The mean rainfall for all stations in England in 1910 was 35·98 in., being 11 per cent. above the average of 35 years; in Wales it was 53·50 in., or 16 per cent. in excess; in Scotland, it was 46·46 in., or 3 per cent. above; and in Ireland 44·23 in., or 8 per cent. above the average. The wettest place in the kingdom was Llyn Llydaw, Snowdon. Here 187·06 in. were registered; in England, at the Stye, Cumberland, 144·40 in. fell; in Scotland, 145·45 in. fell at Laon, Loch Quoich; and in Ireland, 83·30 in. fell at Lough Caragh. The least rainfall, 19·44 in., was registered at Stockton, in Durham. In

[1] See Notes from South Africa, THE LANCET, Sept. 9th, p. 801.

discussing the rainfall of 1910 as compared with the yearly rains during the 30 years since 1881 three points of interest are brought out: (1) this was the first wet year for the British Isles as a whole since 1903, and with the exception of that year and of 1900 it was the wettest since 1882; (2) the years 1909 and 1910 have been the first instance of two consecutive wet years in England and Wales since the long run of wet years ended in 1883; and (3) the succession of one wet year following two dry years, which has been repeated in England and Wales seven times without a break from 1889–91 to 1907–9, has at last broken down. This seems to point to the approaching close of the long period of preponderating dry years, from which forecast agriculturists and others may derive some consolation for the abnormal conditions of the present summer.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—So far as original matter is concerned the greater part of the September issue of this magazine is occupied by a lengthy communication from Professor J. Rutherford Morison on the subject of intestinal obstruction. The author gives notes of 39 cases treated by him during 1910. He points out that whereas the results obtained in recent years in cases of chronic obstruction are far better than those of an earlier date, in the case of acute obstruction little advance seems to have been made. Here the most essential point is early diagnosis with immediate operation, while the technical skill demanded is not so great. Mr. J. Hogarth Pringle records in a clinical note a case of aneurysm of the third part of the left subclavian artery treated by aneurysmorrhaphy.

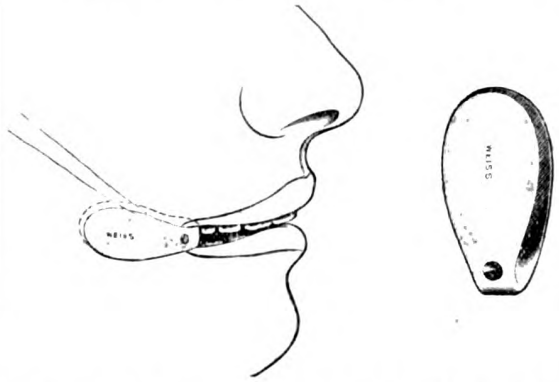
The Dublin Journal of Medical Science.—Lady Aberdeen's presidential address to the recent Health Congress in Dublin is published in the September number of this journal. In it her Excellency draws attention to the importance of enlisting the interest and gaining the assistance of the mothers of the country in the cause of sanitary progress, and accordingly points out the need for courses of instruction in such matters in the scheme of education adopted for girls of all classes. Dr. J. H. Woodroffe writes on the pupil and its reflexes in health and disease, and Dr. A. F. B. Shaw on Artificial Eruptions, under which title he deals with eruptions due to drugs and allied agents rather than with factitious lesions of the skin.

The Medical Chronicle.—In the September number of this magazine there appears a dissertation by Dr. J. Stirling Young embodying the results of much careful observation on the histology of the ovary. He treats first of chronic ovaritis, and finds that there does not exist a chronic idiopathic or primary ovaritis apart from syphilis and tuberculosis, all other inflammatory conditions of the ovary being secondary to uterine or tubal disease. In the second part of the paper he gives an account of the fat and fat-crystals occurring in the ovary. Dr. T. Wardrop Griffith writes on the changes found in the bones in a case of Raynaud's disease, which took the form of interstitial absorption of the terminal phalanges with ankylosis of some of the joints.

New Inventions.

TONGUE SUTURE GUARD.

ANY surgeon who has had occasion to perform certain operations upon the mouth, and especially removal of the tongue, must have been faced with one serious difficulty—a difficulty not during the actual operation, but following it. Unless the base of the tongue is kept forward for some days, there is a serious danger that it may fall backwards over the epiglottis, and respiration become seriously embarrassed, if not imperilled. To avoid this it is the custom to pass silk sutures, one on each side, through the base of the tongue which, being left long, are brought out of the mouth and knotted over the ears. These sutures after a short time act as a string saw over the oral commissures, and produce great



irritation at these points; they may even, if left long enough, cause slight ulceration of the commissures, and thereby much discomfort to the patient during the time they need to remain. In order to obviate this most surgeons pass these threads through rubber tubes which project somewhat both inside and outside the mouth. These tubes certainly obviate the "string saw" action, but it is very difficult to retain them at the point where they are required unless ceaselessly watched. They slip along the retaining threads and therefore are often entirely inside or outside the mouth. In either case they cease to be a protection to the commissures, and should they slip inside may add, by their presence, considerably to the patient's discomfort. A reference to instrument catalogues fails to discover any alternative appliance, and therefore I have designed these mouth clips which fit over the commissure on each side and permit the threads to pass through a hole in the solid base which projects slightly between the lips. These cannot slip either into or out of the mouth.

They have been made admirably for me by Messrs. Weiss. Though intended for the average thickness of lip, since they are made of celluloid, they can be moulded to any size of lip after steeping in boiling water. In the use of these guards the combustible nature of celluloid must be borne in mind, and no naked light must be allowed near to the patient's mouth.

Manchester. E. STANMORE BISHOP, F.R.C.S. Eng.

WOODEN CASE FOR LIGATURE JAR CONTAINING IODINE SOLUTION.

THE boxwood cases with screw-down caps having repeatedly given me trouble, owing to the failure of the threads to bite, I have had made for me by Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W., a case of soft wood, which has the advantage of lightness. The stopper is a plain plug with sloping slides which wedges into the neck of the case. This does away with the screw-down cap. Before placing the jar in the case a string should be tied round the neck of the jar, the ends of the string lying on the lid of the jar. Without such string there may be a little difficulty in lifting the jar out of the case.

C. HAMILTON WHITEFORD, M.R.C.S. Eng., L.R.C.P. Lond.

Plymouth.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 23, 1911.

Cerebro-spinal Fever and Acute Poliomyelitis.

IN THE LANCET last week we published from a local correspondent an account of outbreaks of "spotted fever" and acute poliomyelitis which have occurred recently in Devonshire and Cornwall. The epidemics have not yet ceased. At a meeting of the Devon county education committee on Sept. 8th Mr. G. ADKINS, the county medical officer, gave an account of the outbreak of acute poliomyelitis in various parts of the county. He stated that 25 schools had been closed, and that the disease was present in 12 out of the 52 districts of the county. There had been 80 cases altogether, and 16 deaths had occurred. A number of children were permanently paralysed. He also stated that three definite cases of "spotted fever" were known amongst those reported. As was obvious from our article on Sept. 16th some difficulty in the public mind appears to have arisen in diagnosis. Thus it is stated that at South Molton a child is supposed to have died from spotted fever on August 12th, and a boy, aged 15 years, taken ill on August 28th, died from acute poliomyelitis on August 30th. Until recent years very little attention has been drawn to epidemic cerebro-spinal meningitis, and still less to acute poliomyelitis. The use of synonyms has tended still further to confuse the diseases. Cerebro-spinal fever is also known as epidemic cerebro-spinal meningitis, malignant purpuric fever, petechial fever, and spotted fever; whilst acute poliomyelitis has also been designated acute anterior poliomyelitis and acute polio-encephalitis, a wealth of nomenclature that may well have led to confusion.

It is therefore of the highest importance that medical practitioners should have clear ideas as to the nature and principal symptoms of these two diseases. Cerebro-spinal fever, or epidemic cerebro-spinal meningitis, as its name indicates, is characterised pathologically by inflammation of the cerebro-spinal meninges, and the pathogenic micro-organism is now generally considered to be the diplococcus intracellularis of WEICHSELBAUM. Unfortunately, from the point of view of diagnosis, its clinical course shows great irregularity, the symptoms varying in different epidemics and in different cases of the same epidemic. The main phenomena are: fever of sudden onset, with much depression, pain in the head and neck, retraction of the head, and frequently delirium and coma; the temperature is irregular and variable, and a rash may or may not be present. The duration of the attack also varies greatly—from two or three days to three or four weeks or more. Attention has rightly been drawn to the cutaneous conditions. Herpes occurs with great frequency; but a petechial rash, which has given the name of "spotted fever" to the disease, is not at all constant, and cannot be relied upon for diagnosis. For the accurate recognition of the malady lumbar puncture is of considerable value, the cerebro-spinal fluid being examined for the causal organism. Joint affections are not uncommon, the joints being painful, red, and swollen; and some authors have described paralysis of the lower extremities which may persist for some time, but such a sequel is apparently rare. Acute poliomyelitis occurs usually among children, and is characterised by sudden complete loss of power in one or more limbs, followed by wasting of the paralysed muscles, and the growth of the bones of the affected limb is arrested. The distribution of the paralysis is very variable. Fever is usually present, the temperature rising to 101°, sometimes to 103° F. Pain may be complained of in the early stages, localised in the back, body, and limbs. The onset is sometimes very severe, the child becomes delirious and stuporous, and the head and back may be retracted, thus possibly giving rise to mistakes in diagnosis. The rapid occurrence of the paralysis and subsequent wasting of the limbs, however, serve to identify the complaint. The chief pathological changes are found in the grey matter of the anterior horns of the spinal cord. In the more severe cases there is a diffuse meningo-myelitis and encephalitis. The bacteriology of the complaint has not been definitely settled, although various observers have claimed to have isolated certain micro-organisms. Some authorities consider that the pathogenic agent belongs to the group of filterable and ultra-microscopic viruses.

The mode of spread of these diseases has been much discussed, and some interesting observations were mentioned in our article as the outcome of the observations of Mr. H. M. BODY, medical officer of health of South Molton. Cerebro-spinal fever seems not to be directly contagious, and is probably not transmitted by clothing or the excretions. It is rare to have more than one or two cases in a house, and in a city epidemic the distribution of the cases is quite irregular. With acute poliomyelitis the evidence of direct contagion is stronger, and numerous instances have been recorded in which children have contracted the disease after moving into tenements where other children had died from the affection. It has also been demonstrated by some observers that the virus of acute poliomyelitis is eliminated by the naso-pharyngeal mucosa. Mr. BODY has stated his opinion that it is possible for a healthy individual to act as carrier, and to convey the disease several miles to someone else. Dr. JOSEPH S. NEFF[1] made an interesting study of the cases of acute poliomyelitis occurring recently in Philadelphia. He believes the disease to be mildly contagious, but much less so than the other so-called children's diseases. He shows, however, that general sanitation, crowding, and housing conditions do not play such an important part in the spread of the disease as in other contagious diseases. In his memorandum he indicates by means of a map the location of cases in Philadelphia in the last epidemic of 1910, and as an interesting comparison he gives another map showing the location of cases of cerebro-spinal fever, which exhibit a similar distribution. In connexion with this disease, also, sanitary environment was demonstrated not to be a dominating factor in its etiology. We have only attempted

[1] International Clinics (1911), Twenty-first Series, vol. i. p. 70, et seq.

to give a very brief epitome of some of the characteristics of these two conditions, but we trust we have sufficiently indicated that it is important not to confuse the diagnosis, since cerebro-spinal fever and acute poliomyelitis are two distinct diseases with a different pathology and etiology.

Some Lessons from the Quincentenary of St. Andrews University.

THE committee in charge of these high celebrations may be congratulated on its complete success. To have assembled and entertained in a provincial town so numerous a company of guests, representing seats of learning and scientific associations from the Old World and the New, was no ordinary task. True, there were the guiding precedents of Edinburgh in 1884, of Glasgow in 1901, and of Aberdeen in 1906, but these were less prolific in warnings against failure than in successes to be equalled or surpassed, and it is to the credit of the smallest and least opulent of the four that she has even improved on the standard created by her sisters. The intellectual entertainment was in keeping with the social; and certainly the discourses of the Chancellor, Lord BALFOUR OF BURLEIGH; of the Lord Rector, Lord ROSEBERY; of the Vice-Chancellor, Principal Sir JAMES DONALDSON; and of the ex-Lord Rector, Mr. A. J. BALFOUR, were sufficient of themselves to have retrieved any shortcoming or misadventure in the arrangements. There was no excess of eulogy on the part of these orators; they were too experienced as men of the world, or as responsible holders of office, to betray the optimism so apt to appear on such occasions. The retrospect of Scotland's "Mater Studiorum," however honourable to her energy and perseverance in carrying out her ideal amid circumstances so adverse, was simply taken to encourage a further display of these qualities, and one and all of the said orators lost no opportunity of driving home the truth that with universities, as with individuals, the real test of merit is their power to progress.

Lord ROSEBERY, as the Mentor chosen by the students, did not fail to remind them of what has been a traditional defect in Scottish academic education—the want of thoroughness in mastering the subjects set for graduation—a defect described in characteristic fashion by Dr. JOHNSON as consisting in a taste of everything and a full meal of nothing. "A diluted omniscience" was Mr. FROUDE'S impeachment of the Scottish curriculum in Arts, his ideal being that of MARK PATTISON in his famous essay on "Oxford Studies," to teach the student "to know what knowledge of a subject means." This ideal has often been attained with exceptional approximation to success by the two great English Universities, Oxford and Cambridge, whose defaults in other directions are perfectly obvious, but whose practice has been that of restricting the subjects for graduation so as to admit of the students coming at least within measurable distance of knowing what mastery of them means. The practical result of the system has been to make Oxford and Cambridge the nursing mothers of pre-professional culture, insomuch that north of the Tweed, when an academic chair of Greek, of Latin, or of Mathematics, pure or applied, has to be filled, the electors frequently go to the two elder English Universities for the fittest candidate. A degree in Arts acquired by those attaining to the thorough standard implied in "the knowing what knowledge of a subject means" reacts for good on their subsequent profession, whether in the Church, or in the Law, or in Medicine. The last generation, indeed, has witnessed a departure from the old-fashioned thoroughness, but whether to the advantage of the graduate or to the formation of a more complete professional mind may well be doubted. Premature specialisation threatens to take the place of the former solidity—a specialisation *motivé* by the struggle for professional existence, and tested by examination, often competitive—the preparation for which has called into being the crammer, and the text-books so compiled as to enable students to score "marks," or, in familiar parlance, to get up the knowledge that pays. Science in tabloids is the outcome of the innovation, evoking from Lord ROSEBERY, in an effective passage of his brilliant address, the reproach of our being a "spoon-fed generation."

A point raised, this time by Mr. A. J. BALFOUR, in a speech which was in some respects the most striking of the series, was the function of science in discovering new sources of material energy in the more than probable event of our present resources failing. "We do not realise," he said, "the magnitude of the growth of knowledge that has taken place in the 90 years drawing to a conclusion." Our whole view of the world has been revolutionised in that time, and not only our whole view of science, but our whole view of history, of progress, and the development of mankind. With this progressive advance are we to assume, with the author of the "Novum Organum," that the moral world will not keep pace? Will there be no emergence of a better understanding between the members of the human family, a sense of brotherhood supplementing a sense of citizenship, and making for the peace of the world and the settlement of international differences, not by war, but by arbitration? The forecast seems to justify an answer in the affirmative, when

> "Mind and soul according well
> Will make one music,"

to which the march of humanity will keep time. For this, as for the goal at which all learning and all professional work ought to aim, the universities at home and abroad must combine and mobilise their energies until results, even provisional results, are attained as superior to those we now witness as were the semi-savage conditions of the university life of St. Andrews 500 years ago compared with those that have earned the congratulation of the world at her academic symposium so happily organised and carried out.

A Study of Psychopathic Heredity.

IN every department of scientific inquiry observation is inevitably influenced in greater or less degree by the doctrinal attitude of the observer, who cannot possibly avoid making an involuntary selection of data. However conscientious he may be in scrutinising the phenomena which he has to investigate, he will attach his mind to facts and aspects of facts which have an obvious bearing on the theory that he advocates, whether as supporting it or as contradicting it, while he will neglect or overlook other facts because

they have no such claim on his interest, and are therefore easily passed over as insignificant. But theories are often ephemeral and always imperfect, and the data which, being irrelevant to the theory of to-day, are ignored as of no account, may be vitally important to the theory of to-morrow, and their omission from the records of observation and experiment may in this way render valueless the result of years of laborious research. So true is this that from certain points of view it would hardly be a paradox to maintain that the value of a hypothesis is to be measured, less by the extent of the truth that it illuminates than by the small amount of the truth that it obscures; some bias it must inevitably give to observation, and what we have most insistently to require is that this bias shall be as slight as possible. If this test could be applied to the theories of heredity which divide the biological opinion of the day, probably its most hostile critics would admit that the doctrines associated with the name of MENDEL can claim to be free from this vice of distorting and narrowing our vision. For it is implicit in the Mendelian method, requiring as it does a high degree of minuteness of detail in the data on which it works, that it should collect its facts in a more complete form and with a more rigorous care for accuracy than can be expected, for instance, from the method of mass statistics, in which quantity is of more importance than quality. For this reason, and quite irrespective of the ultimate validity of the theory, we may anticipate that the application of the Mendelian analysis to the study of the heredity of mental disease will exercise a salutary influence in increasing the extent and precision of our knowledge of this most difficult and complex problem.

As evidence of what is already being done in this direction reference may be made to the excellent work which is being carried out by the Eugenics Record Office,[1] established last year in connexion with the Eugenics Section of the American Breeders' Association, and controlled by Dr. C. B. DAVENPORT. It is the object of this office to act as a clearing-house for data concerning "blood lines" and family traits in the United States; and so far as can be judged from the bulletins which it is issuing its organisation for these purposes is admirably planned. One of the specially commendable features of the method adopted by Professor DAVENPORT and his pupils is the employment of biologically trained investigators, technically known as "field workers," to collect the data for the pedigree charts. It is the business of these investigators to trace out all the living members of each family, to interview them, their friends and neighbours, and their medical attendants, and in this way to get a detailed and adequately controlled record of the family history. A large number of observations made under these stringent conditions have now been brought together, and it is claimed that they go to show that the facts of psychopathic heredity can be satisfactorily interpreted on Mendelian laws. This view has been most fully developed in a preliminary paper by Miss GERTRUDE CANNON and Dr. A. J. ROSANOFF, based on the family histories of 11 patients in the King's Park State Hospital, New York. The pedigrees include 35 distinct matings with a total of 221 offspring, and details have been obtained regarding practically every individual on the charts. For the purposes of the analysis of these details the writers assume that we may establish an absolute separation between normal individuals and individuals presenting what they call the "neuropathic make-up." This latter term appears to be of rather comprehensive character, for it is stated that "we find as manifestations of the neuropathic make-up in closely related persons cases of feeble-mindedness, convulsions in childhood from trivial causes or chronic epilepsy, cases of grave hysteria, various eccentricities, cases of dementia præcox, manic-depressive insanity, paranoiac conditions, involutional psychoses, and the like." This is a position which is somewhat open to criticism, for, though it will not, of course, be disputed that the different clinical varieties of degenerative insanity are probably fundamentally identical in nature, the inclusion in the neuropathic group of such ill-defined conditions as "feeble-mindedness" and "eccentricity" tends to make the limits of the group vague and arbitrary. Possibly this objection will be found to have less force when the pedigrees are accompanied by the detailed account of the conditions noted in each individual, whether assigned to the normal or to the psychopathic class. If this is so, and if we may accept the diagnoses made by the writers, then the pedigrees, so far as they go, will certainly bear out the contention that the insane taint does appear to be transmitted in a way that corresponds to the Mendelian laws. The first point to be noted when the pedigrees are examined in this light is that while there are a number of instances of neuropathic children born of normal parents, there is not a single instance of a normal child born of parents both of whom are neuropathic. The inference that a Mendelian would draw from this is, we believe, that if the condition underlying the various forms of the neuropathic make-up is a unit character, then it is recessive to normal. It can only be manifest, therefore, in an individual who has failed to inherit the dominant character of normality from either parent; and as such an individual cannot transmit what he does not possess, when mated with another neuropathic individual, he should have only neuropathic children. The normal individual, on the other hand, may have inherited normality from both parents, and, therefore, be pure-bred to that quality, in which case his mating with another pure-bred normal should yield only normal children; or his inheritance of normality may have been one-sided, and he may be carrying the psychopathic trait as a recessive, being thus hybrid with reference to the character of normality, and he should then be capable of transmitting the neuropathic make-up to his offspring. Now, not only are these general theoretical expectations realised in the pedigrees studied by Miss CANNON and Dr. ROSANOFF, but even the numerical proportions of normal and neuropathic offspring in the intermarriage of the several types must be allowed to approximate to what the distribution should be according to so-called Mendelian principles. Take, for instance, the mating of two normals, both of whom

[1] Eugenics Record Office, Cold Spring Harbour, N.Y., Bulletin No. 1. Heredity of Feeble-Mindedness, by Henry H. Goddard, Ph.D.; No. 2, the Study of Human Heredity, by C. B. Davenport, H. H. Laughlin, D. F. Weeks, M.D., E. R. Johnstone, and H. H. Goddard; No. 3, Preliminary Report of a Study of Heredity in Insanity in the Light of the Mendelian Laws, by Gertrude L. Cannon, A.M., and A. J. Rosanoff, M.D., 1911.

are hybrid as regards this character of normality. The pedigree charts show seven matings of this sort, with a total of 54 offspring. Theoretically, according to the principles, one-fourth of these children should be neuropathic, one-half normal but capable of transmitting the neuropathic make-up to their progeny, and the remaining one-fourth normal and not capable of so transmitting it. The actual results found are: 12 children neuropathic, 6 normal with neuropathic offspring, 10 normal with normal offspring, 18 normal without offspring, and 8 who died in childhood. This is a correspondence with Mendelian expectations which is sufficiently striking when it is borne in mind that the conditions with which we are dealing are such as must to some extent be susceptible to disturbance by environmental causes.

These results are remarkable, and their confirmation would be most desirable. If they stand further investigation they should exercise an influence on our views of insanity both in its medical and in its sociological aspects, so that it is reasonable to expect that the authors will lose no time in publishing the detailed notes of the cases included in their pedigree charts. We may then pretty confidently anticipate that there will be no lack of control observations to support or to invalidate their conclusions. If it should prove to be the case that the facts of insane heredity are susceptible of any Mendelian analysis, even though it be to a more limited extent than the authors of this interesting paper would have us believe, then the gain would, from a practical point of view, be very great. Hitherto, in dealing with this question, we have perforce been content to take our statistical material in the lump and to calculate from it a general average measure of the hereditary factor in insanity; we have had no grounds for formulating a definite opinion as to the likelihood of the transmission of an insane taint in individual cases. The Mendelian, on the other hand, if the promise of these investigations is made good, should be able to tell us with some approach to precision the probable results in each given instance of the mating of members of neuropathic stocks, and should thus be able to point the way to the elimination of the morbid trait. The prospect opened up by this new application of biological theory seems almost too roseate to be more than a mirage; but before we reject it as fantastic we may do well to consider the brilliant results which the same methods have won in other fields—results which, as Professor BATESON justly urged in his interesting address at the Portsmouth meeting of the British Association, should be an earnest of greater achievements to come. At all events, to return to the point at which we started, we have here a hypothesis of great importance, because it has the signal merit of stimulating accurate and minute observation in a field of inquiry in which hitherto a spirit of speculation has been chiefly dominant.

ROYAL DENTAL HOSPITAL OF LONDON.—The medical staff and lecturers of this hospital are giving a conversazione on Wednesday, Oct. 18th, at 8 P.M., at the Royal Institute Galleries, Princes Hall, Piccadilly. The occasion is the distribution of prizes by Mr. A. H. Gilkes, head master of Dulwich College.

Annotations.

"Ne quid nimis."

THE NATURAL HISTORY OF EPIDEMIC DIARRHŒA.

IN an interesting paper entitled "Season and Disease" Dr. Owen H. Peters[1] has studied the influence of seasonal variations of temperature and other meteorological conditions upon the epidemic rise and fall of epidemic diarrhœa and enteric fever. He showed that the time of the epidemic rise varies in different years, and that the time of attainment of summer temperatures also varies. A comparison of the two curves showed a very general correspondence between the early or late onset of the epidemic rise and the time of development of summer temperatures, but further observations demonstrated that it is not the mere arrival at a certain fixed temperature which is related to the date of the seasonal rise. From a study of these curves for a number of towns for certain periods of years it was suggested that the seasonal rise might be related to the cumulative effect of certain degrees of temperature extending over a certain time. As an example, it was found for London, Nottingham, and other large cities of the United Kingdom that after the arrival and continuance, without intermission, of the mean air temperature at 60° F. for a period of four or five weeks the main seasonal rise of diarrhœa mortality took place, the last fortnight or ten days of the period corresponding to the average duration of fatal attacks. On analysis of a considerable number of charts it was found that upon a rise to a favourable mean air temperature of 60° F. or a little below there is, firstly, an interval of two weeks during which no increase of diarrhœa cases occurs, or of four weeks before deaths, afterwards there is a slight rise, but an additional period of one to two weeks or a little more may elapse before the main rise develops. It was also evident that the influence of temperature upon the seasonal epidemicity of diarrhœa is a very important one, since failure of the summer temperatures to reach a certain height prevents it altogether, and, further, the epidemic mortality invariably comes to a standstill a fortnight after the weekly air temperatures have passed in a decided way below 50°. Dr. Peters has further studied this question in an interesting and careful examination[2] of the features of an outbreak of epidemic diarrhœa in certain districts of the town of Mansfield during the summer and autumn of 1908. Two areas of the town were systematically investigated by Dr. Peters himself, and the features of 390 separate attacks of the disease were investigated. On the basis of his observations he gives an exhaustive account of the conditions relating to the disease, and examines the various theories as to its causation and spread. He found that the incubation period was from six to 30 hours in length, but that it might possibly be longer. School attendance seemed to have little effect on the spread of infection, but the sharing of yards in common apparently had a marked influence upon the spread of infection. Dirtiness of the home increased the incidence of the disease, probably through carelessness in dealing with the motions, especially those of the young children. There was a comparatively low incidence during the first year of life, which was probably due to breast-feeding. It is important to notice that the attack age incidence was quite different from the mortality age incidence, which is far greater under

[1] Season and Disease: a Preliminary Study. By Owen H. Peters, M.D. Melb. Reprinted from the Proceedings of the Royal Society of Medicine.

[2] Observations upon the Natural History of Epidemic Diarrhœa, from the Journal of Hygiene, vol. x., No. 4, December, 1910.

the age of two years. Boiling the cow's milk given as food gave no protection, and it was found that the milk-supply played no part, unless of a general kind, in introducing diarrhœa into the home. The part played by personal infection, direct or indirect, by flies and the possible rôle of ground infection are carefully examined. Dr. Peters found that infection within the home was probably the commonest method of contracting the disease. The evidence was in favour of personal infection and fly carriage, and rather against ground infection. Comparing the diarrhœa curve with the curves of temperature and fly prevalence, it showed a delayed rise, variations with their variations, and a definite falling away from their declining curves. Careful analysis of these curves proved to be quite compatible with the theory of fly infection, but certain crucial tests which Dr. Peters outlines as necessary to establish this theory have still to be proved. This monograph is a thoughtful and valuable contribution to the literature of a devastating disease, and deserves careful consideration by all who are concerned in its study.

VACCINATION IN BURMA.

THE triennial report on vaccination in Burma, by Major H. S. Harriss, I.M.S., Superintendent-General of Vaccination, has recently been issued. The total number of vaccinations performed during the period under review was 1,167,673, a decrease of 102,280 on the preceding triennium. The percentage of successful primary vaccinations was 94·80, as compared with 91·05 in the previous triennium; that of successful revaccinations was 62·71, as against the previous 54·74. The average number of operations performed by each vaccinator was 1472, as compared with 1721 in the previous period, a decrease of 249. In Lower Burma the percentage of children successfully vaccinated was 25·56, as compared with 26·27 for the previous triennium. No comparison for Upper Burma can be instituted, as registration of births was introduced there only in 1907; but there is a steady decrease in the percentage of protected infants in Lower Burma, and in Upper Burma so far as figures are forthcoming. As regards the general protection of the population, during the present triennial period the protection per 1000 was 30·49, as compared with 33·16 in the previous triennium. There are three vaccine depôts in Burma—namely, Meiktila, Rangoon, and Loimwe, the last-named having been opened during the past year. Special mention is made of the excellent work of Captain H. A. Dougan, I.M.S., in charge of the Meiktila depôt. The introduction of lanoline lymph for use in remote districts has been attended with marked success at Akyab, where it gave 94·2 success as against 84·4 with glycerine lymph. Tavoy and Mergui also recorded 94·2 per cent. success with lanoline lymph. Liebrich's lanoline in tins gives uniformly good results, provided the lanoline in the centre of the tin alone is used. The vaccination expenditure has risen to Rs.5,23,910, as compared with Rs.3,80,597 in the previous triennium, an increase of Rs.1,43,313. In view of the decrease in the total number of vaccinations performed these figures are recognised as unsatisfactory. This great increase of expenditure is ascribed to (*a*) increase in the number of native superintendents of vaccination and vaccinators; (*b*) the employment of a large number of peons in areas in which postal arrangements are defective; and (*c*) the increased pay of vaccinators for length of service. The three classes of officials concerned in vaccination are the vaccinators, the native superintendents, and the civil surgeons. The vaccinators are said to be mostly young inexperienced men in whom the Burmese have no trust; further, they are not reliable, for 17 have had to be dismissed during the season of 1910–11 for falsification, fraud, or acceptance of gratuities. The Lieutenant-Governor, in his resolution on the report, combats the idea that the percentage of men who had to be removed is high, and believes that the fault is largely due to lack of trustworthy and efficient supervision. He considers it doubtful whether the native superintendents, on a pay varying from Rs.25 to Rs.60 a month, can be trusted to exercise adequate supervision. On the other hand, civil surgeons with a large hospital at headquarters and several smaller hospitals at different stations, who are vice-presidents of municipalities, superintendents of jails, and sanitary officers for the whole district, to say nothing of doing a certain amount of private practice among European residents, cannot possibly find time to inspect thoroughly the work of the vaccinators. Major Harris, the Sanitary Commissioner, recommends the appointment to headquarters hospitals of assistant surgeons, which would allow the superintendent of vaccination to proceed on the prolonged tours necessary for the accomplishment of satisfactary inspection. He further recommends an increase in the number of Deputy Sanitary Commissioners to be constantly on tours of inspection. With regard to the native superintendents, he considers that it would be a better practice to promote old and trusty vaccinators to such posts, both as being more reliable than the young and inexperienced native superintendents at present appointed on passing an examination, and as offering hope of promotion to the vaccinators. He remarks on the general distrust, and in some cases even hostile attitude, to vaccination among the natives of Burma, who in large part prefer the practice of inoculation. (It is worthy of notice, in view of the letters in our columns on August 26th and Sept. 9th, and the further letter of "E. A. A." in the current issue, that no reference is made in the report to tattooing as a substitute for vaccination, although the practice of inoculation is condemned.) This practice was rendered illegal by the Prohibition of Inoculation Act, 1908, which, however, is in force in only two districts; and the Sanitary Commissioner considers its extension to be urgently required, seeing that out of 20 districts reporting small-pox epidemics 11 reported inoculation, and in 6 epidemics were said to be the direct result thereof. The Burma Vaccination Act of 1909 gives power to health officers to enforce vaccination in certain circumstances in Rangoon and in other places where it may be urgently required, and also provides for the vaccination of coolies. To ensure the vaccination of all newly born children a special combined birth and vaccination register has been introduced.

STRANGULATED HERNIA WITHOUT VOMITING.

VOMITING, at first of stomach contents and later of fæcal material, is usually regarded as an essential symptom of strangulated hernia. In his "Clinical Lectures" Sir James Paget says: "If I were asked which of the signs of strangulation I would most rely on as commanding operation I would certainly say the vomiting." However, in his "System of Surgery" Sir Frederick Treves is not quite so dogmatic, for he says: "Vomiting appears early, is a marked and *almost* constant symptom." In the *Journal of the American Medical Association* of June 24th Dr. James R. Judd has reported a case of strangulated hernia which was remarkable in the fact that vomiting was entirely absent. The patient, a Chinaman, aged 64 years, was admitted into hospital. He had been troubled for 15 years with an inguinal hernia which had gradually enlarged. On several occasions he had difficulty in reducing it, but always succeeded in the end. He never wore a truss. Four days before admission the tumour increased in size and he could not reduce it. He had suffered considerable pain and the bowels had acted once. According to his statement, which was corroborated

by all his friends and relatives, he did not vomit at all. On examination he was a well-nourished man with a pulse of 120, a temperature of 101°F., and embarrassed respiration. The abdomen was distended and tympanitic. In the right inguinal region was a tense, tender swelling which involved the right side of the scrotum. The overlying skin was reddened and œdematous, and there was no impulse on coughing. The usual incision revealed a tense sac adherent to the scrotum and containing a loop of gangrenous intestine. The sac was filled with fluid fæces and gas, and fæces were seen escaping from two openings in the bowel. The sac was irrigated, the constriction relieved, and the gangrenous bowel wrapped in moist gauze. The loop was then brought well outside the abdomen and the distended bowel divided at a safe distance from the gangrenous area. Much fluid fæces and gas escaped. Twelve centimetres of intestine, with a wedge-shaped piece of mesentery, were removed, and end-to-end anastomosis was performed. The spermatic cord was found to be flattened, and its vessel did not pulsate. The right testis was greenish-black and did not bleed on incision. The cord was therefore ligatured and removed with the testis. The sac, which was much thickened and adherent, was removed and the neck sutured at the internal ring. The inguinal canal was closed in the usual manner, and drainage was provided at the lowest end of the wound. Except for slight discharge from the drainage tract the wound healed by primary union, and recovery was uneventful. The gangrenous condition of the testicle is a very unusual condition in strangulated hernia, and was evidently due to pressure of the sac on the cord.

AN OUTBREAK OF CHANCRES OF THE LIP FROM KISSING.

THE transmission of syphilis to the "innocent" by kissing is too well known, but transmission to a number of persons at the same time has seldom been recorded. In the *Journal of the American Medical Association* of Sept. 2nd Dr. J. F. Schamberg of Philadelphia has reported the following distressing occurrence, which should serve as a warning against kissing games. A coterie of young men and women of ages varying from 16 to 22 years gave a benefit minstrel performance, which was followed by a banquet at which juvenile kissing games were played. One of the participants, a man, aged 22, had a sore on the lip. Six young women kissed by him developed chancres of the lip. A young man also developed a chancre apparently from kissing one of the young women on whom the virus had been deposited. In addition, a young woman kissed by the offender at another social function developed chancre of the lip. The matter was brought before the Department of Health of Philadelphia by a physician under whose care three of the patients came, and Dr. Schamberg was requested to investigate it. The offender was identified and said that he noticed a sore on the left side of the lower lip on Feb. 12th, 1911, and on March 3rd consulted a physician, who did not inform him of its nature. However, on being interrogated, the physician declared that he advised the young man to take all precautions. On March 4th the kissing games took place. On examination on June 20th he presented the remains of a chancre of the lower lip, tonsillar ulceration with mucous patches, and a maculo-papular eruption. There was no law in the State giving the health authorities a right to deprive a syphilitic subject of his liberty, but there was a law, nearly a century old, empowering them to quarantine a person known to be spreading contagious disease. With his consent the patient was taken to the municipal hospital and given an injection of salvarsan. If he had refused he would have been quarantined. Five or six other young women were kissed by him at the first function without contracting syphilis. Of those who developed chancres four had no knowledge of any abrasion on the lips previously, one had a fissured lip, and one was in the habit of biting her lips. Four of the chancres were on the lower lip, two on the upper, and in one case both lips were involved. The source of the chancre in the young man could not be determined, but as he was given to frequent promiscuous kissing it was presumed the disease was contracted in this way. This unfortunate occurrence, as Dr. Schamberg observes, teaches several lessons. It shows the importance of teaching the public the dangers of promiscuous kissing and the great responsibility placed on medical men of safeguarding the public from their luetic patients by giving due warning. We would add that it forms an argument for bringing venereal diseases under sanitary control.

SANITATION AND PLAGUE.

THE view which has been generally held as to the relation of insanitary conditions to the prevalence of plague has generally been that they had no direct effect upon the diffusion of the disease, except in so far as they might favour the infestation of premises by rats. To this opinion there are, of course, dissentients, who maintain that the first step towards the prevention of the spread of plague is the improvement of the general sanitary circumstances of the house, the village, the town, or the district. In THE LANCET of Sept. 16th we drew attention to the anomalies of plague incidence in India, and particularly to the remarkable freedom from plague epidemics experienced by the province of Eastern Bengal and Assam, the precise causes for which were apparently not known. Since commenting on this subject we have had the opportunity of reading the recently issued annual report for 1910 of Lieutenant-Colonel E. C. Hare, I.M.S., Sanitary Commissioner for that province. In his report reference is made to the well-known immunity of Eastern Bengal from plague, and in this connexion the Sanitary Commissioner refers to an inquiry conducted during 1910 by Captain J. C. G. Kunhardt, I.M.S., on behalf of the Commission for the Investigation of Plague in India, who had visited the province. The full report of this officer has not yet been published, but it is stated he had come to the conclusion, as a result of observations made in Dacca, Chittagong, and other places, that the towns in Eastern Bengal were infested by the rat (Mus rattus) to a much less extent than the towns in other parts of India, and that the reason for this appeared to be due in part to the construction of the dwellings, some, on the one hand, being built more solidly with cement plinths and roofs made of stone slabs, while, on the other hand, some were constructed of more flimsy materials, with walls of bamboo matting and roofs of corrugated iron or light thatch, in any case affording little shelter for rats. The houses, too, were found by Captain Kunhardt to be better lighted, and they were kept in better repair. The people themselves also were more cleanly in their habits, and they did not allow so much rubbish or refuse to collect around their homes. In a word, there seems to be a higher standard of sanitation in Eastern Bengal than in some other parts of India. Whether this is only a part of the explanation of the province's immunity from plague it is not possible to say until the Commission's full report has been received. But this evidence corroborates what has long ago been suggested by some sanitarians in India. In this connexion we may be allowed to quote a passage from the annual report for the year 1908 written by Major C. E. Williams, I.M.S., Sanitary Commissioner for Burma. In protesting against the ignoring of the improvement of general sanitary conditions as conducing to the prevention of plague, and also protesting against all the efforts being concentrated solely upon the

destruction of rats and fleas, Major Williams went on to say that many district medical officers had, in consequence of the advice they had received from the Plague Commission, "neglected the improvement of the general sanitary conditions to follow the *ignis fatuus* of a pulicide propaganda, in an attempt to break the chain of infection at its apparently feeblest link. The practical sanitarian, however, cannot fail to recognise that for him the real source of predisposition of plague epidemics so conspicuous among Asiatic races lies in the insanitary conditions among which the poorer classes live, which foster the prevalence of rats and insect vermin, and that a true prophylaxis is to be found in the amelioration of these conditions."

TUBERCULOUS PLEURISY DUE TO EMBOLISM.

UNDER the somewhat vague title "Zur Kenntnis der Lungentuberkulose" Professor Aufrecht has reported in *Berliner Klinische Wochenschrift*, No. 30, 1911, an interesting case which throws light on the etiology of tuberculous pleurisy. The patient, a man aged 60, consulted him for an enlargement of the cervical glands, which had grown from the size of a hazel nut to that of a child's fist in the course of six months. Excision was advised, but refused. The patient went elsewhere and his glands were massaged. Shortly afterwards he was seized with violent pain in the right side of the chest, and dulness was detected over the middle lobe of the right lung. He now consented to extirpation of his glands, which were found to be almost completely caseous and to contain numerous tubercle bacilli. The dulness over the lung continued, and a serous exudate was detected in the right pleural cavity. After eight months' illness the patient died. At the necropsy 200 c.c. of cloudy fluid were found in the right pleural cavity. The middle lobe of the right lung was larger than usual, and it was completely converted into a yellowish-grey, cheesy mass. The massage had evidently displaced from the cervical glands a thrombus which had been carried to a branch of the pulmonary artery, supplying the middle lobe of the right lung. The simultaneous occurrence of pleurisy and pulmonary tuberculosis may thus be traced to an embolus containing tubercle bacilli and causing an infarct of the lung. Such an embolus is probably more often derived from mediastinal than from cervical glands, as the former are oftener tuberculous than the latter. Professor Aufrecht concludes that this origin of tuberculous pleurisy is not infrequent, especially in such cases which, shortly after the onset of pleurisy, present physical signs of pulmonary disease. He therefore advises a guarded prognosis in early pleurisy which may be the outward and visible sign of deep-seated and acute pulmonary tuberculosis.

POETRY AND SCABIES.

SCABIES is hardly a complaint which one would expect to be associated closely with the Muses, but such apparently is not always the case. Dr. Haldin Davis sends us the following interesting note on the subject: "In the year 1788 a young maiden lady, by name Weissel, the daughter of the Procurator of the University of Marburg, fell ill with an affection of the skin which her medical attendant, who was, as she alleges, one of the most skilful of physicians, diagnosed as 'scabies humida.' Whether this affection is identical with the scabies of modern times is more than doubtful, for in those days the term scabies was applied to a number of different conditions, including eczema and syphilis (scabies hispanica). Notwithstanding the attentions of her physician this lady's illness lasted no less than six months, during which time she was reduced to the lowest ebb of misery and distress. She records that during the entire period she was almost wholly without sleep. Finally, she sought relief in poetry, and six of her effusions were collected by an unknown admirer, and published in the 113th number of the *Political and Philosophical Magazine* (*Staats und Gelehrten-Zeitung*) of the Principality of Hesse-Cassel. Thence one has been rescued from obscurity and republished in the *Deutsche Medizinische Wochenschrift* for August 24th. It is entitled, 'Trost eines guten Gewissens auf dem Krankenbette,' which is, being interpreted, 'The Consolation of a Good Conscience on the Sick-bed.' It is not without poetical merit. After six months' suffering she sank into a sort of trance, and on awaking from this implored the doctor to adopt another line of treatment, however dangerous it might be. He acceded to her wishes, and his efforts were so speedily crowned with success that within a month she had fully recovered. Dr. Schelenz, who has made this contribution to the history of medicine and rescued a poetess from oblivion, is of opinion that she suffered from an eczema of purely nervous origin. The subsequent history of the poetess presents few points of interest. She married in 1792, had nine children, and the only other poems which she published were dedicated to her son in 1814, at that time a 17-year-old officer fighting in the Napoleonic wars."

DILATATION OF THE COLON AS A TEST FOR CHRONIC APPENDICITIS.

THAT chronic appendicitis may manifest itself as persistent dyspepsia of various forms, and therefore escape diagnosis, has been fully recognised. In the *American Journal of the Medical Sciences* for July Dr. W. A. Bastedo has called attention to a test which he has found of great value in the diagnosis of chronic appendicitis, and which has served him when all other methods failed. A colon tube is passed for a distance of 11 or 12 inches and air is injected through it by means of an indiarubber bulb. If as the colon distends pain and tenderness become apparent at McBurney's point there is appendicitis. Of course, this test should not be used in an acute case. Dr. Bastedo thinks that it may prove useful in any persistent abdominal trouble or digestive disturbance for which no cause can be found. In cases of suspected appendicitis in which the diagnosis was doubtful and he hesitated to advise operation because tenderness at McBurney's point was elicited only by very deep pressure, or because there was similar tenderness at other points in the abdomen, dilatation frequently caused disappearance of tenderness at all places except at McBurney's point, where it was intensified. Finally, dilatation enabled the differential diagnosis to be made between appendicitis and right side pelvic trouble in young women in whom vaginal examination was impossible except under ether. The following are some examples. A painter had attacks of abdominal pain, without nausea or vomiting, for 18 months. They became more numerous and in the last he had to lie down for one afternoon. He was told that he had painter's colic. The pain was generally just above the umbilicus or high up beneath the ribs. There was no line on the gums. On dilatation of the colon a small umbilical hernia appeared and pain was felt at two spots —McBurney's point and just below the umbilicus. Operation for the hernia and appendicitis was advised, but, as the diagnosis was not confirmed by others, was declined, and the patient was treated for three months for plumbism and indigestion. The attacks increased and became more localised in the appendix region. The dilatation test was again performed and proved positive. On operation a chronically inflamed appendix covered by veil-like adhesions, which extended to the hernial opening, was found. The appendix was removed and the hernia opening closed, and the attacks ceased. In a second case a physician had in two years five attacks of severe abdominal pain with prostration and vomiting. The pain was diffuse, never

localised, and lasted about a day; the temperature never rose above 99° F., and the pulse was normal or slow. A positive diagnosis was not made, but appendicitis was suggested. Two days after the last attack, which was so severe as to require the administration of morphia, Dr. Bastedo saw him. Slight tenderness could be elicited on very deep pressure at McBurney's point, but on dilating the colon acute pain appeared in the appendix region as well as tenderness at the point. Operation revealed a chronically inflamed appendix with a constriction close to the cæcum. There has been no attack since the operation—an interval of almost a year. In a third case, a woman, aged 24 years, suffering from mitral stenosis, had several attacks of cramp-like pain in the right iliac region. Twice or thrice this pain came on at the menstrual periods, but it also occurred at other times. Vaginal examination was not feasible, so the colon was dilated. At once dull pain was felt over the whole right lower segment of the abdomen, extending from McBurney's point to Poupart's ligament and to the middle line. Tenderness was slight and was most marked about half-way between McBurney's point and the symphysis pubis. Operation revealed a right ovarian cyst and normal appendix. Dr. Bastedo has used this test for four years and has had no case in which it was positive and the operation negative. But in two cases the test was negative and a typical attack of appendicitis followed six months later, and the test was presumably at fault. In several cases in the early days surgeons operated when the test was negative and in all a normal appendix was found.

TREATMENT OF TUBERCULOUS PERITONITIS BY INCISION.

TUBERCULOUS peritonitis is by no means a rare disease, for it is found in about 5 per cent. of all cases dying from tuberculosis, but it is rarer for it to form the sole or even the most conspicuous manifestation of the action of the tubercle bacillus. That it is possible for cases to recover from the disease without operation is certain, and Dr. H. P. Hawkins found from the examination of 100 consecutive cases at St. Thomas's Hospital that, though the mortality is less in cases treated by operation than in those treated without operation, the difference is slight. Judging by the results of published cases which had been submitted to operation, improvement or cure occurs in three-quarters of the whole number; but there can be no doubt that these figures are untrustworthy, for even in cases apparently completely cured relapses may occur, and, further, a successful case is far more likely to be reported than one which has ended fatally. The first instance of the employment of laparotomy in tuberculous peritonitis resulting in recovery occurred in the practice of Sir Spencer Wells; the abdomen was opened under the impression that an ovarian cyst was present, but tuberculous peritonitis was found, and the abdomen was closed. To the surprise of all who saw the case, the patient recovered, and she was alive and well at least 25 years later. Since this first success laparotomy has been performed many times for tuberculous peritonitis, and the best results have certainly been obtained in cases in which much exudation is present, and when there are few adhesions. Perhaps it will not be far from the truth to say that 50 per cent. of cases where such conditions prevail will recover after laparotomy. The results are not nearly so good if there be little or no exudation and many adhesions are present; yet recovery in such cases may occur, as in a case reported by a correspondent in the present number of THE LANCET (p. 918), that of a boy, 14 years old, suffering from tuberculous peritonitis, who was almost moribund, but who recovered rapidly after a small abdominal incision had been made. There is no little risk in cases with many adhesions that any attempt to break down any of them may give rise to a fæcal fistula, for the bowel wall is often greatly thinned, or general suppuration may be set up. The explanation of the improvement which follows laparotomy in tuberculous peritonitis is very difficult. Lauenstein suggested light as the curative agent, but the exposure is so short that this explanation cannot be accepted. When free fluid is evacuated by the operation it may well be that a medium favourable for the growth of the bacillus has been removed, but this explanation will not serve for those cases in which no exudation is present. Instances have occurred in which the abdomen has been opened for tuberculous peritonitis, and many tubercles have been seen, yet when a laparotomy has been performed a year later for some other cause, such as for cure of a ventral hernia resulting from the first operation, not a single tubercle has been visible on the peritoneum; therefore the tubercles really disappear. The only suggestions as to the cause that can be put forward with our present knowledge are either that somehow the balance of forces within the abdomen has been disturbed so as to make it unsuitable for the tubercle bacillus, which is somewhat difficult to grow, or perhaps the disturbance produced leads to the production of an auto-vaccine which immunises the patient. Be the explanation what it may, there can be no doubt as to the fact that in a large proportion of the cases recovery does ensue after a laparotomy has been performed, but the least satisfactory cases are those without exudation and with many adhesions, as in the case reported by our correspondent, who is to be congratulated on the success of his treatment.

HEMIHYPERIDROSIS AND PARADOXICAL SECRETION OF SWEAT.

IN the *Wiener Medizinische Wochenschrift* of April 22nd Dr. Wilhelm Presslich describes a case of disturbance of sweat secretion which presents certain unusual features. The patient was a member of the medical profession who came of a very neuropathic stock (his mother being a typical psychasthenic) and who had suffered at intervals from attacks of acute depression, associated with facial neuralgia. When he was a medical student his attention was called to the fact that during exertion he perspired only on the right side of the face, the left remaining quite dry. In the course of the next few years he observed that this area of unilateral sweating had gradually spread so as to include the right side of the neck, the shoulder, and both anterior and posterior aspects of the trunk to the level of the nipple. The condition remained unaltered during the next ten years. When the patient came under the notice of Dr. Presslich it was seen that even during rest and at a normal room temperature the right side of the face and upper part of the trunk were moist, while the remaining part of the body and the left side of the face were quite dry. With muscular exertion the affected areas "ran" with perspiration, but the patient did not feel hot, nor on palpation was the skin temperature raised. Only a moderate amount of perspiration was noticeable on the normal areas during violent exertion. The most curious feature of the case, however, consisted in a paradoxical sweat secretion which took place under the following conditions. On cold, misty days, as soon as the patient went out of doors the left side of the face and body seemed to become "stiff," and immediately thereafter it was covered with innumerable fine sweat-drops which usually disappeared after about a quarter of an hour. Similarly, by inhaling ammonia vapour or by eating any pungent substance such as horse-radish or mustard—indeed, even by merely thinking of such substances—the patient was able to make this paradoxical left-sided sweat secretion reappear, while the otherwise constantly moist right side became at the same time dry. There is

reason to suppose that these remarkable defects of sweat function are associated with impairment of the action of the sympathetic system, presumably medullary in origin. Cases have been described where organic disease of the medulla has been accompanied by disturbances of sweat secretion over the face and elsewhere, and in the present instance analogous defects were noted in the apparent absence of organic disease. In lesions of the medulla we may expect to find impairment of function of the vaso-motor and the secretory systems, which may or may not be associated with symptoms referable to impairment of the cervical sympathetic system.

PUERPERAL INFECTION WITH BACILLUS INFLUENZÆ.

THE application of bacteriological study to clinical medicine has done much in the past 20 years to modify our ideas as to the limits of the pathogenicity of various bacteria. We have learnt to regard the pneumococcal infection as a bacteriæmia, even when its pathogenic effects are apparently limited to the lung; and more recently still attention has been drawn to the frequency with which the bacillus coli communis becomes the cause of a septicæmia. One of the latest and most important additions to this increasing list of micro-organisms capable of causing deep-seated disease after transmission through the blood stream is the bacillus influenzæ. Various observers have been able to demonstrate it as the cause of meningitis and also of malignant endocarditis, usually of the "chronic infective" type; and now an interesting observation made by Dr. William Thalhimer in the *Johns Hopkins Hospital Bulletin* for August suggests that the genital tract may, in women at all events, be a port of entry for this bacillus. The patient, a woman 31 years of age, was seized with abdominal pain three days after a normal second confinement; the temperature was raised and there were several rigors. The following day she was admitted to hospital; at this date the temperature was 105°, but no pelvic lesion was discoverable. For some days after this the temperature ran an irregular course, and a mass was to be felt in the right broad ligament; but in less than a month the patient had so far recovered that she was able to leave the hospital. A blood culture was negative, but two types of organism, a small bacillus and a streptococcus, grew on agar inoculated from the interior of the uterus. The bacillus, which was the predominant micro-organism, proved in subculture to be Pfeiffer's bacillus influenzæ. The main points in the history of the patient which were of any suggestive value were an account of an attack, which was probably influenza, at the age of 16, and the fact that a year previously her husband was known to have had gonococcal epididymitis. The sole record of a case at all similar to this one, was that of a woman with bilateral non-puerperal salpingitis, suppurative on one side and serous on the other. Kiskault, who reported this case, found the influenza bacillus in the inflammatory exudation in both tubes. This patient also gave a history of an influenzal attack eight or nine years previously. In Dr. Thalhimer's case the bacillus was identified as that of Pfeiffer by two bacteriologists independently of each other.

Sir Donald MacAlister, chairman of the Pharmacopœia Committee of the General Medical Council, informs us that the committee, having resolved to proceed to the production of a new issue of the British Pharmacopœia, has appointed two editors to supervise the preparation of the work under their direction. The joint editors are Dr. Nestor I. Tirard, Professor of Medicine, King's College, London, who has been for many years the secretary of the committee, and Mr. Henry G. Greenish, F.I.C., F.L.S., Professor of Pharmaceutics, Pharmaceutical Society of Great Britain, who has acted as secretary of the Committee of Reference in Pharmacy.

THE Secretary of State for the Colonies has appointed Sir Ronald Ross, K.C.B., F.R.S., Professor of Tropical Medicine in the University of Liverpool, to be a member of the Advisory Medical and Sanitary Committee for Tropical Africa in succession to the late Sir Rubert Boyce.

WE regret to announce the death, in his eighty-third year, of Dr. Frederick William Pavy, M.D., F.R.S., LL.D., which occurred on Sept. 19th last, at his residence, 35, Grosvenor-street, London. A further notice will appear in our columns of this most distinguished physician and chemist.

THE ROYAL COMMISSION ON HUMAN AND ANIMAL TUBERCULOSIS.[1]

APPENDIX: VOLUMES I. AND II.

THE Final Report of the Royal Commission on Human and Animal Tuberculosis was published, it will be remembered, about two months ago,[2] and the first two volumes of the second part of, or appendix to, the report have now appeared. The first of these volumes describes the investigation of viruses obtained from cases of human tuberculosis other than lupus; the second describes the investigation of viruses obtained from cases of lupus; and both are from the pen of Dr. A. Stanley Griffith. A third volume, dealing with further work on old viruses, left incomplete when the second interim report was published,[3] with additional work on two of the recent viruses, and with the excretion of tubercle bacilli in the milk of animals experimentally inoculated, is announced. The investigations were undertaken at Blythwood, and have been proceeding since 1907.

In the following account of these two reports we have given Dr. Griffith's summaries substantially, for, while they are models of condensation, they indicate the extensive scope of the work for which he has been responsible and the precautions with which that work has been undertaken.

Volume I. Viruses from Cases other than Lupus.

Volume I., in recording the results of the investigation of the new cases of human tuberculosis other than lupus, includes a full account of the cultural and pathogenic properties of the tubercle bacilli isolated from them. First comes an account of the different viruses investigated, stating the type or types of bacilli isolated in each group of cases; second, a comparative study of the properties, cultural and pathogenic, of the two types of tubercle bacilli isolated; and third, the results of the experiments carried out to ascertain whether any of the properties of the tubercle bacilli isolated could be altered by residence in the bodies of mammals or birds.

The more detailed part of the report begins with a table of origins in which for each case, grouped according to the kind of tuberculosis, there are given a brief abstract of the clinical history and post-mortem notes of the patient and a statement as to the type of bacillus isolated. Fuller clinical and post-mortem notes are followed by summaries of the experimental results with the bacilli isolated, viruses here being arranged in numerical order. After these come the tabular summaries of the inoculation experiments performed on the different species of animals; the experiments with each species are tabulated separately and divided into groups according to the properties of the virus. Lastly, there are the full post-mortem notes of the larger animals grouped together according to the virus used, illustrated by graphic charts. A series of 67 photographs illustrating the types of growth of the cultures is appended. The pictorial charts exhibiting the lesions produced in calves, pigs, and

[1] Final Report of the Royal Commission appointed to enquire into the Relation of Human and Animal Tuberculosis. Part II. Appendix. Vol. I., Investigation of Viruses obtained from Cases of Human Tuberculosis other than Lupus. Vol. II., Investigation of Viruses obtained from Cases of Lupus. A. Stanley Griffith. London, Wyman and Sons. Price 5s. 3d. each.

[2] THE LANCET, July 15th, p. 166.

[3] THE LANCET, Feb. 9th, 1907, pp. 368, 380.

goats are to be included with other similar charts in a supplementary volume.

The original material consisted of tuberculous tissues, including fluids and pus, obtained after death, or by operation from 25 persons, and sputum from 30 persons presenting clinical signs of pulmonary tuberculosis. The list includes 10 cases of alimentary tuberculosis in children, 1 case of alimentary tuberculosis in an adult, 3 cases of tuberculous meningitis, 2 cases of general miliary tuberculosis (origin uncertain), 4 cases of pulmonary tuberculosis, 1 case of tuberculosis of the suprarenal bodies, 3 cases of tuberculosis of bones, 1 case of tuberculosis of a joint, and sputum from 30 cases of pulmonary tuberculosis.

It will be seen, therefore, that the subjects were of various ages, and that most of the chief varieties of tuberculosis were represented. The nature of the tuberculosis was in each case ascertained by cultures from the tuberculous lesions, and the original material was in every case inoculated into guinea-pigs for the purpose of obtaining cultures, and was occasionally tested for virulence on rabbits. As different types of tubercle bacilli are found in the same tuberculous lesion or in different lesions in the same subject, the properties of bacilli from lesions in different parts of the body must be ascertained before the disease can be rightly assigned to a particular type of bacillus. Detailed accounts are given of the methods employed to determine these properties and to estimate doses for inoculation.

The results of the investigation of the cases of primary alimentary tuberculosis in children are of particular importance. Of the 10 cases, varying in age from 7 months to 8 years and 7 months, in 7 the portals of entry of the bacilli were in the mucous membrane of the intestines, in 1 the point of entry was somewhere in the pharynx, and the other 2 were infected simultaneously from pharynx and intestine. Two of the children died of general tuberculosis, and in one of these there were tubercles on the meninges; three died of tuberculous meningitis, two of tuberculous peritonitis, and one of multiple stricture of the gut (tuberculous); the remaining two died from intercurrent disorders, and the tuberculous lesions were found at the post-mortem examination. Dr. Stanley Griffith is here careful to remark that in every case in which the disease was generalised cultures were made not only from the glands nearest the presumed sites of entry of the bacilli, but also from one or more of the remote lesions. The examination of a number of different strains from the same patient is specially important in the case of children because of their liability to infection with the bovine as well as with the human tubercle bacillus. In none of these cases, however, was there any evidence of a mixed or a double infection, the cultures derived from metastatic lesions being identical with those from the glands nearest the portal of entry of the bacilli.

The bacilli isolated from the ten cases were found to fall into two groups: (1) those which grew luxuriantly on artificial media and had a low virulence for the rabbit; and (2) those which grew less freely but had a high virulence for the rabbit and the calf. The second group were indistinguishable from the bacilli associated with bovine tuberculosis. Bacilli with the properties of the bovine tubercle bacillus were obtained from four children, all of whom died as a result of tuberculous infection. Dr. Griffith calls attention to the fact that these four cases furnish additional evidence to that brought forward in the second interim report that the bovine tubercle bacillus can when ingested produce severe tuberculosis in children and cause death either through extensive local changes or generalisation of the disease. In the series of 20 cases of mesenteric gland tuberculosis reported on in their interim report, 11 yielded cultures of the bovine tubercle bacillus. The other six cases of alimentary tuberculosis yielded cultures of the opposite type—i.e., bacilli which grew luxuriantly on glycerine media and showed low virulence for the rabbit. Two of the children, aged 7 months and 1¾ years, died of tuberculous meningitis; one, aged 7 years, of tuberculous peritonitis; and two, aged 9 and 10 months, of tuberculous meningitis and general tuberculosis; the remaining one, aged 4 years, died from pleurisy and pericarditis, the tuberculous lesions being found at the necropsy. The tuberculous lesions in these children presented no naked-eye features by which they could be distinguished from lesions produced in children by bovine tubercle bacilli. The number of bacilli in the lesions also afforded no certain indication of the kind of organism responsible for the disease. The only way, therefore, of ascertaining definitely which of the two kinds of bacilli is responsible for a tuberculous lesion is to isolate cultures and determine their cultural characters and virulence.

These ten cases bring the number of cases of alimentary tuberculosis in children under 12 years of age, in which the material was obtained after death, and which have been investigated by the Commission, up to 28; 14 of these cases have been shown to be due to the bovine tubercle bacillus, and 14 to the human tubercle bacillus. Interesting tables enable a comparison to be made between the two groups, when these important differences are revealed: (1) In the cases due to the human tubercle bacillus the generalised disease is more severe and widespread than in those due to the bovine tubercle bacillus; and (2) the bronchial glands are much more frequently and more severely affected by the human tubercle bacillus than by the bovine tubercle bacillus. A third and minor difference is the difference in average age at death. Taking only those which died of uncomplicated tuberculosis, it is found that the average age of the children which died of a human infection is 2·4 years, while that of the children which died of a bovine infection is 3·3 years.

One case of primary alimentary tuberculosis in an adult subject was investigated, a man, aged 70, who died from pneumonia. At the post-mortem examination caseous mesenteric and retro-peritoneal glands were found and there was no sign of tuberculosis elsewhere. Two strains of culture were obtained, one from the mesenteric glands through the guinea-pig, the other from a retro-peritoneal gland direct. On artificial media the two strains exhibited identical and luxuriant cultural characters, but they differed, however, in their virulence for the rabbit as the mesenteric gland strain produced in this animal, when inoculated subcutaneously, very slight retrogressive tuberculosis, while the retro-peritoneal gland strain produced in rabbits and calves inoculated subcutaneously general progressive tuberculosis.

We must refer our readers to the text of these volumes for accounts of the detailed work. Dr. Stanley Griffith summarises the lessons to be learnt from the first volume in the following clear terms:—

"In those cases of generalised tuberculosis caused by bacilli which had entered the body by way of the alimentary tract cultures were isolated not only from the glands nearest the points of entry of the bacilli but also from the disseminated lesions, and in several of the other cases in which there were lesions in different parts of the body more than one strain has been isolated and separately investigated. In two instances human and bovine tubercle bacilli were isolated from the same patient, and these were in each instance associated together in the same lesion, in one case a caseous retro-peritoneal gland in an old man aged 70 years who died of pneumonia and showed tuberculosis limited to the glands draining the small intestine, in the other a caseous bronchial gland in a child aged 4½ years who died of general tuberculosis. From other lesions in these two patients human tubercle bacilli only were isolated. The cultures isolated from the other cases fall readily into one or other of two groups, one containing bacilli indistinguishable from bovine tubercle bacilli, the other bacilli (human tubercle bacilli) which grow more luxuriantly and have lower virulence for the rabbit and much lower virulence for the calf than the bovine tubercle bacillus.

Bovine tubercle bacilli were isolated from four of the ten cases of alimentary tuberculosis in children, and from two of the cases of pulmonary tuberculosis (sputum). The four children in question died as a result of infection with bovine tubercle bacilli, the cause of death in one case being general tuberculosis, in another tuberculous meningitis, in another tuberculous peritonitis, and in the fourth stricture of the intestines following tuberculous ulceration; the ages of the children were 1, 2, 4, and 8½ years. The two patients from whose sputum bovine tubercle bacilli were obtained were adults aged 21 and 31 years. Pure cultures of bovine tubercle bacilli were isolated from one of these patients on four different occasions (twice direct) and from the other on two (once direct).

Human tubercle bacilli were isolated from the remaining 46 cases—i.e., six cases of alimentary tuberculosis, 31 of pulmonary tuberculosis, and nine of various other forms of

tuberculosis. Of the six children with alimentary tuberculosis, three were under 12 months old; the other three were aged 1¾, 4, and 7 years. Two died of general tuberculosis, 2 of tuberculous meningitis, 1 of tuberculous peritonitis, and 1 of pleurisy and pericarditis. The patients with pulmonary tuberculosis were aged 16 to 33 years, with the exception of one who was 50 years old.

In seven instances the material submitted, though apparently tuberculous, did not produce tuberculosis in guinea-pigs. In two of these cases emulsions of the material showed microscopically numerous bacilli indistinguishable from tubercle bacilli; in the others no tubercle bacilli were demonstrated. The material from one of the first two cases was the caseo-calcareous mesenteric glands of a girl aged 10½ years who died of heart disease; the tuberculosis was limited to the mesenteric glands. In the other case the material was caseous inguinal glands from a boy aged five years; tuberculous material from this boy had been investigated on two previous occasions, once when he was 14 months old, and again when he was 2½ years old. The earliest obtained material, caseous cervical glands, produced tuberculosis in guinea-pigs and a bacillus was isolated direct which was identical with a bovine tubercle bacillus. The second material, caseous cervical glands from the opposite side of the neck, and the third, the latest material, caseous inguinal glands, did not produce tuberculosis in guinea-pigs and culture tubes sown remained sterile. In the five cases in which no tubercle bacilli were demonstrated the material was calcareous mesenteric glands (or calcareous nodules from mesenteric glands) from adults (ages 20 to 90 years) who had died from various diseases; there were no lesions suggestive of tuberculosis anywhere else in the bodies of these patients."

The milk from four nursing women regarded as suffering from pulmonary tuberculosis did not produce tuberculosis in guinea-pigs; the diagnosis of pulmonary tuberculosis was confirmed in one case only by the demonstration of tubercle bacilli in the sputum by guinea-pig inoculation.

Volume II., Viruses from Cases of Lupus.

This volume deals with the results of the investigation of the tubercle bacilli found in the lesions of lupus vulgaris. Dr. Griffith states that this disease was dealt with separately from other kinds of human tuberculosis on account of the great variation in the properties of the tubercle bacilli isolated. The method of presenting the results follows the same lines in each series of investigations. The volume begins with a general account of the bacilli examined, with summaries in tabular form of the cultural and pathological properties (both original and after passage) of the various bacilli isolated. Then a table of origins is given, and next a full account of all that has been elucidated in connexion with each virus, including detailed case histories, descriptions of cultural characteristics, and summaries of the results of inoculations in various animals. The inoculation experiments are further presented in tabular form, according to the species investigated, and these tables are followed by a detailed account of the passage experiments with various cultures. Finally appear full post-mortem notes of the larger animals, arranged in groups according to the particular virus used, and illustrated by graphic charts. On pp. 479 and 480 are reproduced a number of photographs (20 in all) illustrating the types of growth of various lupus cultures on glycerin agar and glycerinated potato.

The investigations were carried out to determine whether the tubercle bacilli responsible for lupus vulgaris do as a rule vary in their properties from one or the other of the two types of tubercle bacilli which are the cause of other kinds of human tuberculosis. For this purpose material was used from 20 new cases of lupus, together with fresh material from an old case. From these viruses cultures were isolated and tested on artificial media and on various species of animals. The patients' ages ranged from 3¾ to 68 years; 6 of these were males and 15 females, and the duration of the disease varied from 3 months to 36 years. The method of investigation was exactly the same as in the case of viruses from other kinds of tuberculosis; in each instance a culture was obtained and its cultural characters and pathogenicity ascertained.

In order to obtain cultures the lupus nodules or pieces of affected skin were ground to a pulp and emulsified with salt solution. The filtered emulsion was inoculated into a series of two or three guinea-pigs intraperitoneally. In these emulsions acid-fast bacilli were very scanty. After three to five weeks one animal out of each series was killed, and if tuberculosis had developed culture tubes were sown from various lesions; and other tubes were sown from the other guinea-pigs when they died subsequently or were killed. The cultures from the tuberculous tissues were raised exclusively on egg medium. From this the bacilli were subcultivated for a few generations on serum, and then tested on various glycerin media. No cultural differences were observed between different strains of the same virus; but different viruses showed wide variations.

The lupus cultures, therefore, fall into two main divisions according to their cultural characters, as do those from other kinds of human tuberculosis. The first division contains bacilli which grow like bovine tubercle bacilli; the second contains cultures which grow luxuriantly like the human tubercle bacillus. All the cultures in the second division grew distinctly better than the most easy growing of those in the first division.

The Appendix considers the pathogenicity of the cultures under two headings: (*a*) original virulence; and (*b*) virulence after passage through the animal body. Animal experiments demonstrated that few of the cultures possessed the virulence of the group to which they culturally belonged. Of the nine which grew like bovine bacilli only one possessed the high virulence of the bovine tubercle bacillus, while of the 11 which grew luxuriantly only two were regarded by the investigators as possessing the virulence of the human tubercle bacillus.

Dr. Griffith's summary, from which we now quote at length, states that the cultures of tubercle bacilli isolated from the lupus material have shown considerable variation in their properties. Of the 20 viruses investigated, only three yielded cultures which are identical both in cultural characters and virulence with one or the other of the two established types of mammalian tubercle bacilli, the cultures from one of the viruses being typically "bovine," from two typically "human." Of the remaining 17 viruses, eight grew like bovine tubercle bacilli and nine like the human tubercle bacillus, but none exhibited the virulence characteristic of bacilli with such cultural characters.

The characteristics of the two standard types of bacilli in regard to virulence are briefly as follows: The bovine tubercle bacillus when inoculated subcutaneously produces in young calves (dose 50 milligrammes), in rabbits (dose 10 milligrammes), and in monkeys and guinea-pigs (very small doses) a rapidly fatal general tuberculosis. The human tubercle bacillus, on the other hand, when inoculated subcutaneously in large doses, is unable to produce in calves anything more than slight retrogressive general tuberculosis, and never gives rise in rabbits to tuberculosis severe enough to cause death within three months; for the monkey the human tubercle bacillus is as virulent, and for the guinea-pig nearly as virulent, as the bovine tubercle bacillus. The eight atypical lupus viruses with the cultural characters of the bovine tubercle bacillus proved to be less virulent than the bovine tubercle bacillus not only for the calf and rabbit, but also for the monkey and guinea-pig, and the extent to which they thus fell below the standard in virulence varied. Taking first the results of the inoculations into the calf and rabbit, six of the eight viruses displayed for these animals virulence which was less than that of a bovine tubercle bacillus, but greater than that of a human tubercle bacillus. A feature of interest in connexion with these six viruses was the irregularity of the results produced both in the calf and the rabbit by individual viruses. Of the two viruses that remain, one exhibited for the rabbit but not for the calf higher virulence than the human tubercle bacillus, while the other appeared to be less virulent than the human tubercle bacillus both for the calf and the rabbit.

For the monkey the variations in virulence of the eight atypical viruses roughly corresponded with those for the calf and rabbit, and Dr. Griffith specially notes that viruses which fell very little below the bovine tubercle bacillus in virulence for the calf and rabbit, and were therefore on a much higher level in the bovine and rabbit scale of virulence than the human tubercle bacillus, exhibited distinctly lower virulence for the monkey (and guinea-pig) than the human tubercle bacillus. The virus which from the results it produced in the calf and rabbit would have been classed among the human tubercle bacilli was for the monkey the least

virulent of the group, and caused much less severe effects in this animal than the human tubercle bacillus. For the guinea-pig the eight viruses were all less virulent than the bovine tubercle bacillus, and no clear gradation in virulence was brought out by this species of animal.

The other nine lupus viruses with the cultural characters of the human tubercle bacillus all displayed lower virulence than the human tubercle bacillus. The degree to which the virulence fell short of the standard was shown by experiment on the monkey and the guinea-pig to vary widely. As might be expected, no marked variations in the virulence of these viruses were brought out by the more resistant animals, the calf and the rabbit, in which ordinarily an average human tubercle bacillus produces when inoculated subcutaneously only slight disease; the possession of a very low grade of virulence was demonstrated, however, in several of the viruses by the production in the rabbit of no disease or only slight disease after intravenous inoculation, and in the calf of changes confined to the site of inoculation.

Thus the lupus viruses in each division, one containing 9 with the cultural characters of bovine tubercle bacilli, the other 11 with the cultural characters of the human tubercle bacillus, presented many grades of virulence ranging from standard to a very low level. These variations in virulence are represented graphically in a table. Three scales of virulence are drawn, the first for the calf, the second for the rabbit, and the third for the monkey. The properties, cultural characters, and virulence of the tubercle bacilli isolated from the lupus nodules do not appear to have any relation to the age of the patient or to the duration of the lupus in the individual.

In order to ascertain whether the lower than standard virulence of the atypical viruses was stable or unstable, observations were made on the virulence of several of the viruses after a single residence in, or after passage through, the bodies of animals.

In the first division six of the eight viruses were tested after residence in the animal body. In two instances the virulence was increased by residence both in the calf and in the rabbit, the recovered viruses being equal in virulence to a bovine virus. The relationship of these viruses to bovine viruses, which was indicated by their original properties, was by these experiments clearly established. The virulence of the other viruses, with one exception, was stable, no change resulting from repeated passage of them through the body of the calf. In the exception mentioned there was apparently a slight increase in the virulence of the virus during its residence in the fourth animal of one of two series of calves. Though passage failed to raise the virulence of these latter viruses to the level of fatal general progressive tuberculosis, Dr. Griffith has little doubt, judging from their cultural characteristics and the effects they produced in calves and rabbits, that they are bovine viruses which have become degraded in virulence. Another must also be regarded as a bovine virus. It grows like a bovine tubercle bacillus, and though it produced only a limited retrogressive tuberculosis in the calf it caused progressive tuberculosis in the rabbit. As regards another, if this virus was originally a bovine virus the only attribute indicating its pedigree is its mode of growth. On this assumption it would follow, as Dr. Griffith remarks, that cultural characteristics are a more stable quality in the human body than virulence.

In the second division four of the viruses were tested after a single residence in the animal body; the virulence of three was unaltered, while the virulence of the fourth was apparently increased by residence in the body of a monkey. No conclusion, however, can be drawn from the single experiment on the monkey. Apart from the decisive proof of identity with the human tubercle bacillus such as would be afforded by the increase to standard virulence as a result of animal passage, the original properties of the viruses in this division sufficiently indicate their close relationship with the human tubercle bacillus; they possess the cultural characters of the human tubercle bacillus; their virulence for the calf and rabbit is low, and they have induced typical tuberculosis in all the monkeys and in the majority of the guinea-pigs inoculated with them, the effects produced in these animals differing from those following the inoculation of human tubercle bacilli only in their lesser severity.

The facts established with regard to the cultural characters and pathogenicity (original and after passage) of these atypical lupus viruses suggest strongly to the investigators that they were dealing with attenuated varieties in one case of the bovine tubercle bacillus, in the other of the human tubercle bacillus. Was the attenuation of the lupus bacilli antecedent or subsequent to entry into the individual affected with lupus? If antecedent to entry then similar atypical forms should be occurring among the animals or the human beings which are the chief sources of human tuberculosis. But although 30 cases of bovine tuberculosis, 59 cases of swine tuberculosis, and 47 cases of pulmonary tuberculosis in human beings have been investigated by the Commission, no tubercle bacilli have been obtained from these sources which are identical with any of the atypical varieties obtained from lupus. From the horse, however, cultures have in two instances been isolated, which resemble atypical cultures in the first division of the lupus series. Both these viruses were proved to be attenuated bovine viruses by the fact that their virulence was, by passage through the calf, raised to the level of that of a bovine tubercle bacillus. It seems unlikely that any of the lupus patients derived their infection from the horse, since equine tuberculosis is not of frequent occurrence, while the flesh of horses is not commonly eaten by human beings.

There remains to be considered the possibility of attenuation subsequent to entry into the human body. No attenuated forms either of the human or the bovine tubercle bacillus have been isolated from human tuberculous lesions other than lupus, though 115 cases, including nearly every variety of tuberculosis, have been examined. If the attenuation of the lupus bacilli took place in the human body from which they were isolated, it would seem that the influences favouring the change are resident in the skin only, or in more marked degree in the skin than in other regions of the body.

To ascertain whether tubercle bacilli do become degraded in virulence by residence in the cutaneous tissues a re-investigation of the lupus from three of the patients was undertaken. Material was obtained from one patient six months, from another two years, and from the third three years and seven months after the material for the first investigation was removed. Of these, the first had yielded at that investigation typical bovine, the second slightly attenuated human, and the third attenuated bovine tubercle bacilli. In the first two cases no difference either in cultural characters or in virulence between the first and second group of cultures was detected; in the third the later obtained culture produced in the calf more severe results than the first, but was not apparently more virulent for the rabbit. The cultural characters of the later strain of each of the three cases were identical with those of the first. Residence in the skin of six months in one case, two years in another, and three years seven months in a third had not caused any diminution in the virulence of the bacilli or alteration in their cultural characters. It would be interesting, says Dr. Griffith, to obtain cultures from these cases once more, and also from as many as possible of the other cases, and compare their properties with those of the cultures originally isolated.

Though no direct proof that bacilli lose virulence when resident in the skin has been secured, the gradation in virulence of the variants from the standard type and the absence of similar varieties in the food animals and in other kinds of human tuberculosis strongly support the view that it was in the cutaneous tissues of the lupus patients that the degradation in virulence took place.

Dr. Griffith then considers the question whether the bacilli of these variant cultures can be regarded as in a transitional or intermediate stage of transformation from bovine into human tubercle bacilli. As the bovine tubercle bacillus differs from the human tubercle bacillus both in cultural characters and virulence, he anticipates that a gradual transition from the one type of tubercle bacillus to the other would be marked in its intermediate stage by forms which showed a change in cultural characters alone, in virulence alone, or in both properties simultaneously. And the question arises: Do any of the variant cultures stand in the intermediate position between the two types in either or both of these respects?

First, as regards cultural characters. None of the cultures can be regarded as intermediate in this respect since it has been possible to classify every lupus virus either as a bovine tubercle bacillus or a human tubercle bacillus on the basis of cultural characters alone; not one was in this sense equivocal. There is, however, the possibility that a bovine

tubercle bacillus might have fully acquired the characteristic cultural features of the human tubercle bacillus whilst retaining a virulence that would entitle it to be classified among the bovine tubercle bacilli. But there was not found among the viruses of Division II. any example of such a eugonic virulent virus.

Secondly, as regards virulence. Considering first the results in calves and rabbits, animals which have habitually been employed to differentiate between bovine and human tubercle bacilli, the table referred to already shows that there is a series of lupus viruses which in respect of virulence for these animals are intermediate between bovine and human tubercle bacilli; all these viruses had the cultural characters of bovine tubercle bacilli. Had the pathogenic powers of these viruses been lowered for calf and rabbit alone, and not for monkey and guinea-pig, the conclusion would have been inevitable that in these instances cultures were becoming transformed. But inoculation experiments on monkeys and guinea-pigs, animals equally susceptible to both types of tubercle bacilli, have shown that these viruses were reduced in virulence for these species also; in fact, the nearer their virulence for bovines and rabbits approached that of the human tubercle bacillus, the lower it proved for the monkey and guinea-pig. Thus the apparent bridging of one gap was accompanied by disclosure of another equally broad. It was to be anticipated that a bovine bacillus in process of transition into a human bacillus would, so long as it remained more virulent than that bacillus for the calf and rabbit, prove equally virulent with that bacillus for the monkey and guinea-pig; and the circumstance that the lupus viruses in question did not fulfil this condition, that on the contrary they would need to re-acquire full virulence for the monkey and guinea-pig for classification with the typical human virus, precludes Dr. Stanley Griffith from accepting them as transitional in type. In his view, and on the facts so far observed, these dysgonic variant viruses are to be regarded as no more than attenuated varieties of the bovine tubercle bacillus, just as the eugonic variants are to be regarded as attenuated human tubercle bacilli, and do not stand in any closer relation to the human tubercle bacillus than does the typical bovine tubercle bacillus.

THE COLONIAL MEDICAL SERVICE.

FULL particulars of the opportunities for medical practice under the Colonial Office, together with the rates of pay and conditions of service, were not included with the information concerning the public services which was given in the last Students' Number of THE LANCET. We are, however, constantly asked for details, in supplement to those published in the Students' Number, by intending applicants who have not seen our previous articles. The following summary will be useful.

Medical appointments in the public service of our Overseas Dominions are, in the case of the self-governing States, entirely under the control of the local governments. In what are called the Crown Colonies the appointments are filled by the Secretary of State. In Ceylon, Mauritius, Jamaica, Barbados, the Bahamas, and Bermuda vacancies are practically always filled locally by the appointment of qualified native candidates or by transfer from other colonies. Appointments in Malta are all filled locally, and those in Hong-Kong generally by transfer. In Bechuanaland, Basutoland, and Swaziland medical appointments are made by the High Commissioner, and nearly always from local candidates.

The Colonial Services, in which medical vacancies most regularly and frequently occur, and to which appointment is made by the Secretary of State, are the West African medical staff, the East African Protectorates, and the Straits Settlements and Federated Malay States.

Qualifications.—All applicants for colonial medical appointments must be between 23 and 35 years of age, and doubly qualified. Preference will be given to those who have held hospital appointments as house surgeons or house physicians. Testimonials as to character and professional competence will be required, and every candidate will be examined by one of the consulting physicians to the Colonial Office—Sir P. Manson (London), Dr. Hawtrey Benson (Dublin), or Lieutenant-Colonel J. Arnott, I.M.S. (Edinburgh).

Application for appointment is to be made to the Assistant Private Secretary, Colonial Office, Downing-street, London, S.W., by whom forms will be supplied, to be filled up by the candidate, who must name two referees as to character and capacity, and furnish testimonials. Candidates will be asked to attend at the Colonial Office to be interviewed by the Appointments Committee, which meets about once a month. The names of suitable candidates will be noted for consideration as vacancies arise, but no promise can be given that a candidate will eventually be offered an appointment.

The *West African Medical Staff* forms one service for Gambia, Sierra Leone, the Gold Coast, and Southern and Northern Nigeria. Preference is given to candidates over 25 years of age, also to those who are unmarried. There is a probationary period of one year. The salary commences at £400, rising by £20 annual increments to £500 a year. After five years medical officers who are recommended for a higher rate must take a study course; on obtaining satisfactory certificates and completing six years' service the salary is increased to £525, rising by £25 annually to £600 a year. An allowance of £12 is made on first appointment, for camp outfit. There are three principal medical officers, of whom two receive £1000 a year and one £800 to commence with, each appointment also carrying a duty allowance. There are also 26 senior appointments, with salaries ranging from £600 to £900, in addition to duty allowance. The ordinary term of service is one year, followed by two months' leave in England, for which period, as well as for the voyage home, full pay is allowed; half pay is given for the voyage out in the first instance. If the officer returns to the Coast he receives four (instead of two) months' leave at the end of the first year, and free passage is given. Private practice is allowed. Every candidate selected for appointment will be required to undergo a course of instruction in tropical medicine in London or Liverpool, for two or three months at the expense of the Government.

Service in East Africa, Uganda, Nyassaland, and Somaliland Protectorates.—Medical officers are appointed on probation for three years, after which, if their service is satisfactory, their appointment is made permanent. The salary is £400 per annum during probation, and on being confirmed as permanent it rises annually by £20 to £500. There are 39 appointments, as well as certain extra ones, carrying special pay. The principal medical officer in East Africa and Uganda receives £750 to £850, and in Nyassaland £600 to £700. Private practice is allowed. There are also seven temporary appointments (for three years) at £400 a year in connexion with sleeping sickness investigation in Uganda.

Straits Settlements and Federated Malay States.—In practice these medical services may be regarded as one, as officers are frequently transferred from the colony to the States, and *vice-versâ*. In the Settlements there are two house surgeons at Singapore and two at Penang, drawing £300 a year with quarters. There are about 20 posts with salaries varying from £300 to £900, some also having free quarters and some with permission to practise. The principal medical officer draws £1000 a year. In the Federated States medical officers also enter as house surgeons, with pay at £300, rising to £420, and furnished quarters; there are 13 second-grade medical officers, drawing £420 to £600, and eight first-grade officers, with £600 to £720, also with quarters. The senior medical officers at Perak and Selangor draw £900 to £1020, and £780 to £900 respectively, and the principal medical officer draws £1200. Private practice is not allowed, except in the case of the two senior and two of the first-grade officers. In this service all officers are required to contribute 4 per cent. of their salaries towards a widows and orphans fund.

In *British Guiana* there are 40 appointments, with salaries ranging from £300 to £900, and in most cases with right to practise. Candidates must have held a six months' resident appointment in some public institution. In *Trinidad* and *Tobago* there are 49 appointments of £250 to £400, with various allowances and the right to practise. In the *Windward* and *Leeward Islands* there are also 49 similar appointments.

Pensions are granted in the East African service at 50 years of age, on the scale of one-fortieth of the officer's retiring salary for every year of service. In most of the other colonies the pension age is 55, the rate allowed being fifteen-sixtieths of the average annual salary for three years previous to retirement, with one-sixteenth added for each additional year up to 35 years.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH FOR 1910.

City of Lincoln.—The public water-supply of Lincoln continues to be obtained mainly from the river Witham, two supplementary sources being available when the river is exceptionally turbid during times of flood. The sand filtration is maintained at a rate of percolation not exceeding 4 inches per hour. Since the great epidemic of enteric fever due to pollution of this public water-supply in the spring of 1905, the water has been sterilised by the addition of hypochlorite of sodium in the form of "chloros." This is added to the water before filtration at the rate of 1 part of "chloros" to 100,000 parts of water, equal to 8 parts of free chlorine per 1,000,000. Since the addition of "chloros" bacteriological examinations of samples of water taken weekly have invariably given negative results as to the presence of B. coli in 100 c.c. Following the passing of the Lincoln Corporation Water Act, 1908, the works in connexion with the new water-supply, which will be obtained at the outcrop of the new red sandstone at Elkesley, some 22 miles west of Lincoln, have been steadily progressing, and it is anticipated that this source will be available for use before the end of the present year. It is of interest, in view of the importance now generally attached to the carrier as an agent in the production of epidemic enteric fever, to extract from Dr. C. J. Coleman's report the number of notifications of, and deaths from, this disease since 1900.

Year.	Notifications.	Deaths.	Year.	Notifications.	Deaths.
1900	19	6	1906	22	3
1901	15	5	1907	17	3
1902	12	3	1908	22	5
1903	32	4	1909	32	4
1904	17	3	1910	21	1
1905	1054	131			

The epidemic of 1905 must have left behind it, according to modern conceptions, an altogether exceptional proportion of chronic carriers among the population of Lincoln, and, large as was the magnitude of the epidemic of 1905, it can hardly be supposed to have exhausted the susceptible material in a city with a population of over 50 000. The fact that the incidence of enteric fever since 1905 has been merely of the same order of magnitude as in the years preceding the great epidemic suggests that, in this instance at any rate, the chronic carrier has not shown any marked tendency to spread the disease.

Borough of Crewe.—Dr. G. G. Buckley's report shows that in this borough, with a population of some 45,000, diphtheria was prevalent to a notable degree during the later months of 1909 and the whole of 1910. During the latter year 290 cases were notified, the cases occurring in 228 families. Of these 32 died, giving a fatality rate of 11 per cent.; 173 occurred in school children attending a large number of different schools in Crewe. Special arrangements were made in the municipal laboratory for the bacteriological examination of swabs from notified cases, from members of the invaded households, and in the case of school children from other members of the school class. In all, 97 carriers were discovered among contacts who were examined in this way. None of these contacts were allowed to return to school until one, and in many cases two, negative swabs had been obtained, and as a preventive measure all were advised to receive an injection of antitoxin. Many acted on this advice, and Dr. Buckley states that "in no case where this was done did an attack of diphtheria follow." No schools were closed in consequence of the epidemic, although infants under 5 years were for a time excluded from five of the schools. In reporting on the Midwives Act Dr. Buckley refers to the high proportion of illiterate midwives still in practice in the town; the majority are unable to read a clinical thermometer, and 12 out of 35 are unable to write. The births registered in the borough during 1910 were 1112; 918 births were attended by midwives, and in regard to these only 13 records of sending for medical help were received. The figures as to vaccination show the marked fall in the numbers of infants vaccinated which has almost everywhere followed the Vaccination Act of 1907; the certificates of exemption, which before 1907 never exceeded 60 in the year, were as many as 275 in 1909, and 356 in 1910.

Urban District of Barnes.—Dr. F. G. Crookshank claims that the system of "bed isolation" in the wards of the Barnes Isolation Hospital, which he has described in the Transactions of the Royal Society of Medicine for 1910, has proved of the greatest service in overcoming difficulties due to an insufficiency of wards, and has been of great help in the prevention of secondary infections. The only disease, with the exception of variola, which he is not quite sure of controlling by this method is chicken-pox, where he thinks it advisable to supplement strict "bed isolation" by general inunction with eucalyptus oil—a practice which, on the other hand, he considers of doubtful utility as a means of preventing infection in the case of scarlet fever. In the rules for admission to the hospital it is stipulated that the medical superintendent may set apart any ward, not for the time being required for ordinary patients, as a private ward at a charge of 2 guineas per bed per week. A similar arrangement might usefully be made in many other isolation hospitals where there is a reasonable demand for greater privacy on the part of a considerable class of patients. In referring to the home treatment of diphtheria, Dr. Crookshank contrasts the public estimation of the medical man who recognises suspicious symptoms at the earliest moment and administers antitoxin, so that the child within a few hours is apparently well again, with that of the doctor who allows a similar case to drift so that ultimately a death-bed tracheotomy is called for. In the latter case Dr. Crookshank would have us believe that the relatives "are quite happy, and complacently assure each other that everything has been done," while in the former the doctor "bears the odium of being labeled an alarmist, and earns the undying hostility of the child's parents." It is to be feared that there is substantial basis for this complaint, though we doubt that the public is in the long run so easily deceived in its judgments. Dr. Crookshank has a protest to make against the present fashion of some medical officers of health to disdain the "common-sense sanitation" which was responsible for the great amelioration of the public health in the "sixties," "seventies," and "eighties," and their tendency to prefer preaching the necessity for socialistic experiments to the humdrum daily work of their districts. This criticism also is not without justification.

Port of Hull and Goole.—Dr. J. Wright Mason's report to the sanitary authority of this port shows the large amount of work which is done in Hull in connexion with disease on hips within the port, the sanitary conditions of vessels, and the prevention of exotic disease. The examination of imported foods is now undertaken systematically on a large scale, and forms a very important part of the work of the sanitary authority. Eleven cases of beri-beri in five ships came under notice during the year, and the character of the food of the patients is described. In one instance part of the diet of Chinese firemen attacked by this disease consisted of "native vermicelli," which the analyst reported to consist of the pith of a rush, with very little food value. The rice samples are usually described as inferior or dirty; in similar cases in future it would be useful to know the extent to which articles other than rice were included in the dietary, and whether the rice had been decorticated. No unusual mortality has been observed during the year among the rats at the various docks; specimen rats have been collected weekly and submitted to bacteriological examination, but in no case was any condition suspicious of plague detected.

Port of Cardiff.—Dr. E. Walford reports that under the cholera, plague, and yellow fever regulations a strict examination is made, during the day and night tides, of all vessels coming directly or indirectly from "infected" or "suspected" ports on their arrival at the Customs boarding stations. Twenty-three vessels from infected ports were medically inspected, principally from ports infected by cholera. During the year the rat catchers were engaged on 48 vessels, including five from plague-infected ports, and over 8000 rats were caught. During the past three years on an average 5000 black rats taken from ships coming from infected ports have been destroyed annually. Specimens examined from time to time at the Cardiff public health laboratory have proved negative as regards plague. Systematic inspection of shipping in respect of sanitary defects has been maintained, 8377 vessels having been inspected on arrival. Among the

matters to which special attention was given are included leaky decks; defective or unlined iron decks over bunks, causing damp beds; and defective ventilation, lighting, and drainage generally. The system of inspection of foods under the regulations of the Local Government Board is stated to be carried out satisfactorily. Large quantities of unsound food were destroyed during the year without having resort to legal proceedings.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7423 births and 5290 deaths were registered during the week ending Sept. 16th. The revised estimate of population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been 21·2, 20·6, and 19·0 in the three preceding weeks, further declined to 17·1 per 1000 in the week under notice. During the first eleven weeks of the current quarter the annual death-rate in these towns averaged 16·6 per 1000, while in London during the same period the mean annual death-rate did not exceed 15·5 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 5·1 in King's Norton, 6·8 in Handsworth (Staffs), 8·0 in Hornsey, and 9·7 in Reading, to 24·8 in Sunderland, 24·9 in Burton-on-Trent, 26·0 in Bootle, and 26·8 in South Shields. The 5290 deaths from all causes in the 77 towns last week showed a decline of no fewer than 599 upon the number in the previous week, and included 1701 which were referred to the principal epidemic diseases, against 2617 and 2087 in the two preceding weeks. Of these 1701 deaths from the principal epidemic diseases, 1540 resulted from infantile diarrhœa, 55 from whooping-cough, 41 from enteric fever, 27 from diphtheria, 25 from measles, and 13 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 5·5 per 1000, against 8·4 and 6·7 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had been 2714, 2461, and 1915 in the three preceding weeks, further declined to 1540 last week, and caused the highest annual death-rates of 8·9 in Bootle and in Preston, 9·0 in Hull, in West Hartlepool, and in Sunderland, 9·1 in Stoke-on-Trent, and 9·8 in Burnley. The deaths referred to whooping-cough, which had been 58 in each of the two preceding weeks, declined to 55 last week, and included 15 in London and 6 in Sunderland. The deaths attributed to enteric fever, which had risen from 11 to 28 in the four previous weeks, further rose last week to 41, and was, without exception, the highest number recorded in any week of the current year; 9 deaths were recorded in London and its suburban districts, 4 in Manchester, 4 in Hull, and 3 in Bradford. Of the 27 fatal cases of diphtheria, which were 10 fewer than the average in the four preceding weeks, 10 were registered in London and its suburban districts, and 2 each in Portsmouth, Birmingham, Liverpool, Salford, and Sunderland. The deaths referred to measles, which had declined from 59 to 29 in the four preceding weeks, further declined last week to 25, and was the lowest number recorded in any week of the current year; 4 deaths occurred in London, 3 in Nottingham, and 3 in Manchester. The 13 fatal cases of scarlet fever were 4 fewer than the number returned in the previous week, and included 2 in Bolton. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1352, 1327, and 1349 at the end of the three preceding weeks, rose again to 1454 on Saturday last; 264 new cases of this disease were admitted to these hospitals during the week, against 132, 168, and 217 in the three previous weeks. These hospitals also contained at the end of last week 808 cases of diphtheria, 241 of whooping-cough, 119 of enteric fever, and 102 of measles, but not one of small-pox. The 1324 deaths from all causes in London last week showed a decrease of 186 upon the number returned in the previous week, and included 97 which were referred to diseases of the respiratory system, against 73 and 95 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 147 and 171 in the two preceding weeks, were 169 last week, and 349 inquest cases were registered. The causes of 26, or 0·5 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, Portsmouth, and in 51 other smaller towns. The 26 uncertified causes of death last week included 4 in Birmingham, 3 in Liverpool, and 2 each in London, Blackburn and Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 744 births and 516 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had been 15·5, 17·2, and 16·4 in the three preceding weeks, declined again last week to 15·7 per 1000. During the first eleven weeks of the current quarter the annual death-rate in these Scotch towns averaged 15·1, and was 1·5 per 1000 below the mean rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 9·1 and 9·9 in Leith and Paisley to 18 3 in Dundee and 21·8 in Perth. The 516 deaths in the eight towns last week were 20 fewer than the number in the previous week, and included 105 which were referred to the principal epidemic diseases, against 134 and 105 in the two preceding weeks; of these 105 deaths, 80 resulted from diarrhœa, 10 from diphtheria, 8 from whooping-cough, 4 from measles, 2 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 3·2 per 1000, the mean annual death-rate last week from the same diseases in the 77 large English towns having been 5·5. The deaths attributed to diarrhœal diseases, which had been 88, 113, and 78 in the three preceding weeks, rose to 80 last week, and included 67 of infants under two years of age; 39 deaths were recorded in Glasgow, 15 in Dundee, 9 in Edinburgh, 6 in Greenock, and 5 in Aberdeen. The deaths referred to diphtheria, which had been 5 and 8 in the two preceding weeks, further rose to 10 last week, and included 8 in Glasgow. The deaths attributed to whooping-cough, which had been 12, 10, and 12 in the three preceding weeks, declined last week to 8, of which 6 were registered in Glasgow. The 4 fatal cases of measles were equal to the average in the four preceding weeks, and included 2 in Glasgow. The 2 deaths from scarlet fever were equal to the number returned in the previous week, and were recorded in Glasgow and Aberdeen respectively. The fatal case of enteric fever occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 41, 24, and 53 in the three preceding weeks, declined last week to 41, and were 17 below the number in the corresponding week of last year. Of the 516 deaths from all causes in the eight towns last week, 142, or 28 per cent., were recorded in public institutions, and 25 deaths were attributed to different forms of violence. The causes of 12, or 2·3 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·5 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 592 births and 428 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had increased from 19·3 to 22·1 in the three preceding weeks, declined to 19·4 per 1000 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these Irish towns averaged 18·1 per 1000; in the 77 English towns during the same period the mean annual death-rate was equal to 16·6, whilst in the eight Scotch towns it did not exceed 15·1 per 1000. The annual death-rate last week was equal to 23·2 in Dublin (against 15·3 in London), 16·5 in Belfast, 19·7 in Cork, 11·5 in Londonderry, 20·4 in Limerick, and 20·9 in Waterford; whilst in the 16 smallest of these towns the mean annual death-rate did not exceed 18·4 per 1000. The 428 deaths from all causes

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,522,628	2	845	498	—	88	1	30	424	3	1891	4·4	—	64	12	46	12	12	2666	2872	6·6	7790	18·9
West Districts.																							
Paddington	142,541	—	11	16	—	4	—	—	13	—	44	3·2	—	2	—	—	—	—	58	60	4·4	187	14·6
Kensington	172,296	—	13	6	—	3	—	1	12	1	36	2·2	—	—	—	1	2	—	69	72	4·4	245	16·0
Hammersmith	121,837	—	23	11	—	3	—	1	6	—	44	3·8	—	—	—	1	3	1	102	107	9·2	265	22·7
Fulham	153,726	—	15	23	—	2	—	3	14	1	58	3·9	—	3	—	2	1	1	112	119	8·1	282	20·0
Chelsea	66,218	—	11	3	—	—	—	—	5	—	19	3·0	—	—	—	1	—	—	25	26	4·1	113	18·4
City of Westminster	159,709	—	15	10	—	2	—	—	4	—	31	2·0	—	1	—	2	2	1	21	27	1·8	186	13·6
North Districts.																							
St. Marylebone	117,844	—	18	4	—	2	—	1	5	—	30	2·7	—	1	—	1	2	—	31	35	3·1	164	15·4
Hampstead	85,599	—	12	10	—	2	—	1	—	—	25	3·0	—	1	—	1	—	—	10	12	1·5	76	10·5
St. Pancras	218,031	—	31	27	—	4	—	2	14	—	78	3·7	—	—	1	4	8	—	108	121	5·8	362	18·1
Islington	327,234	1	75	45	—	7	—	—	15	—	143	4·6	—	2	4	5	6	2	182	201	6·4	534	17·7
Stoke Newington	50,669	—	10	1	—	1	—	—	5	—	17	3·5	—	—	—	—	1	—	20	21	4·3	68	14·6
Hackney	222,674	—	52	13	—	9	—	2	62	—	138	6·5	—	1	2	1	7	1	115	127	5·9	354	17·3
Central Districts.																							
Holborn	49,084	—	9	4	—	—	—	—	1	—	14	3·0	—	1	—	—	2	—	17	20	4·2	76	17·3
Finsbury	87,639	—	21	17	—	2	—	1	10	—	51	6·1	—	1	—	2	4	—	67	74	8·8	185	22·8
City of London	19,475	—	4	1	—	2	—	—	1	—	8	4·3	—	—	—	—	—	—	7	7	3·7	29	17·0
East Districts.																							
Shoreditch	111,284	—	33	14	—	2	—	—	14	—	63	5·9	—	7	—	1	2	—	94	104	9·7	264	25·9
Bethnal Green	128,247	—	19	10	—	2	—	1	24	1	57	4·6	—	6	—	1	4	—	134	145	11·8	307	25·3
Stepney	279,560	—	61	54	—	6	—	2	51	—	174	6·5	—	15	1	3	4	1	219	243	9·1	572	22·3
Poplar	162,290	—	24	18	—	4	—	2	22	—	70	4·5	—	3	1	1	—	1	179	185	11·9	402	26·6
South Districts.																							
Southwark	191,595	—	48	24	—	—	—	3	32	—	107	5·8	—	4	1	4	1	—	145	155	8·4	406	23·1
Bermondsey	125,840	—	19	27	—	2	—	2	15	—	65	5·4	—	—	—	1	—	1	87	89	7·4	249	21·1
Lambeth	298,032	1	48	37	—	4	—	—	18	—	108	3·8	—	1	—	5	5	—	171	182	6·4	506	18·3
Battersea	167,765	—	26	3	—	5	—	1	11	—	46	2·9	—	1	—	—	2	—	115	118	7·3	311	20·7
Wandsworth	313,389	—	51	40	—	4	1	4	13	—	113	3·8	—	1	—	1	6	1	146	155	5·2	451	15·8
Camberwell	261,407	—	74	21	—	6	—	—	13	—	114	4·5	—	—	2	3	4	—	144	153	6·1	398	16·5
Deptford	109,475	—	36	17	—	—	—	—	18	—	71	6·8	—	—	—	—	2	—	86	88	8·4	197	19·8
Greenwich	96,982	—	18	8	—	3	—	1	14	—	44	4·8	—	11	—	2	3	2	75	93	10·1	200	22·2
Lewisham	161,677	—	25	12	—	2	—	—	5	—	44	2·8	—	—	—	3	1	—	75	79	5·1	241	16·2
Woolwich	121,509	—	43	22	—	3	—	2	7	—	77	6·6	—	2	—	—	—	—	52	54	4·6	170	15·6
Port of London	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

in the 22 Irish towns were 59 fewer than the number returned in the previous week, and included 134 which were referred to the principal epidemic diseases, against 153 and 130 in the two preceding weeks; of these 134 deaths, 121 resulted from diarrhœal diseases, 5 from whooping-cough, 3 from scarlet fever, 3 from diphtheria, 1 from enteric fever, and 1 from measles, but not one from small-pox. These 134 deaths from the principal epidemic diseases were equal to an annual death-rate of 6·1 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 5·5, while in the eight Scotch towns it did not exceed 3·2 per 1000. The deaths attributed to diarrhœal diseases, which had been 112, 141, and 117 in the three preceding weeks, rose last week to 121, and included 116 of infants under two years of age; 47 deaths occurred in Dublin, 35 in Belfast, 8 in Cork, 5 in Limerick, and 5 in Waterford. The 5 deaths referred to whooping-cough were equal to the average in the five preceding weeks, and included 3 in Dublin and 2 in Belfast. The 3 fatal cases of scarlet fever, which were slightly in excess of recent weekly numbers, were recorded in Dublin, Belfast, and Lurgan respectively. The fatal cases of diphtheria, enteric fever, and measles were all recorded in Dublin. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 30, 31, and 44 in the three preceding weeks, were 42 last week. Of the 428 deaths from all causes in the Irish towns last week, 102, or 24 per cent., were recorded in public institutions, and 4 deaths were attributed to different forms of violence. The causes of 11, or 2·6 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·5 per cent. in the 77 large English towns, and was equal to 2·3 per cent. in the eight Scotch towns.

VITAL STATISTICS OF LONDON DURING AUGUST, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·4 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·3, 4·4, and 5·1 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, St. Marylebone, Battersea, and Lewisham; and the highest rates in Hackney, Finsbury, Stepney, Deptford, and Woolwich. The prevalence of scarlet fever last month showed a marked decrease from that recorded in the previous month; this disease was proportionally most prevalent in Finsbury, Shoreditch, Southwark, Camberwell, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 1324 scarlet fever patients at the end of last month, against 1128, 1206, and 1400 at the end of the three preceding months; the weekly admissions averaged 159, against 160, 162, and 200 in the three preceding months. Diphtheria also was less prevalent than it had been in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Fulham, Finsbury, Stepney, Bermondsey, Deptford, and Woolwich. The number of diphtheria patients remaining under treatment in the Metropolitan Asylums Hospitals at the end of the month was 720, against 801, 771, and 839 at the end of the three preceding months; the weekly admissions averaged 85, against 100, 102, and 120 in the three preceding months. The prevalence of enteric fever showed a slight increase over that recorded in other recent months; this disease was proportionally most prevalent in Paddington, Hackney, the City of London, Battersea, and Greenwich. There were 56 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 35, 33, and 47 at the end of the three preceding months; the weekly admissions averaged 10, against 5, 6, and 9 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Southwark, and Deptford. The 30 cases of puerperal fever notified during the month included 4 in Wandsworth, 3 in Fulham, 3 in Southwark, and 2 each in St. Pancras, Hackney, Stepney, Poplar, Bermondsey, and Woolwich. The 3 cases notified as cerebro-spinal meningitis belonged respectively to Kensington, Fulham, and Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending Sept. 2nd the deaths of 7790 London residents were registered, equal to an annual rate of 18·9 per 1000 of the population, against 13·2, 11·7, and 12·4 per 1000 in the three preceding months. The death-rates last month ranged from 10·5 in Hampstead, 13·6 in the City of Westminster, 14·6 in Paddington and in Stoke Newington, 15·4 in St. Marylebone, 15·6 in Woolwich, and 15·8 in Wandsworth, to 22·2 in Greenwich, 22·3 in Stepney, 22·7 in Hammersmith, 22·8 in Finsbury, 23·1 in Southwark, 25·3 in Bethnal Green, 25·9 in Shoreditch, and 26 6 in Poplar. The 7790 deaths from all causes included 64 from measles, 12 from scarlet fever, 46 from diphtheria, 72 from whooping-cough, 12 from enteric fever, and 2666 (among children under two years of age) from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded last month in Chelsea, the City of Westminster, Hampstead, St. Marylebone, Stoke Newington, Holborn, and the City of London; and the highest rates in Hammersmith, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Greenwich. The 64 deaths from measles were 57 fewer than the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Greenwich. The 12 deaths from scarlet fever were less than one-third of the corrected average number, and included 4 in Islington, 2 in Hackney, and 2 in Camberwell. The 46 fatal cases of diphtheria were slightly above the corrected average number; among the various metropolitan boroughs this disease showed the highest proportional mortality in St. Pancras, Finsbury, Southwark, Lambeth, Greenwich, and Lewisham. The 72 deaths from whooping-cough were 11 below the corrected average number, the highest death-rates from this disease being recorded in Hammersmith, St. Pancras, Hackney, Holborn, Finsbury, Bethnal Green, and Deptford. The 12 fatal cases of enteric fever showed a slight decline from the corrected average number; 2 belonged to Islington and 2 to Greenwich. The 2666 deaths from diarrhœa and enteritis among children under two years of age were greatly in excess of the normal number; deaths from this cause were proportionally most numerous in Hammersmith, Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 31·3 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. Miller to the *Pembroke*, for R.N. Barracks; and W. A. Whitelegge to the *London*. Staff-Surgeon: A. La T. Darley to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors:—Francis S. Irvine, Frank G. Richards, Ernest B. Knox, John Matthews, and Patrick S. O'Reilly (dated August 17th, 1911). Arthur M. MacLaughlin, James A. Hartigan, James F. Martin, Edmund McDonnell, and Arthur H. Safford (dated Sept. 4th, 1911). Captain Frank H. Noke retires on retired pay (dated Sept. 20th, 1911).

Colonel W. G. Birrell, from Woolwich, has taken up duty as Administrative Medical Officer at Dover. Lieutenant-Colonel F. W. Caton Jones, commanding the Military Hospital at Quetta, has been selected for the increased rate of

pay under Article 317 of the Royal Warrant. Lieutenant-Colonel A. F. L. Bate has been transferred from Rawal Pindi cantonment to take charge of the Station Hospital at Kuldana. Lieutenant-Colonel J. J. C. Donnet, at present serving at Belfast, has been placed under orders to embark for service in the Straits Settlements during the forthcoming trooping season. Major C. A. Stone has taken up medical charge of the Military Hospital at Cosham. Major W. A. Woodside, adjutant of the Royal Army Medical Corps School of Instruction, East Anglian Division, at Ipswich, has been placed under orders to embark for service with the Northern Army in India, embarking on the transport s.s. *Dongola* from Southampton on Nov. 29th next. An exchange of position on the roster for foreign service has been sanctioned by the War Office between Major L. Way, serving at Cosham, and Major A. R. O'Flaherty, serving at Devonport. Major R. C. Lewis has been transferred from Chapel Bay to the medical charge of Carnarvon Camp. Captain W. F. Tyndale, C.M.G., from Dublin, has been appointed Specialist Sanitary Officer at Devonport, with effect from Sept. 28th. Captain A. C. H. Gray, from Belfast, has been selected for appointment as Clinical Pathologist at the Royal Infirmary, Phœnix Park, Dublin. Captain S. B. Smith, from Dublin, has been selected for appointment as Sanitary Officer at Belfast, in succession to Major E. P. Sewell, whose tenure of the appointment will expire on Sept. 22nd. Captain A. E. Hamerton, D.S.O., from London, has been seconded for special duty under the Colonial Office in Nyassaland. Captain L. L. G. Thorpe, from Shipton, has taken up duty at West Down South, Salisbury Plain District. Captain J. H. Brunskill, on completion of the course of instruction to promotion to the rank of Major, has been posted to the Dublin District. Captain W. S. Crosthwait, on termination of field training at Moore Park Camp, has joined the Military Hospital at Fermoy for duty. Captain J. C. G. Carmichael has been posted to Manchester. Captain F. P. Lauder has been transferred from the Aldershot to the Irish Command. Captain B. B. Burke has arrived home on leave of absence from duty on the West Coast of Africa. An exchange of position on the roster for service abroad has been approved between Captain A. F. Carlyon, serving at Devonport, and Captain M. F. Foulds, surgical specialist at Belfast. Lieutenant A. L. Foster has been transferred from Rawal Pindi to the Station Hospital at Kalabagh, Muree Hills. Lieutenant G. O. Chambers, from the Military Hospital at York, has been placed in medical charge of the troops at Moor Laws Camp. Lieutenant A. W. Bevis has been transferred from Chatham to the Military Hospital at Maidstone. Lieutenant J. K. Gaunt, from Cork, has been appointed for duty at Limerick.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions of officers of the Indian Medical Service:—To be Surgeon-General: Lieutenant-Colonel and Brevet-Colonel William Burney Bannerman (dated July 26th, 1911). Majors to be Lieutenant-Colonels: Benjamin Hobbs Deare, Benjamin Curwen Oldham, Robert Bird, C.I.E., Sidney Browning Smith, George Hewitt Frost, Edmund Wilkinson, George Francis William Ewens, Charles Duer, Henry Stotesbury Wood, Thomas Walter Irvine, James Entrican, Walter George Pridmore, Charles Donovan, Jeremiah Penny, and Douglas Henry McDonell Graves (dated July 28th, 1911). Captains to be Majors: William Ernest McKechnie, Harry Diamond Peile, Douglas Henry Fawcett Cowin, William Hancock Tucker, Charles Stewart Lowson, Dugald Nairne Anderson, Nath Manmatha Chaudhuri, Archibald Currie MacGilchrist, John Wallace Dick Megaw, Cecil Maurice Goodbody, Robert Steen, Frederick Fenn Elwes, Ernest Albert Churchward Matthews, Lessel Philip Stephen, Leonard Gilbert, Thomas George Nesbitt Stokes, Harry Malcolm Mackenzie, William O'Sullivan Murphy, and Cecil Charles Murison (dated July 27th, 1911).

The King has approved of the admission of the undermentioned gentlemen to the Indian Medical Service as Lieutenants on probation (dated July 29th, 1911):—John Alexander Sinton, Denis Fitzgerald Murphy, Edward Randolph Armstrong, Charles James Stocker, Eric Edward Doyle, Cyril Macdonald Plumptre, Archibald Wallace Duncan, Edward Austen Penny, George Blenkhorn Harland, Leon Francis Brandenbourg, John Edward Scudamore, and Henry Lewis Barker.

The commissions of the following Lieutenants on probation have been confirmed with effect from Jan. 28th, 1911:—John Scott, Alister Ralph Speirs Alexander, Kanwar Indarjit Singh, Frederick William Hay, George Tate, Sidney Milverton Hepworth, Harry Slater Cormack, George Selby Brock, Krishnan Gopinath Pandalai, John Frederick Henry Morgan, Jyoti Lal Sen, and Charles Albert Wood.

Lieutenant-Colonel J. Lloyd Jones, Assay Master of the Royal Mint at Calcutta, has been appointed Assay Master of the Royal Mint at Bombay, in succession to Lieutenant-Colonel A. Milne. Major W. Young, civil surgeon at Cawnpore, has been appointed to hold medical charge of the Unao district. The services of Major F. H. Watling have been placed at the disposal of the Government for employment in the Jail Department. Major C. Donovan, Madras Presidency, has been permitted to extend his leave of absence home from India by the Secretary of State. The services of Major Pandit Praraylal Atal have been replaced at the disposal of His Excellency the Commander-in-Chief in India. Major C. R. Stevens, professor of anatomy in the Medical College, Calcutta, and surgeon to the College Hospital, has been granted leave of absence home from India for six months. Captain R. C. MacWatters has passed the higher standard examination in Pashtu. Captain E. C. Hodgson, health officer at Simla, has been selected to officiate as Assistant Director of the Central Research Institute at Kasauli during the absence on leave of Major E. D. W. Greig. Captain R. E. Lloyd has been nominated a Fellow of the University of Calcutta. Captain C. I. Brierly has arrived home on 18 months' leave of absence from India. Captain H. H. Thorborn has been appointed an Agency Surgeon of the Second Class and posted as Civil Surgeon to the Khyber Pass Agency. The services of Captain F. C. Fraser have been placed temporarily at the disposal of the Government of Madras. Captain C. A. Sprawson, civil surgeon, has been granted by the Secretary of State for India an extension of his leave of absence for one month on medical certificate. Captain N. E. H. Scott, officiating agency surgeon, has been posted, on return from leave, as Residency Surgeon at Bagdad and *ex-officio* Assistant to the Political Resident in Turkish Arabia. Captain H. R. Dutton, officiating civil surgeon at Purnea, has been appointed to act as Civil Surgeon of Muzaffarpur during the absence on leave of Major B. R. Chatterton. Captain J. McPherson, officiating agency surgeon, has been granted leave of absence home from India for 11 months. The services of Captain E. Bisset have been placed temporarily at the disposal of the Government of the United Provinces for plague prevention duty. Captain R. A. Needham has been selected for appointment as Medical Officer of Health at Simla during the absence on special duty of Captain E. C. Hodgson. Lieutenant F. F. S. Smith has been appointed Specialist in Ophthalmology to the Second (Rawal Pindi) Division of the Northern Army in India.

Major T. A. Granger, I.M.S., has been appointed secretary to the Principal Medical Officer to His Majesty's Forces in India, in the place of Brevet-Colonel H. F. Cleveland, I.M.S.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Robert McC. Linnell is confirmed in his rank. Henry Meredith Buchanan to be Lieutenant (on probation) (dated 10th August, 1911).

THE IMPROVEMENTS IN THE NAVAL MEDICAL SERVICE.

Our contemporary, the *Broad Arrow*, referring to the changes recently made in the organisation of the medical branch of the navy, says: "Apparently the medical branch of the navy is in much the same position as the Army Medical Corps a generation ago. The recent reforms, well-intentioned as they are, do not go to the root of the matter. Until recognition of the medical man in the navy is as full as it is in the army the service will not attract good professional men in sufficient numbers. ..... If things are allowed to rest where they are we shall have as bitter an awakening in the next naval war as we had in the Crimea. In fact, the whole organisation of the medical branch wants to be thoroughly overhauled. ..... Many of the sanitary grievances of the lower deck, which give the Socialist agitator a chance, would be remedied if the medical branch were placed on a better footing. ..... But as the Admiralty has begun to move, perhaps it will continue the good work."

THE JAPANESE NAVAL MEDICAL DEPARTMENT IN THE RUSSO-JAPANESE WAR.

The *Archives de Médecine et Pharmacie Navales* presents in its August number the first instalment of a paper by Dr. Chemin, Médecin de Première Classe (as we would say, Staff-Surgeon), who is translating from the Japanese the fourth volume of the official history of the war of 1904–05, the volume which concerns itself with the work of the Naval Medical Department. At present he is dealing with the early battles of the war. In the third, the successful, endeavour to seal up Port Arthur 168 men were employed in the transports and their accompanying torpedo flotilla, of whom 46 per cent. were lost or killed and 15 per cent. were wounded. These latter were all on board a hospital ship by the second day following, and in Japan, in hospital, by the fourth day, so that the methods for handling the wounded were wisely planned and well executed. Collisions between ships and the explosions of mines destroyed one-sixth of the Japanese Fleet, whether number or size of ships be considered. Of the men of the ships which so foundered, 40 per cent. were lost, and 5 per cent. were wounded. So many men, wounded in the early destroyer attacks, died from their wounds that it was decided to put two hospital orderlies in each boat, except that of the divisional commander, to which a surgeon was sent. Not only the wounded were sent to the hospital ship, but also the bodies of those who had died. This article should be read by every naval surgeon.

The King has given to Surgeon James Campbell Bringan, R.N., His Majesty's Royal licence and authority to accept and wear the Insignia of Officer of the Order of the Crown of Italy, which decoration has been conferred upon him by His Majesty the King of Italy, in recognition of valuable services rendered by him on the occasion of the earthquake in Southern Italy in the year 1908.

During the presence of the Home Fleet in the Firth of Forth the Prince of Wales paid a visit to the Royal Naval Hospital at Butlaw.

Correspondence.

"Audi alteram partem."

SMALL-POX IN THE UNITED STATES: A DANGEROUS DOCTRINE.

To the Editor of THE LANCET.

SIR,—For a couple of weeks I have been keeping on my desk your issue of July 22nd, waiting for an opportunity to compose a suitable protest concerning your annotation on "Small-pox in the United States: A Dangerous Doctrine." In Dr. Trask's article there are, as the annotator painstakingly points out, a few sentences which, when carefully dissected away from the context, *might* be construed as giving aid and comfort to the antivaccinationists; but, read with the skill and care ordinarily bestowed on the reading of scientific articles, no such ideas would be conveyed; and at the worst the errors are not of the nature of "total disregard of logic," "non sequitur," &c., but are merely minor errors of rhetoric. The writer (Dr. Trask) has made it entirely possible for any fair-minded and otherwise sufficiently qualified reader to understand him, but has not quite succeeded in the Herculean task of making his article impossible of misinterpretation.

In the original article Dr. Trask was obviously trying to show that the great majority of small-pox cases in the United States are of an extraordinarily mild type, with a case-mortality of a fraction of 1 per cent., whereas the case-mortality in Germany, Japan, and elsewhere, as well as in certain brief and localised epidemics in the United States, runs up to the classical figures—namely, 15 to 50 per cent. or more—and that this low case-mortality in the United States indicates that the prevailing strain of small-pox here is in some essential particular different from small-pox in Europe and Asia and from the severe affection that occasionally breaks out in the United States. He supports this view with facts and arguments which your annotator perverts into the semblance of a "dangerous," "revolutionary," and "illogical" attempt to discredit vaccination! And this "in the face of such evidence, recounted by himself" (Dr. Trask) and quoted at length by the annotator, as to show that Dr. Trask thoroughly believes in vaccination as a measure of *individual* prophylaxis, and recognises that efficient *general* vaccination will stop even a virulent small-pox epidemic!

In the light of the annotation perhaps I can restate and enlarge on the propositions that have so badly confused the annotator in such a way as not to be misunderstood—at least, not in the same way as Dr. Trask was. This is highly desirable, because while the few careful readers of the Reports thoroughly understand Dr. Trask's views on American small-pox, these views are to-day misunderstood and discredited by thousands of physicians throughout the world, thanks to THE LANCET'S wide circulation and the annotator's misinterpretation.

1. It is true that in certain localities (e.g., *vide infra*) vaccination has been so efficiently performed that there is room for no other explanation of the rarity and mildness of small-pox; but no one familiar with *all* the known facts believes this explanation adequate to account (directly at least) for the almost invariably mild type of small-pox in the United States *as a whole*.

2. To explain the low case-mortality of small-pox in the United States we may assume either that the people are partially immune to the disease, or else that the prevailing strain of infection is greatly reduced in virulence, or both. There is little or nothing to show that the unvaccinated in the United States are for any reason more resistant to the killing power of small-pox than are the unvaccinated in Europe or Asia, who nevertheless appear to be from 10 to 100 times as apt to die when attacked. On the other hand, there is much to show that this low case-mortality in the United States is due to a lack of killing power in the infecting agent.

3. Such an immunity, if it exists at all, may be due to the cumulative results of vaccination or small-pox or other immunising influences as yet unknown, perhaps extending over several generations.

4. If the low case-mortality of the disease in the United States be entirely or in great measure due to an increase in the individual's resistance caused by vaccination or previous small-pox, we would expect that the cases among those not so protected would show the classical high mortality. On the contrary, the case-mortality is very low, even among the non-protected. No *resistance* theory applicable to the United States and not to other countries seems to have any facts to support it.

5. That it will not do to regard vaccination as a sufficient explanation for the low case-mortality of typical American small-pox is further shown by the history of several localities. Ordinary mild small-pox had been prevalent for some time, when suddenly, without any other appreciable change in the situation, high mortality epidemics broke out, which were cut short by efficient general vaccination. This indicates (first and most obviously) that efficient general vaccination will suppress even a virulent epidemic; and (secondly) that given the conditions as to small-pox protection usually existing in typical American localities, small-pox may be either (*a*) not present; (*b*) of the usual mild American type; or (*c*) very rarely of the old-fashioned severe type. In other words, it is almost certainly some factor operating on the community as a whole—some factor other than the desultory voluntary vaccination characteristic of English-speaking peoples to-day—some factor other than personal resistance of whatever nature—that determines what form of small-pox an infected American community is to have. In other words, this consideration further confirms the theory that variation in the seed rather than in the soil is the determining factor.

The "Public Health Reports" is *not* a widely circulated publication in the usual meaning of the term, although a few copies travel considerable distances. It is written and edited by and for professional sanitarians, and the bulk of its contents are the most somnifacient of statistics. Hence there would have been little danger of the anti-vaccinationists getting anything remotely resembling aid and comfort from this issue if it had not been for the painstaking assistance of THE LANCET!

I am writing this on my own initiative and responsibility,

without the knowledge of anyone in the service, least of all Dr. Trask.—I am, Sir, yours faithfully,

NORMAN ROBERTS,
Passed Assistant Surgeon, U.S. Public Health and M.H. Service.

Washington, D.C., August 24th, 1911.

*** Although we have already published in THE LANCET of August 19th Assistant Surgeon-General Trask's disclaimer of the significance that we attached to his original article in our annotation in THE LANCET of July 22nd, we print Passed Assistant Surgeon Roberts's letter. We do this because it does express clearly a position different from, but not necessarily exclusive of, the view that the careful perusal of Dr. Trask's article conveyed to us. A writer's meaning must be gauged by what his language does actually convey. What any writer intends to express is known only to himself and, perhaps, to some in personal touch with him. We have carefully re-read the original article as published in the Public Health Reports and our comment thereon, and we remain of the opinion that that comment, which Passed Assistant Surgeon Roberts calls perverse, was entirely justified from the material then before us. This opinion is strengthened by a reprint of Dr. Trask's article, in which the alterations from the original are so material as themselves to justify the construction that we placed on his original words. To give only one instance. In the original article Dr. Trask wrote (and we quoted the paragraph as part of our gravamen): "That the type of the disease as seen in the United States is due to the protective value of vaccination is shown not to be true for certain localities in which outbreaks of the virulent form of the disease have been reported." In the reprint this passage appears as follows: "That small-pox in the United States has become permanently mild has been shown not to be true for those localities at least in which outbreaks of the virulent form have been reported." Again, Dr. Trask, in his original article says: "To explain the small number of deaths in the United States, we may presume that either the people are partially immune to the disease or else that the existing infection is extremely mild and non-virulent." We asked, "Why, 'either ..... or else?' The two conditions are not mutually excluding." Passed Assistant Surgeon Roberts practically recognises this when in re-stating the same argument he adds the words "or both" to the proposition. The errors we cited do show, as we said, disregard of logic, their conclusions are "non sequiturs," and they are not merely errors of rhetoric, minor or otherwise, and oddly enough, Passed Assistant Surgeon Roberts, who reproaches us for this view, would appear to take it himself. We are glad to find that in the article as amended the meaning is clear. Our correspondent denies that the Public Health Reports are a widely circulated publication in the usual meaning of the term. Is it not the case that they are sent for comment to the principal lay press of the United States? Does not that press reach and influence the people of the United States?—ED. L.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—I hold no special *brief* for sterilisation, and the plan which I have always advocated for dealing with the "mentally deficient" is the following: The notification of these aments to the asylums committee of the county by the medical officers attached to the different schools. They would then be certified before a magistrate and be sent to some farm or industrial colony until the age of 21, when they would again be examined by some expert body appointed for the purpose and a decision arrived at as to whether they should be allowed out into the world, with or without sterilisation, or be segregated for life when no sterilisation should take place. The Lunacy Commissioners could be consulted on the subject, although it seems manifestly unfair to throw more duties on a body already overworked. The rich and poor should be notified, and the former, if they prefer, could have colonies of their own supervised by county officials.

A large number of paupers receiving outdoor relief are feeble-minded; these could be weeded out by the medical officers of the workhouses and segregated. The habitual criminal, the "mental alcoholic"—both degenerates—and the juvenile feeble-minded offender could be dealt with in a similar manner. These sections should be carefully classified and sent to separate colonies. This is a rough outline of the scheme I consider best and the details could be embroidered in. The main reason for making the age 21—it could be 18 in many cases—is that there is a large number of dull and backward children whose mental condition closely resembles that of feeble-mindedness, but whose state is really due to a faulty environment—lack of nutrition, &c.—and is not *inborn*. These under favourable conditions would become of average—maybe of more than average—intelligence, and could readily take their place in the world and in time beget healthy offspring. The plan will cost money, but just as an individual, when he is ill, does not object to dip deeply into his purse for the sake of health, so the nation should part freely with its wealth for the sake of national health. The Government is about to combat tuberculosis, why not degeneracy? It would be the truest economy in the long run. Taking the figures for last year, insanity has increased 262·2 per cent. on the figures for 1859, whilst during the same period the population has only increased 85·8 per cent.

Miss Dendy, the very able administrator at the Sandlebridge Colony, containing 225 feeble-minded boys and girls, has said that weakness of will in proper circumstances made for morality and for happiness; that if this class could be so easily guided into wrong in improper surroundings they could be equally well guided towards right in proper circumstances. A man has lately committed murder in London. What is his family history? Father an epileptic and a drunkard, mother insanity in her family and she herself a drunkard, the brother of the murderer in this asylum. Recently I have had occasion to take the family histories of the last 50 young females admitted here, ages from 15 to 25, non-imbecile and non-epileptic, not married and not mothers. What did I discover? 90 per cent. deeply infiltrated with insanity, epilepsy, tuberculosis, alcohol, and cancer. Take a family consisting of six children, two of whom were epileptics; these two should be prevented from begetting offspring; the other four, being apparently normal, need not be interfered with. Is this an unreasonable request? No one would knowingly breed from a diseased animal, and man, notwithstanding his high understanding, is yet essentially an animal. Surely nothing can be more wasteful than this army of degenerates.

To the medical profession public opinion entrusts the welfare of the race, and through this the destiny of the nation; therefore, it behoves us patiently to inquire into the causes of mental degeneration and fearlessly to recommend the remedy which, in my opinion, lies in eugenics. There are some who apparently fail to realise the great differences which exist between castration and vasectomy. Although I do not recommend castration I have always failed to understand why there should be such an outcry against the operation, for numerous *healthy* ovaries and testicles have been removed for the cure of *physical* diseases. If for the cure of physical diseases, why not for the *prevention* of *mental* diseases?

The crux of the whole question is this: Are the "unfit" producing children at the rate of 7 per family and the "fit" at the rate of 3? If this is so, it is not necessary to be much of a prophet to foretell the result, for the bedrock of heredity is that "like tends to beget like," and through the continuity of the germ plasm we obtain continuity of resemblance from generation to generation. Figs do not grow on thistles nor grapes on thorns. Environment can but develop or crush that which heredity impresses on the germ plasm; it is not creative, and is to heredity what manure is to a plant. But good and favourable conditions are absolutely necessary for the proper development of every living organism.

The eugenic rules may be summarised into three (Professor J. A. Thomson): (1) The mentally and physically healthy should be mated; (2) a markedly good constitution should not be paired with a tainted one, for this would be wanton

waste; and (3) every precaution should be taken to prevent a badly tainted stock from diffusing itself. A race which ceases to insure that its better elements have a dominant fertility destroys itself far more effectively than its foes could ever hope to do on any battlefield.

The highest gift which has been bestowed on man and woman is the *creation of life*, and do we not stand condemned when we deliberately permit degenerates to curse their offspring with a mental disease which will cause untold misery to many generations? Pity is the highest and most exquisite of human emotions, and surely the *prevention* of suffering is more noble than its *creation*.

I am, Sir, yours faithfully,
C. T. EWART, M.D. Aberd.

Claybury Asylum, Sept. 9th, 1911.

To the Editor of THE LANCET.

SIR,—The correspondence which has lately taken place in THE LANCET shows that not a few have failed to grasp the proposals I made in 1903. In no case have I proposed that either the ovaries or testes should be removed. I proposed three slight operations: (*a*) vasectomy—dividing and ligaturing the vasa deferentia; (*b*) spermectomy—dividing and ligaturing the entire spermatic cords; and (*c*) fallectomy—dividing and ligaturing the Fallopian tubes. Since then Dr. Sharp of Indiana, U.S.A., has proposed that the testicular end of the vas should not be ligatured, so that the spermatic fluid might infiltrate the local tissues and be absorbed. So far as we know, when vasectomy is performed there remain (1) sexual desire; (2) sexual power; but (3) no power to impregnate. With spermectomy all three disappear; with fallectomy there are sexual desire and power, but no power to conceive.

Some cases have been published where it has been alleged that women have become pregnant after the tubes and ovaries have been removed. My theory regarding this is that since we have so far no knowledge of what number of hours, days, or months the ova may remain in the uterus before impregnation takes place, therefore, the ova may be resting there *before* the operation has taken place. We know more about the vitality of the spermatozoa longevity. No doubt when vasectomy has been put more fully into use we shall have cases where impregnation has taken place after the vasa have been ligatured. But this will be due to the sperms contained in the vesiculæ, or because of female polygamy. This is one reason why, when possible, vasectomy should be performed early in life. I further proposed that sterilisation should be divided into voluntary and compulsory. The former would apply to tuberculosis, cancer of the womb, deformity of the pelvis, and other physical and mental conditions where two or more practitioners could certify that the parental diseases were incurable. It is instructive to find Dr. Sharp relating that of some 1000 criminals sterilised over 500 demanded to be so operated upon. I think a very large proportion of degenerates suffer so greatly that their lives would be a little brightened if they knew they would not curse their children with their incurable defects. Under compulsory sterilisation I propose to include idiots, imbeciles, feeble-minded, sane and insane epileptics, lunatics, sexual perverts, habitual inebriates, drug habitués, prostitutes, chronic vagrants, and habitual criminals. Such a list will be found in the second edition of my work, "Race Culture; or, Race Suicide."

May I suggest that it would help to clear our ideas if THE LANCET appointed a committee to inquire into and report upon the alleged secondary secretions of the testes and ovaries. For so far we seem to have obtained most of our knowledge (?) from the various drug manufacturers and from quacks. I am, Sir, yours faithfully,

Liverpool, Sept. 10th, 1911. ROBERT R. RENTOUL.

To the Editor of THE LANCET.

SIR,—Perhaps you will admit a belated note from a correspondent who, being abroad, has only just seen this controversy as far as your issue of Sept. 2nd. The question as originally put was unanswerable, because sterilisation by castration and by vasectomy or salpingectomy was regarded as posing the same moral issue. The former operation has well-known consequences to body and mind; the latter affects no function or appetite or capacity, but merely makes parenthood impossible. But the question, as put, has led most of your correspondents to condemn sterilisation on the ground that it means castration.

Castration was never contemplated by Sir Francis Galton; it has been repeatedly repudiated by myself in lectures to the Sociological Society and the Eugenics Education Society; Mr. Havelock Ellis has done likewise, and has explained the (exceedingly obvious) difference between castration and vasectomy in the *Eugenics Review*, and will shortly do so again in one of the "New Tracts for the Times" which are about to appear.

Dr. Waller has thus occupied a column and a half of your space with entirely irrelevant considerations. He cannot name one "crack-brained exponent of eugenics"—to quote his courteous phrase—who advocates what he condemns; but the names of its slack-brained opponents are legion.

I am, Sir, yours faithfully,
C. W. SALEEBY, M.D. Edin., F.R.S. Edin.

Scheveningen, Sept. 15th, 1911.

PELLAGRA IN EGYPTIAN PRISONS.

To the Editor of THE LANCET.

SIR,—In your review of the late Sir Eldon Gorst's report on Egypt and the Soudan in 1910 (THE LANCET of August 19th, 1911, p. 539) I notice the statement that bread made from maize has been substituted for wheaten bread in the prisons, and that "evidently there is no official belief in the view that this change of diet may increase the cases of pellagra among the prisoners." It seems probable that the latter remark is due to a misunderstanding as to the kind of maize used in the prisons, which in reality is the small kind usually called millet or "durrha Owaiga." The large-grained durrha called "durrha Shamy," or "Indian corn," or simply "maize," is not used in the prisons' diet. So far as I know the former kind (millet) has not been inculpated as a cause of pellagra. As what is ordinarily called maize is not used in making bread in the prisons in Egypt at all, any pellagra that may arise in the prisons cannot be ascribed to the change from wheaten bread, unless of course millet is also believed to be a cause of pellagra.

I may add that in the Report on the Prisons of Egypt for 1910 Dr. R G. Kirton, the principal medical officer, writes on p. 18 that the use of maize bread was not allowed, partly because of its supposed causal relation to pellagra, but that millet was selected to replace wheat. In view of the rival theories as to the causation of pellagra, it may be worth while to record the actual facts in the case of the Egyptian prisons. I am, Sir, yours faithfully,

J. WARNOCK,
Director, Hospital for the Insane, Abassiah.

Cairo, Egypt, Sept. 8th, 1911.

TOXIC EFFECT OF ASPIRIN.

To the Editor of THE LANCET.

SIR,—I have long been anxious to see a case of aspirin poisoning as described by your correspondent Dr. Alexander Brown, in THE LANCET of Sept. 9th. Perhaps he or others of your readers who may have met with similar cases can tell us whether the patients presented symptoms characteristic of minor thyroid inadequacy. The symptoms I refer to are subnormal temperature, hypersensitiveness to cold, liability to chilblains, marked dental caries, general muscular asthenia with sensation of fatigue, and constipation. In view of Leonard Williams's researches we must also accept the presence of enlarged tonsils or adenoids (past or present) and nocturnal enuresis as equal evidence. Any rickety symptoms must also be added to the list, and among these must be included the contracted palatine arch; nor must one forget to include goitre, inasmuch as this is clear evidence on the part of Nature that the supply of thyroid secretion is inadequate. In the case of Graves's disease the secretion is doubtless from some points of view excessive, though possibly even here there is some insistent demand for secretion which may be the hidden cause of the disease. Many other individual symptoms may need to be considered in weighing the merits of a given case of thyroid insufficiency, and such symptoms must be gleaned from those of myxœdema, cretinism, and other conditions in which thyroid medication has proved so valuable. Naturally they will not *all*

be found in every case of *minor* thyroid inadequacy. But the point of my inquiry is this.

The symptoms of aspirin poisoning are practically the same as those of urticaria major or angioneurotic œdema, of which I have only treated two cases. The first was before I had experience of the power of thyroid medication, and though I patiently administered calcium lactate I was distinctly disappointed in the results, and the patient was subject to frequent and sudden attacks of an alarming nature. The mucous membrane of the cheeks and fauces was several times so affected as to make respiration difficult and swallowing almost impossible, and we were constantly prepared for tracheotomy. The lips and eyelids were often so swollen and red as to make the patient unrecognisable, and wheals of urticaria the size of the palm of the hand would appear on her limbs or body. She eventually got well and was lost sight of after about six weeks, but calcium lactate alone did not prove to be the panacea I looked for. The second case was similar but less intense. The patient was 25 years of age, and had been subject to these attacks for three or four months when I first saw her, but in her case the urticaria never lasted more than an hour or two. Thinking that her general condition warranted me in classing her among the thyroid deficients, I gave one grain of thyroid extract three times a day with calcium lactate. The attacks of urticaria rapidly lessened both in frequency and intensity, and after three weeks disappeared for good. Thyroid medication was continued, and the general health improved so much that in about a couple of months all treatment was left off, and the patient has remained well since. The results in this case warrant one in thinking that urticaria major was attributable to thyroid deficiency. It would therefore be extremely interesting to know whether those patients in whom a dose of aspirin speedily provokes a similar condition are not also thyroid deficients, especially in view of the apparent antagonism between salicylates and thyroid secretion to which I drew attention in a recent article. Naturally one would not infer that a single dose of aspirin could produce urticaria or angioneurotic œdema in a few moments by direct action on the thyroid gland, but it is not difficult to suppose that the presence, or absence, of an adequate supply of thyroid secretion in the blood may so modify the condition of the latter (possibly *viâ* the calcium coefficient) that the normal individual can take aspirin without getting angioneurotic œdema, whilst the thyroid deficient might be unable to do so. Have any of your readers administered aspirin to cretins or to patients suffering from myxœdema, and, if so, with what results? The answer to this question may throw some light on the matter, though, again, there are obvious differences between myxœdema and minor thyroid inadequacy.

I am, Sir, yours faithfully,

H. EWAN WALLER.

Moseley, Birmingham, Sept. 15th, 1911.

THE RADIO-ACTIVITY OF SEA-WATER.

To the Editor of THE LANCET.

SIR,—The very interesting letter by Dr. Sidney Russ which appeared in THE LANCET of Sept. 16th does not, if I may be pardoned for saying so, quite clear up the physical side of the question.

It is, I believe, admitted that the water from many radio-active springs loses its activity rapidly on being bottled. Such water, if examined after several months, may perhaps be shown to contain minute quantities of actual radium salt in solution, but the amount of radium permanently present cannot be taken as a measure of its activity when drunk at its source. How the extra quantity of emanation—over and above the amount formed by its dissolved radium salt—gets into the spring water, I do not pretend to say. But it is at least theoretically conceivable that ocean water may be similarly charged when freshly collected.

Only a careful determination of the quantity of emanation present in freshly gathered sea-water (obtained as described by Robert Simon) with the amount contained in old samples can settle the matter. This determination presupposes great technical skill and the command of delicate apparatus. It is essentially a problem for the trained physicist and not for the physician. All that the latter can do is to point out that, physiologically and therapeutically, sea-water behaves in the same manner as water rendered temporarily radio-active by dissolved emanation—i.e., by a gaseous and rapidly decaying radio-active body, present apart from, or in addition to, radium itself.

I am, Sir, yours faithfully,

F. HERNAMAN-JOHNSON, M.D., Ch.B. Aberd., R.N. (retired).

Bishop Auckland, Sept. 16th, 1911.

TO MEDICAL FREEMASONS.

To the Editor of THE LANCET.

SIR,—May I again, through the medium of your widely read columns, appeal to medical men, and medical Freemasons in particular, for votes for the Masonic charities? At the forthcoming elections there are three medical candidates. Votes for any of the Masonic institutions are equally acceptable, as exchanges can be effected, and will be gratefully received and acknowledged by me.

I am, Sir, yours faithfully,

WILLIAM WILSON,
Secretary, St. Luke's Medical Lodge of Instruction.

184, Goldhawk-road, W., Sept. 19th, 1911.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Having read your annotation in THE LANCET of July 15th, p. 171, entitled, "Emoluments in the Indian Medical Service," and some of the letters published from time to time in your correspondence columns, I venture to express my opinions on some of the points raised therein.

1. With regard to the contention that private practice is obtainable in most places—so it is, to the maximum value of £20 to £50 a year. The truth is that for 90 per cent. of civil surgeons there is really no private practice available. The remaining 10 per cent. are the men in the "plum" billets, who, naturally and rightly, are mostly senior men or those having special qualifications. The reason why nearly all Indian Medical Service men are so anxious to obtain civil employment is that there are excellent opportunities for good professional work. Moreover, a civil surgeon is his own master to a greater extent than is any other "district" or regimental official, probably.

2. It is not correct to say that a young officer has usually to wait eight or ten years before obtaining civil employment. The length of time varies from about three up to about ten years. Naturally one has to wait longer for the more popular provinces.

3. With regard to the remark of one of your correspondents that the purchasing power of the rupee had halved and the cost of living doubled, or words to that effect, I do not agree. No doubt its purchasing power has decreased, but pay has been increased. The real truth is that it is the fashion to use many articles of European manufacture nowadays, the price of which is necessarily high, as compared with similar articles of indigenous origin, and that consequently even a "fair wage" does not go far. If people care to, they can easily ride country-bred ponies instead of expensive "walers" and arabs, and have country-made cloth made up by the local "darzi" into "knockabout" suits which are quite good enough for every-day wear, &c. That polo and shooting are becoming the sports of rich men hardly seems to me to be a legitimate "grouse," even if true. I doubt if it is absolutely true, and think that the following instances support my contention. Firstly, I know a subaltern in a British regiment who plays polo and pig-sticks and occasionally shoots big game (he shot a tiger two years ago, has played polo for his unit, and has killed many pigs this season). He gets only a very small allowance. Secondly, I once served with a native infantry regiment which had been "runner up" to a British cavalry regiment in an open tournament. I doubt very much whether any of the British officers of that regiment had any private means whatever, but their mess was run on very economical lines, and they did not drink champagne or smoke expensive cheroots.

4. With regard to the numerous transfers in the early years of a man's service, travelling allowances are given

which will cover or nearly cover the expenses of a bachelor, and if men will be such fools as to get married before they have made for themselves a position which justifies the keeping of a wife, it seems to me that they ought to be prepared for hardships. As a matter of fact, these long transfers are educational, in my opinion, as one sees new races and manners. I speak from experience, having three times been transferred from one end to the other of the empire as well as having had other transfers of 1000 miles or so.

The general advantages of the Indian Medical Service are enormous. I will enumerate some of them in general terms, premising that there are differences between the military and civil sides, generally to the advantage of the latter. 1. Pay at more than a "living wage" from the beginning. 2. An extremely liberal scale of pensions, the first of £300 a year on completion of 17 years' service, rising every year thereafter *and available at every intermediate year* to £700 on completion of 30 years' service, with the possibility of increased pay and rates of pension if administrative rank is obtained. All privilege leave, furlough, &c., are reckoned as service for pension. 3. One year's holiday for every three years' work with special allowances for and extra furlough for study. 4. A variety of work and appointments so that the most diverse temperaments and capabilities can get the sort of "job" they like and "scope" which the average man would not get in a more highly developed country. For instance, such diverse appointments as the following: sanitary commissioner of a province, consultant physician or surgeon, bacteriologist and public analyst, pathological research appointments, superintendent of a jail or lunatic asylum, &c. Here I may note that I know of the case of an officer of about 35 years of age and less than 12 years' service who, subject to the control of the Government, has the sanitary destinies of 22 million people in his hands and draws a salary of about £1000 a year. He is a "good man," of course, but not a genius. 5. The privilege that the men with whom you have to work are as a rule educated gentlemen of your own social class. I should here like to quote from a letter I recently received from a very senior Indian Medical Service officer. He says:—

> I have had no "grouses" whatever against the service, and I can strongly recommend it to any keen young medical man, even now that the outlook may not be as hopeful as it was 32 years ago. I think perhaps to the confirmed "grouser" the best thing is to refer him to the many men of about his own calibre who were students with him at home and compare the lives they have led and the fortunes they have made with that of their contemporaries who elected to go into the I.M.S. If this does not convince him of some of the advantages of the I.M.S. all I can say is nothing will and discussion is useless.

Let me also detail the experiences of an intimate friend in the Indian Medical Service. He is not yet 33 years of age, nor has he completed ten years' service. He is an average man without special qualifications. He has had a sister out to the country and has paid the greater part of the expenses of a long university education for a younger brother. He has been able to spend between £200 and £300 on his own interests and amusements, such as scientific apparatus, books, horses, &c. He has had two holidays of three months each and one of six weeks, and his life has been insured for several years past for well over £1000. He is engaged to be married shortly, and if he dies on the day of his wedding his widow will get a pension of about £120 a year, and he has got no debts. Is it likely that he could have done, and enjoyed, so much in any other medical service or in private practice?

Now as to the disadvantages. These are very real, and some of them, such as those due to the climate, one does not fully realise till one gets older, when they entail separation from wife, children, and friends. The less obvious disadvantages are none the less real. They are undoubtedly affecting the recruiting of most of, if not all, the Indian services. They tend to increase and not to diminish as time goes by. As they are of a political nature, and I am an officer of the Government, I do not care to say much more about them, but the position may be summed up in the words of a distinguished junior officer of the British Army, since retired, which he uttered to me just before he left India for good. These were, "In my opinion, this country will be no place for a self-respecting white man in ten years time." I do not intend to reply to rejoinders, because this letter is not written to call "grousers" to repentance, but to show that the Indian Medical Service is not entirely composed of such.

Finally, Sir, I must apologise for the length of this letter, but the nonsense one sees written by "grousers," who often ignore the real difficulties of the situation, must be my excuse.

I am, Sir, yours faithfully,

August 28th, 1911. CIVIL SURGEON.

TUBERCULOUS PERITONITIS WITHOUT ASCITES, APPARENTLY CURED BY INCISION.

To the Editor of THE LANCET.

SIR,—The notes of the accompanying case were taken at the patient's bedside over ten years ago, and the case had gone out of my mind when I met the anæsthetist who assisted me, and we talked the incident over, coming to the conclusion that the case should be published, as in similar circumstances similar means might be taken in an apparently hopeless case. Although I have since the date of this case operated on several cases in which ascites was present I have not had a case of tuberculous disease of the peritoneum witnout ascites being present. No doubt many such cases have been treated by incision, though I have not come across any account of them, and none of the surgeons to whom I have described the case has had a similar experience.

I was called on June 10th, 1900, to see a boy, aged 14 years, who had been attended for about five months by the medical officer to his club, who had told the parents that he could do nothing further, and warned them to expect his death in less than a week. I admit that I felt he was not far out in his prognosis. The patient was practically skin and bone; he was lying on his back in an apathetic condition, from which he was aroused at frequent intervals by pain in the abdomen. His pulse was 120, his temperature 99·8° F. He had frequent attacks of diarrhœa, with constipation at intervals of a few days. The abdomen was distended, very tender on light percussion, tympanitic, with no dulness in the flanks. Food caused him pain, and apparently nearly all the best-known artificial foods had been tried.

At the end of a week he improved to the extent of losing a great deal of the pain and the abdomen became less distended and generally rigid and retracted. The temperature varied between 101·6° to 99°, and he took more interest in his surroundings, but this improvement did not last long. It was due, I think, to a more rigid system of dieting, for he was given food every two hours, and plasmon was given with the other foods. But by the end of June he was to all appearances slowly dying, and it then occurred to me that an experimental incision through the abdominal wall could do no harm and might possibly do good. On July 4th, under A.C.E. administered by another doctor, I made a small incision below the umbilicus. The peritoneum was thickly studded with small sago-like tubercles, both on the visceral and parietal membranes. I introduced two fingers through the opening and gently separated such adhesions as I could reach; not a trace of fluid in the peritoneal cavity was found. The wound was closed with silkworm gut sutures and not touched for about 11 days. There was an obvious improvement in the first day or two in his general condition. The temperature became normal and stayed normal, the bowels became more regular, the appetite came back, and I see by my notes on August 6th I lent him some volumes of the *Strand Magazine*. He continued to take his food well, and I persevered with the plasmon. On Sept. 10th he weighed 4 st. 10 lb., the average weight of a boy his age and height being about 6½ st. What he weighed when I first saw him must at a guess have been under 4 st. By Oct. 10th he weighed 5 st. 1 lb. On Oct. 22nd he did not seem so well, so I weighed him and found he had lost about 2 lb. Investigation showed that he had not taken plasmon for nearly a fortnight; this was resumed, and my next note, dated Nov. 5th, gives his weight as 5 st. 3 lb. A fortnight later, Nov. 19th, the gain on this was 4 lb.—viz., 5 st. 7 lb., at which he remained on Dec. 3rd. He continued the plasmon. On Dec. 17th he weighed 5 st. 10½ lb., and at my last visit on Dec. 22nd his weight was 6 st. 1 lb. I marked him cured and took him off my list.

I learnt that he had taken a place as errand boy to a grocer either at the end of January or beginning of February and was keeping quite well. I showed the patient and read a few short notes on his case at one of the local meetings of the Eastern Division of the British Medical Association in

November or December, 1901, a year after his care. He was perfectly well, and may, for all I can tell to the contrary, be alive and well to-day. It seems impossible to doubt that this boy's life was saved by the simple incision. How it could have acted I do not profess to know. I also consider that the plasmon was a great help, and the two noted occasions when it had been discontinued—on one he lost weight and on the other the weight remained stationary—were to my thinking more than a coincidence; that is proved by the increase of weight when he returned to his regular quantum of the plasmon.

I am, Sir, yours faithfully,

Sept. 15th, 1911. A. H. M.

TATTOOING *v.* VACCINATION.

To the Editor of THE LANCET.

SIR,—Since I wrote the letter which appeared in THE LANCET of August 26th, I have been told by an elderly ex-officer (not medical) of the Indian Army that in his day he was aware of a belief among the Burmese that tattooing was a prophylactic against malarial fever, but that he had not heard of it as a substitute for vaccination. The point, however, to which I called attention, and as to which Mr. J. Y. W. MacAlister has corroborated me, is that British medical officers appear to inculcate the belief among British soldiers serving in India that tattooing protects against small-pox. Do they or any of them admit doing so, and if so, on what grounds do they do it?

I am, Sir, yours faithfully,

Sept. 16th, 1911. E. A. A.

THE ORGANISATION OF THE MEDICAL PROFESSION.

THE POSITION IN NORTHUMBERLAND AND DURHAM.

(FROM OUR SPECIAL COMMISSIONER.)

Newcastle, Sept. 18th, 1911.

TEN years ago the medical practitioners of the counties of Durham and Northumberland were in open revolt against the system of contract work then prevailing. Without organisation, however, there was little or nothing to be done. At Gateshead an association had been formed, and there was in Newcastle a Medical Ethical Society. It was in August, 1900, that the first and not very successful attempt was made to form a union of the Northumberland medical practitioners, much on the same lines as that of the County of Durham Medical Union which was already in existence. The movement grew and was fortunate in securing for its president Mr. Rutherford Morison. As a leading surgeon and consultant Mr. Rutherford Morison had no personal interest whatsoever to serve, and this gave a great moral force to his arguments, whether addressed to medical practitioners or to the medical aid organisations by which they were employed. By the end of the year 1900 a union had been formed of Northumberland practitioners, and it amalgamated with the existing Newcastle Medical Ethical Society. The next year the newly created Medical Union was already engaged in numerous disputes throughout the district and several medical strikes took place. Details concerning this organisation and struggle were published in these columns at the time. There were 350 practitioners in Northumberland, and before the expiration of one year 171 had joined the Medical Union. In the course of time the union gained further strength, and after many struggles overcame all resistance so far as the colliery districts are concerned. Formerly a collier paid 6*d.* a fortnight for medical attendance on himself and family. This is now uniformly raised to 9*d.* through the action of the union. The pitmen in Northumberland are very loyal to their trade union, and the medical practitioners made a great point of this fact. They freely called the imported medical men blacklegs, and appealed to the pitmen to allow that the medical practitioners had equal right to form a union of their own and oppose strike-breakers.

In the county of Durham there has not been the same measure of success. It seemed more difficult to bring the colliers and the medical practitioners into line. Then the settlement effected in the towns was not so satisfactory. Here there are a multitude of insurance companies and clubs of all sorts. Some of these only paid 2*s.* 6*d.*, and very few paid more than 3*s.* 6*d.* a year to their medical officers. At Newcastle the conditions have been raised to a uniform 4*s.* a year. This, however, is not satisfactory because the capitation fee is not high enough and because the 4*s.* arrangement has not a retrospective effect. Those who are working for less continue to do so, and it is only on their posts becoming vacant that the 4*s.* minimum payment is to be applied.

The Problem of National or Local Union.

After these results had been attained a grave problem presented itself. The constitution of the British Medical Association was recast, and the question arose as to whether the fighting unions formed in various parts of the country should join the British Medical Association now that it gave promise of taking an active part in the economic questions that so deeply affect the material welfare of the majority of medical practitioners. Of course, the larger the union or association the greater its power if it can be made to take action, but the larger the body the more apt is it to become inert. However, the Northumberland and Newcastle Medical Union resolved to join, and a year later the County Durham Union followed this example. It was arranged, however, that, while merging with the British Medical Association, these local bodies were to retain the organisation they possessed and their officers, only instead of being isolated county unions they were to be the county committees of the general association or union. But, and this is perhaps where in practice the greatest difficulty has arisen, these old, well-tested societies, these veterans in the fight, were to become sections, within the North of England Branch of the British Medical Association, and it was felt that the activity of the old Durham and Northumberland Unions would be somewhat compromised by the comparative inertness of the larger local body of which they were now to form part.

Arrival of the National Insurance Bill.

As an example of this inertness, when the National Insurance Bill came before the public nothing was done by the branch at once. The old unions, it is claimed, would have taken up the question energetically but could not do so now, and the North of England Branch of the British Medical Association did not. Therefore, as the leaders and officials did not move, the mass took action without order and without leadership. Independent practitioners of their own initiative convoked a meeting, and that they were justified in their action was proved by the fact that some 300 medical men attended. Many members, of course, of the existing organisations were present, but they came as individuals. This meeting eventually decided to support the conditions which the British Medical Association had laid down in regard to the Insurance Bill, this being before Mr. Lloyd George had consented to give over the control of the medical services to the Health Committees.

Amalgamation of Local Medical Unions with the British Medical Association.

It is necessary to explain that the position in Northumberland and Durham was altogether exceptional. The unions which medical practitioners had formed to fight the clubs and medical aid associations before the alteration of the constitution of the British Medical Association were for the most part confined to one town and its immediate neighbourhood. It was easy to assimilate these smaller bodies with the local divisions of the British Medical Association, when they would still maintain to a large extent their former identity. The various bodies and committees of many old medical unions were maintained in the divisions of the British Medical Association, and their scope of action was enlarged by being able to send representatives to the meetings of the nearest branch, which would perhaps comprise several counties. There is strength in such an enlargement, but there is weakness also. All these secretaries of divisions are under the branch, and if the management of the branch is unsatisfactory then all the local bodies suffer in consequence. Formerly a local body failed to progress or to hold its own if its secretary and committee were not up to the mark; now all the local bodies, however competent in themselves, may suffer through the branch by which they are dominated. In regard, however, to Northumberland and Durham, the professional

unions formed in these counties were so large and important that the by-laws of the British Medical Association had to be specially modified so as to meet their case. A new hierarchy had to be created. It was agreed that the old unions, their committees and secretaries—in fact, the whole of the machinery which had been so admirably constructed and with which so many victorious battles were fought—should be maintained. Only instead of being called unions, and as they were too big to become divisions of the British Medical Association, it was decided that they should be known as the Northumberland and Newcastle Committee and the County Durham Committee. But these committees, as is the case with the divisions, were placed under the North of England Branch. Two years ago, when the annual meeting of the North of England Branch took place, no measures were taken to elect the Northumberland and Durham committees. The most vital and the most victorious organisations of this part of England were thus unfortunately flouted. Naturally a feeling of resentment has been engendered, which after smouldering for two years has now come to a head.

Feeling against the Suggested Suppression of the Old Unions.

The North of England Branch held its annual meeting at Sunderland on Sept. 14th, and I can testify that it was rather a stirring occasion. The programme as arranged consisted of business, lunch, golf, and a sailing excursion. The council of the branch met for a short time before lunch, and I am informed, for I was not present, that it was a stormy meeting. The President was instructed not to sign the minutes, and much dissatisfaction was expressed. Lunch followed, and time did not permit a further meeting to be held before the golf and the trip on the Tyne. On the other hand, those present at the meeting were determined that matters should not rest; therefore no officers were elected and no business was accomplished. It was all adjourned to another general meeting of the branch, to be convoked for that purpose and that purpose alone, early in October, to be held at Newcastle, a town which is much more accessible to the majority of members.

The Harm that has been Done.

Before concluding with this subject, and so that its importance may be better understood, it would be appropriate to give some indication of what has been lost through the effacement of the great northern medical unions. There have been a good many colliery strikes. The miners of course could not pay their medical attendants, though, if anything, there would be more rather than less illness among them. The colliery surgeons found that their incomes stopped entirely so long as the strike lasted. In this urgent position no practical steps were taken. Some of the colliery surgeons had sufficient influence with the miners to obtain extra payments when the strike was over so as to make up for the arrears accruing during the strike, but other medical practitioners obtained nothing at all, and had to work during the whole period of the strike without any payment whatsoever.

Formerly the consultants were brought into close connexion with the general practitioners through an ethical committee on which both sides were represented. The consultants in the early days of the struggle had very naturally urged that they were not going to ostracise and refuse to consult with some fully qualified practitioner because he had been condemned by a union of which they were not members. Before taking such an important step they wanted to know what it was all about. Therefore this joint committee of consultants and practitioners was formed and still exists, but apparently no longer works. As a result the list of blacklegs is no longer up-to-date, and many regrettable errors have consequently taken place. An eminent consultant related to me that on one occasion he had been telephoned to consult in regard to a patient living some distance from Newcastle. But he fancied the practitioner who sought his assistance was on some professional black list, so he telephoned to inquire from a colleague at Durham who was likely to know. The answer was that even to ask such a question on the telephone was absolutely libellous, while the only answer that could be given was that "the man ought not to be there." This clinched the matter, the Newcastle consultant refused to go, and at once informed all his colleagues of what he had done. Consequently they all likewise refused to consult with the practitioner in question. The important point is the sequel of the story. The practitioner thus boycotted was a very honourable and loyal member of a medical union; it was all a mistake, a deplorable mistake. On another occasion a consultant had received patients from, and written letters of advice to, a person who was certainly not on any black list because he was on no list at all. He was simply an unqualified practitioner. In the old days, when the medical unions were in full activity, such errors could not have happened, and the Northumberland and Durham practitioners are determined to bring them into activity again. If this can be done in coöperation with the British Medical Association, well and good. The principle of joining and participating with the work of the larger and national organisation is approved, but not to the point of sacrificing local activities.

When Does a Collier's Son Cease to be a Child?

The 9*d*. the miners pay per fortnight for medical attendance on their families includes of course the children. But when does a child, in this respect, cease to be a child? When the sons commence to work in the mines are they still to be considered as children? It is suggested that when 16 years old they should pay as adult unmarried males 6*d*. per fortnight. There is no general rule, nor will it be possible to establish such a rule till general action is taken.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Health of Liverpool: The Decline of Fever.

THE efforts made by the housing committee of the city council in rehabilitating the slums of the city are worthy of all praise. An inspection of the areas abutting on Great Howard-street, Vauxhall-road, and Scotland-road, recently made by the members of that committee, showed beyond all demonstration that unhealthy property has been transformed into light and airy tenements, based on up-to-date sanitary principles. It is an axiom that environment has much to do with the formation of character. Given better home conditions, a man or woman becomes more enlightened as to his or her responsibilities and as to the duties of citizenship. Since the demolition of insanitary property, now proceeding during the last 10 years or more, the convictions for drunkenness in the improved areas have been reduced, in some cases 50 per cent. The work of the municipality in this direction must be regarded as a means towards the mitigation of the strife and hooliganism for which Liverpool, unfortunately, has such an unenviable reputation.

At the proceedings of the health committee, which were held on Sept. 14th, the medical officer of health reported that the death-rate for the week was 27·2 per 1000, compared with 15·3 per 1000 in the corresponding week of last year. The statistics showed that during the week 130 deaths had taken place from diarrhœa, as against 30 in the corresponding week of last year. There are only 18 patients in the city hospitals suffering from typhoid fever. Special precautions are constantly taken by the health department in the matter of washing out the courts and alleys by means of disinfectants.

A report by the medical officer of health on hospital accommodation in Liverpool states that the number of beds at present available in the six hospitals is 1104. The value of the city hospitals and the immense amount of useful work performed are shown by the fact that no fewer than 6608 patients were treated within their walls during the year, the great majority being cases of scarlet fever. The advantages of the hospitals are now so fully recognised by the public that the removal to hospital of their sick dependents is insisted upon and claimed as a right. A few years ago, in cases similarly circumstanced, removals would never have been sought and would even have been resisted. Attention is drawn to the remarkable drop in the fatality from scarlet fever in the city during the last 60 years, due, in part at least, to hospital provision for the isolation of patients and to better administrative methods. The death-rate of typhoid fever had steadily declined since 1894—a decline attributable to the greater facility for isolation, an abundant supply of pure water, improved housing, and the

greater care taken in the supervision of those food supplies, more especially milk, which play an important part in the dissemination of this disease. The claims resulting from the enlightenment of the public cannot be met without expense, but it would be difficult to point to any example of necessary municipal expenditure in which the direct benefits, alike to the recipients and to the community, are more strongly marked. The treatment of cases of tuberculosis at the City Hospital, Fazakerley, has, in the opinion of Dr. E. W. Hope, met with great success.

St. Luke's Day Medical Service.

The annual service for the members of the medical profession in commemoration of St. Luke's Day will be held at St. Luke's Church on Sunday, Oct. 15th, at 3 P.M. The Lord Bishop of London will be the preacher. Members of the profession are invited to wear academic costume.

The Imbroglio at the Chester Infirmary.

The Mayor of Chester has, I am informed, written a letter suggesting that the matters in dispute at the infirmary be referred to a committee of three gentlemen. He suggests the names of Sir Horatio Lloyd, Judge Moss, and another to be chosen by the board of management of the infirmary. The Mayor has hopes that the adoption of his suggestion will put an end to a controversy which is harmful to the charity and which gives pain to many of its warmest supporters. He also hopes that it may result in the retention of Mr. B. C. Roberts, the late chairman, on the board of management.

The Prevalence of Diarrhœa at Crewe.

The medical officer of health of Crewe reported on Sept. 14th that during the last month 51 deaths took place in Crewe from diarrhœa. Persons of all ages had been affected, but the highest mortality had been amongst infants under 12 months, the number of deaths being 41. Of this number 33 were bottle-fed, which rendered the infants specially liable to diarrhœa in hot weather.

Sept. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

St. Andrews University: 500th Anniversary.

THE celebrations of the quincentenary of St. Andrews University began on the evening of Sept. 12th with a reception by the Chancellor, Lord Balfour of Burleigh, followed by a students' torchlight procession. On the afternoon of the same day (this, however, having no official connexion with the quincentenary programme) Mr. Andrew Carnegie, who is a former Rector of St. Andrews University, was presented with his portrait in oils, painted by Mr. E. A. Walton, R.S.A. Principal Sir James Donaldson presided. There were present Lord Balfour of Burleigh, Mrs. Carnegie, Principal Sir Donald and Lady MacAlister of Glasgow, and a large number of students and others. On the 13th the proceedings commenced with a procession of students, graduates, delegates, &c., to the Church of the Holy Trinity, where the commemoration service was held. Later in the day a presentation of addresses took place in the North Hall in the presence of a great assemblage, over which the Chancellor of the University presided. After the presentation of addresses the Chancellor read the following address from the King:—

To Lord Balfour of Burleigh, Chancellor of the University.

I desire to express my regret that I cannot be present at the festival of the 500th anniversary of the foundation of the University of St. Andrews. I am deeply sensible of the national significance of the celebration of this event in the history of the oldest University in Scotland, and recognise with pride the association of my predecessors with St. Andrews.

I desire to assure the Court, Senate, graduates, and students of the University that I heartily sympathise with this auspicious event in their corporate life, and trust that it may conduce in all ways to the well-being of the University. GEORGE R. & I.

The Chancellor then welcomed the representatives from other universities who had honoured them with their presence: 100 universities and upwards of 40 other societies were represented. On the 14th Lord Rosebery, the Rector, delivered his address at half-past 10 in the North Hall, after which Sir James Donaldson was presented with an address of congratulation on his attaining 25 years of service as the Principal of the University. At the banquet in the evening Mr. A. J. Balfour delivered a splendid speech. On the 15th the proceedings were brought to a close. At St. Andrews a number of short addresses were delivered in the Volunteer Hall by distinguished guests. In the evening there was a graduates' and students' dinner in the Bell Pettigrew Museum, followed by a students' ball in the North Hall. In Dundee, to which a special train conveyed the guests, a reception was held at University College by the President, Lord Camperdown, followed by addresses in the Fleming Gymnasium by Lord Balfour of Burleigh and Lord Rosebery.

Resignation of Professor Finlay.

Professor David W. Finlay, who occupies the chair of the Practice of Medicine at Aberdeen University, has intimated that he intends to resign his professorship at the end of the present year. His resignation will come before the University Court at its next meeting, which will be held on Oct. 10th. Professor Finlay was appointed to the chair of Medicine at Aberdeen University in 1891 on the death of Professor J. W. F. Smith-Shand, and has thus held the post for 20 years. A native of Glasgow, Professor Finlay was educated in that city and in Vienna. He was for some time physician and lecturer at the Middlesex Hospital in London, and also physician to the Royal Hospital for Diseases of the Chest and to the Royal Scottish Hospital. He has also been inspector of examinations in medicine to the General Medical Council, upon which body he represented Aberdeen University. In the affairs of Aberdeen University Professor Finlay has taken a keen and practical interest. In September, 1901, he represented the University at the bi-centenary celebrations of Yale University. In 1907 he was appointed Dean of the Faculty of Medicine, while only last week he represented Aberdeen University at the Christiania University celebrations, and was one of those on whom the centenary medal was bestowed. In 1908 he was appointed one of the honorary physicians to the King in Scotland in place of the late Sir Thomas McCall Anderson, and in June of last year he became a physician-in-ordinary to King George.

Appointment of Assistant Medical Officer to Kingseat Asylum.

At a meeting of the Aberdeen City District Lunacy Board held on Sept. 12th, Dr. Ian Ogilvie of Preston was appointed assistant medical officer of Kingseat Asylum at a salary of £120 per annum. There were only three applicants in answer to the board's advertisement, the other two being ladies. Considerable discussion took place over the appointment, several of the members being of the opinion that the post should be re-advertised at an increased salary. The motion to appoint Dr. Ogilvie was eventually carried by 25 votes to 4.

The Royal Infirmary, Dundee.

The quarterly meeting of the governors of the Royal Infirmary, Dundee, was held on Sept. 15th. In submitting a report ot the work done in the institution during the last quarter the chairman said there had been 870 in-patients, as compared with 956 for last year's corresponding quarter, and 5205 out-patients, as compared with 4224. There were 383 patients in the convalescent home, compared with 375 last year, and in the sanatorium 11 adults and 33 children. The work done at the sanatorium was excellent and increasing, and the directors had decided that the laundry, which the old board of governors had had to close owing to lack of funds, would be reopened. The workshop given by an anonymous donor was in course of erection. Regarding the National Insurance Bill, the chairman said that when it was in operation there would undoubtedly be a falling off of out-patients at the infirmary and an increase of in-patients.

Outbreak of Diphtheria at Forfar.

Owing to an outbreak of diphtheria at Forfar the school board has given instructions for certain classes in the West Burgh school to be closed.

Sept. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Report on the Dublin Hospitals.

THE Board of Superintendence of the Dublin Hospitals has recently issued the annual report dealing with those hospitals which are in receipt of Government grants. There are nine of these in Dublin—three general hospitals, viz., Dr. Steevens', the Meath, and the House of Industry; two lying-in hospitals, the Rotunda and the Coombe; and four

other special hospitals, the Westmorland Lock, the Cork Street Fever, the Royal Victoria Eye and Ear, and the Royal Hospital for Incurables. Two of these, the Westmorland Lock and the House of Industry, are practically maintained by Government. They receive grants respectively of £2600 and £7600 a year. The grants to the other institutions have been made at various times and without any system. Dr. Steevens' Hospital, which keeps wards for soldiers' wives and for the constabulary, gets £1300 a year. The Royal Victoria Eye and Ear receives £100. The Board of Superintendence expresses the opinion that the hospitals fulfil their objects in an economical and thorough way. The probable effect of the National Insurance Bill on voluntary hospitals is discussed as follows:—

> Hitherto the public have looked on the labouring man disabled for work as a fit object for charity. They have subscribed and left legacies to hospitals because it was known that through the wards of the hospital and the special dispensaries attached to them lay the smoothest, shortest, and most economical road to recovery. It is unlikely, should the State arrange for the care of the labouring classes when incapacitated by sickness, that the charitably inclined will continue to subscribe to the same extent. Now, there is no doubt that for the maintenance of hospitals the system of voluntary aid, supplemented by State aid, yields the best and most economical results. By it the services of men of the highest standing are put within easy reach of the poor, both in the wards and in the dispensaries. We think this system is in danger, and that if it is once allowed to collapse it may not be possible to reconstitute it. This would be a serious thing for the poor, a serious thing for the progress of science, a serious thing for the taxpayer, and for the training of gentlemen for medical service. The practice of medicine is advancing by specialisation. Each class of disease has its department in an hospital. It is not too much to say that a club doctor, responsible for the health of a large number of work-people, will, in a great majority of the cases, have to call on the hospitals or their dispensaries for help. On what terms will this be given? If the voluntary aid system is abolished it must mean a suitable remuneration for all medical service. We are of opinion that a system on such a foundation would not work as well or as economically as does the present one.

Water-supply of Irish Towns.

The scarcity of water to which reference was made in a previous letter in THE LANCET of Sept. 9th is widespread and serious. Dublin is not so badly off as some other places owing to the recently increased catchment areas and new reservoirs, but the necessity for economy is being enforced by the corporation. In Belfast the supply has been again curtailed by cutting it off between 6 o'clock at night and 9 o'clock on the following morning. The special liability of Belfast to this unfortunate shortage is due to the absence of a sufficient reservoir for the supply, which comes from the Mourne Mountains. The building of such a reservoir was part of the scheme as originally adopted, but, in the first place, the difficulties in the way of construction and the expense involved proved to be so great, and, in the second, the revenue at the disposal of the board had been so freely expended in other directions, that the Water Board felt justified in postponing the construction of the reservoir. The Act of Parliament, under which power had been taken in 1893, amongst other things, to construct a reservoir in what is called the Silent Valley, on the Kilkeel river, will expire in 1913, and as the present dry summer has demonstrated the absolute necessity for the construction of a great storage reservoir, the Water Commissioners have decided to promote a Bill next Session for an extension of the time for the construction of these works and for raising the required capital. In Derry the matter was discussed at a meeting of the corporation on Sept. 18th, when the very dangerous state of the city was pointed out. In Lisburn the principal source of water-supply to the town is exhausted and another pond is being used. The water from this source, which is regarded as impure, is also failing, and now disused wells are being opened. In the glens of Antrim, as a result of the scarcity of water, all kinds of cattle, sheep, &c., have gone down in price. No one ever remembers such a situation in Ulster. At the time of writing the drought still continues.

Dungannon Workhouse Infirmary.

As a result of the Local Government Board's report on the management of the workhouse infirmary (see THE LANCET, Sept. 16th, p. 859), the board of guardians, at their meeting on Sept. 14th, decided that the services of the head nurse be dispensed with from that day month. The motion to do this was carried by 27 votes to 12.

Death of Dr. W. Langford Symes.

Members of the profession in Ireland have learnt with much regret of the death of Dr. W. Langford Symes, who formerly practised in Dublin as a specialist in the diseases of children. In his younger days he held a dispensary appointment in county Wicklow, but desiring a wider scope for his energies he resigned his post and studied children's diseases at the Great Ormond-street Hospital, London. Returning to Ireland, he settled in Dublin, and obtained the Fellowship of the Royal College of Physicians of Ireland in 1898. For some years he edited the *Journal of the Irish Medical Association*. A few years ago his health became unsatisfactory, and he left Dublin to take up practice at Landrindod Wells. His death occurred in London on Sept. 13th. Dr. Symes was a modest but energetic man, of much real kindliness, who made many friends.

Memorial to Dr. Rutherford of Ballinasloe.

A movement is on foot to establish a memorial to Dr. William Rutherford of Ballinasloe, whose death occurred a few months ago. It is proposed to erect a monument in the town where he spent his professional life, and also to provide for the education of his youngest children. Dr. Rutherford was a cultured and capable physician, whose name was held in honour by the profession, not only of his own district, but of the entire country. The present monument on the part of the public is an unusual honour to be paid to a medical man.

Sept. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Hygiene of Nutrition.

FOR about two years considerable uneasiness has existed throughout France over the increasing difficulty of procuring the necessaries of life at a reasonable price and of a satisfactory quality. A variety of causes has contributed to raise the price of many of the most commonly used foodstuffs. The floods of last year have diminished not only the quantity but also the quality of fruits and vegetables, and domestic animals being perforce less well nourished, the quality of their meat also has suffered, while a rise in the price of meat, milk, and eggs has taken place. This summer, with its heat, and particularly with its drought, has completed the work begun by the floods, so that now for some weeks the price of many of the most indispensable commodities has reached a considerable height on account of insufficient production. The exports remaining much about the same, the first effect of the raised prices has been felt in France itself. Sugar especially has risen in price to an entirely anomalous extent and is still on the rise, owing to the complete failure of the beet crop in many regions devoted particularly to its cultivation. This distressing state of things, moreover, has caused in towns labour troubles among the classes for whom the rise in prices is indeed a calamity, and it has become necessary on all sides to seek a remedy for this state of affairs. It is to be feared that the dearness of raw material will result in extensive adulteration, to the detriment of the general health. This will further augment the misery of the poor if the increase in the cost of provisions necessitates parsimony in providing. The labour revolts, restrained at first but constantly becoming bolder, may have the happy result of finding a way to reconcile individual interests for the public welfare.

The "Aoûtas."

By this name are designated in France certain minute red insects, which are found in abundance during very hot summers in the country, and particularly in the fields. When walking, and especially when sitting on the grass, no bite is perceived, nor is one conscious of the presence of these insects, for they are too small for observation. But at home when night comes their bites are felt and cause great distress. The insects, unlike fleas, mosquitoes, and similar creatures, are not satisfied with inflicting a single bite, they burrow under the skin and constitute a sort of timepiece, for during the day they are quiet, but towards evening they give rise to insupportable pricking, which continues during some five or six days, until, in fact, the insect dies. The bites are sometimes so massed and so painful as to simulate a true skin disease, and cases have been known in which the unfortunate victim, ignorant of what is the matter with him, has consulted medical man after medical man who gravely prescribe for some skin

disease, naturally without effect, until the patient happily falls into the hands of one who, recognising the nature of the trouble, is able quickly to relieve him.

Sept. 19th.

*** From the prominence given by our correspondent to the attacks of what are popularly termed "harvest bugs" we assume that these troublesome parasites are not as well known in France as in England, and yet some of our earliest information concerning them is of French origin. A full description of *prurigo du Rouget*, or erythema following the attacks of leptus autumnalis, was given 30 years ago in Mégnin's "Les Parasites et les Maladies Parasitaires chez l'Homme et les Animaux Domestiques." Dr. J. C. Thresh noted in our columns in the course of an article on the subject an outbreak of erythema in France described in the *Sante Publique* in 1872, where the sufferings of certain agricultural labourers led to judicial proceedings. In Brocq's "Diseases of the Skin" the action of the leptus autumnalis is also described. We refer our readers to a very full paper on the natural history and dermatitis due to these parasites, communicated by Dr. William MacLennan to the columns of THE LANCET on Dec. 16th, 1905.—ED. L.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Montreal Vital Statistics.

THE annual report of the Health Department of Montreal, recently issued by the medical officer of health, Dr. Louis Laberge, shows that the death-rate of Montreal increased slightly in 1910, while the number of births decreased. The decrease in births amounted to 0·70 per 1000 and marriages increased by 0·56 per 1000. The births numbered 16,616, or 36·45 per 1000, as compared with 37·15 of the previous year, and the marriages 4386, or 9·62 per 1000 inhabitants, as compared with 9·06 of the year before. Figures are supplied in tabulated form which tend to show that the death-rate of Montreal has not varied greatly for a number of years. In 1905 it was 22·96; in 1906, 22·98; in 1907, 22·56; in 1908, 22·95; in 1909, 22·03; and in 1910, 22·40. Neither has the birth-rate exhibited much change during the same period. In 1903 it was 36·08, and in successive years it has been: 35·90, 35·84, 37·35, 36·05, 38·43, 37·15, and in 1910, 36·45.

Contagious Diseases in Montreal in 1910.

Dr. J. E. Laberge, chief of the Contagious Diseases Department of the Montreal Board of Health, accounts for the increase in the cases of contagious diseases in 1910, which is noted in the report of the department, by stating that medical men are complying more regularly with the provincial regulations. The report for 1910 shows that the number of cases of contagious diseases was in that year 8749, as compared with 6494 for the year before, or an increase of 2255. Dr. Laberge also draws attention to the increasing number of cases of tuberculosis notified, which, in his opinion, is a matter requiring immediate notice. The cases of tuberculosis registered at the department in 1907 were 919; in 1908 the cases were 1000; in 1909 the registrations were 1114; and in 1910 these had increased to 1336.

Insanitary Conditions in Montreal.

In commenting on certain features of the above-mentioned report Dr. Louis Laberge recommends that in the future the city should not permit the opening of any street which is not supplied with a system of sewers and water mains. He further considers that tanneries, soap factories, and establishments in which green hides are cured should not be tolerated in Montreal itself, because if sanitary regulations are relaxed they become a nuisance. The construction in different parts of the city of four garbage incinerators for house refuse is recommended. Dr. Laberge suggests that further bathing facilities shall be provided. On one sin of sanitary omission nothing is said. The stranger within the gates of Montreal, especially if he comes from Europe, is greatly struck and frequently inconvenienced by the lack of public conveniences for men and women. In Montreal there are no public lavatories, with the exception of very inadequate accommodation at the railway stations. This failure on the part of the municipal authorities to provide public lavatories is not only a source of great inconvenience, but is to some extent a matter detrimental to the health of the city.

Cocaine in Montreal.

Cocaine appears to be increasingly used in Montreal. According to the annual report of the superintendent of police, 150 arrests have been made since July of this year on charges of improperly using or selling the drug.

Canadian Public Health Association.

The first annual meeting of this association will be held in Montreal on Nov. 21st to 23rd. There is to be a symposium on housing and town planning, as well as one on sewage installations.

Toronto's Slums.

Dr. Charles J. Hastings, medical officer of health of Toronto, has recently prepared an exhaustive report on Toronto's slums based upon visits of inspectors to 4693 houses. He advocates expropriating an area surrounding the city which comprises an acreage of 17,920. Of 2051 families visited in the central section of the city, 1275 families lived in four or more rooms, 348 families in three rooms, 227 families in two rooms, 139 families in one room, 61 families in basements, and 1 family in a cellar. 108 of these houses were pronounced unfit for human habitation. There are 92 tenement houses in Toronto.

A Hospital for Inebriates.

The Ontario Society for the Reformation of Inebriates aims to promote the reformation of indigent inebriates in Ontario by making use of the public hospitals of the province and by combining therewith the Massachusetts probation system. In Toronto a medical officer and a probation officer attend the police court, and offer medical treatment and help to the inebriate. Medical treatment is given either at the home of the prisoner or in the office of the medical man. But the society is hampered in its work by the need for a special hospital entirely devoted to the treatment of inebriates. The Ontario Government has this project under consideration, and some such institution may be looked for in the immediate future.

The Laurentian Sanatorium.

A few weeks ago the new Laurentian Sanatorium at Ste. Agathe des Monts, province of Quebec, was officially opened. Situated about 100 miles from Montreal, overlooking one of the beautiful valleys of the Laurentians, where the climate is comparable to that of the famous Saranac Lake institution, this sanatorium commands one of the finest situations in all Canada. The building and equipment enhance the value of the situation. The building has accommodation for 50 patients and is so constructed that wings can be added at any time. Amongst those who attended the opening ceremonies were Dr. Baldwin and Dr. Kinghorn of Saranac Lake, Dr. Adami and Dr. Lafleur of Montreal, and Dr. Otis of Boston. Under the auspices of the Laurentian Society, which inaugurated this work, Ste. Agathe des Monts will be a centre in the province of Quebec for the scientific treatment and study of incipient tuberculosis. In Canada, so far, most of the practical work in fighting tuberculosis has been carried on by private philanthropy. Governments should well consider a remark of Dr. Kinghorn in his address: "Any patient, taken in time, is practically sure of being cured."

Inspection of School Children in Ontario.

The Ontario Medical Council passed the following resolution with regard to the inspection of school children at its recent annual meeting:—

That the Council, in the interests of school children, respectfully recommend to the Minister of Education the advisability of taking a physical census of the school children, with the view of comparing the health and physical condition of children in urban and rural districts; and in the meantime further recommend the training, as in England, of the students in the model schools, normal schools, and faculties of education in such a knowledge of school hygiene as will enable them to recognise common defects and diseases of children.

Fire at the Hamilton Hospital for the Insane.

The Hospital for the Insane at Hamilton, Ontario, was partially destroyed by fire on August 1st. Eight of the inmates perished in the flames. The hospital had a capacity of 1220, and there were in residence on Oct. 1st last 1223 patients.

Sept. 11th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Failure of the Monsoon.

ONLY those who have been in a famine-stricken area can realise what the failure of the monsoon means. The "trade winds" may be regarded as divided into a western and an eastern half so far as India is concerned. The eastern half has not failed, but the western wave may now be said to have failed more or less completely, as it is now the third week of August and there has been very little rain in the western areas of India. The Central and United Provinces and the Punjab are chiefly affected. There must be famine now in some areas, though, of course, we are more prepared for this, and such irrigation works as there are have done much to lessen it. The heat has been continuous and intense. In some parts of the Punjab the *mean* for the last three months has been over 106° F. in the shade. The humidity, of course, has been only about 52. The chances are against malaria. The cause of the monsoon failure is most probably related to the very late, heavy fall of snow in the Western Himalayas, which did not occur in the Eastern Himalayas. The cold current of air has prevented the trade winds taking their usual course, and so we find the lower West of India having a large amount of rain.

Malaria in Bombay.

Dr. C. A. Bentley's report on malaria in Bombay and the Government resolution thereon, which were referred to in THE LANCET of Sept. 2nd, p. 732, form the chief subject of medical interest in Bombay. The report showed an appalling degree of malaria, and Dr. Bentley traced this to the wells in and about houses. The report showed a large percentage of infection among Parsees. It has now been discussed by the corporation. As usual with such reports, Indian medical practitioners of the corporation were not behind in giving vent to criticisms. Much of this criticism did not reflect on the speakers. Dr. Sukhia agreed with Dr. Bentley that fever was rampant among the Parsees, but he did not agree with the figures for the incidence of spleen index. He thought that Dr. Bentley had applied himself to his work with a preconceived idea that the Parsees suffered from malaria on account of the wells in their houses. In his opinion the works at the docks, &c., were the chief causes of the outbreak in 1908 and in previous years. Mr. Mistry thought that the report was intended to whitewash the report of the special commission appointed by the Government of India at Mian Mir. Sir Balchandra Krishna thought malaria chiefly due to works carried out by the Part Trust and railways, and that they should be called on to contribute substantially to the cost of measures decided upon. Dr. Dadachanji disagreed with Dr. Bentley's charges against the wells as the chief cause. Mr. D. P. Vacha said some hard things. He objected to any statutory powers being given to any inspector to enter houses. The proposition before the corporation, to appoint a committee to consider the action to be taken to stamp out the scourge, was carried.

Three Years' Progress in Bengal.

The triennial reports of the year are now published. The Inspector-General of Civil Hospitals in Bengal shows how malaria is being fought in that province. A committee was established, investigations were carried out, and quinine was sold at 10 grains to the pice. In 1910, 1,570,666 packets and 1,181,140 tablets were sold. Sub-assistant surgeons were deputed to give medical relief in the worst areas. Instruction on the cause and treatment of malaria is about to be tried in schools. During the triennial period 24 new dispensaries were opened under Government supervision. The Inspector-General points out that the medical requirements of the province have in no sense as yet been adequately met, and in some districts—e.g., Muzaffarpur with one dispensary for 227,566 persons—the population is out of all proportion to each dispensary available for their use. The reason for this deficiency is lack of funds. Colonel Harris pays a tribute to medical missions, but these alone do not suffice to fill the gap which exists.

Eastern Bengal and Assam.

The sanitary report for this province for 1910 shows a birth-rate of 37·96 per 1000 and a death-rate of 33·71 per 1000. Dr. Bentley has been appointed as a Deputy Sanitary Commissioner for five years, and has been given a special medical staff to carry out measures against malaria. The operations at Dinajpur and Jalpaiguri were not successful.

Professorships at Lucknow.

The new Medical College at Lucknow is to have five whole-time professors, of whom four will be officers of the Indian Medical Service. Of these, the professor of bacteriology and pathology will, in addition, be the chief surgeon. He will also carry out all post-mortem examinations. There are to be two lectureships—viz., in forensic medicine and materia medica, and these are to be given to military assistant surgeons. These do not possess *registrable* qualifications. The General Medical Council may take note of this, and examining bodies in England will have to awake to the fact that certain class certificates given in India should not be accepted for degrees in Britain.

August 26th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Hong-Kong Medical and Sanitary Report for 1910.

THIS report. which has just been issued, compares favourably with those of former years and reflects credit on the public health authorities, who, in the midst of a continually changing and overcrowded population, have to cope with more difficulties than occur in almost any other British colony. Last year the rainfall was 70 inches, considerably below the average of the past 20 years. The total population of the colony is 350,975, of whom 330,169 are Chinese and 11,532 are Europeans and Americans. Among Chinese the death-rate was 22·50 per 1000, and among non-Chinese it was 10·04 per 1000, which contrasts very favourably with that of the United Kingdom, though it must be borne in mind that over half the population is between the ages of 20 and 45. With reference to the statistics I have given in previous notes of the high infant mortality in Peking, it is interesting to see that among the Chinese the known deaths of infants numbered 2495, while only 1253 births were registered. This surplus is explained by the fact that numbers of children are being brought into the island from the mainland, but the figures are significant enough to show the huge wastage of child life in the Far East.

Respiratory diseases.—Phthisis alone accounts for 780 deaths, of which 765 were Chinese. Pneumonia caused 1165 deaths, of which 1153 were Chinese. The deaths from phthisis among Chinese were 10·3 per cent. of the total deaths in that community. Considerable efforts have been made to put a stop to the inveterate habit of spitting in public buildings, dwellings, and on footpaths, wharves, &c. At the instance of the Government an anti-spitting league was formed by leading Chinese, which has been active in its endeavours to check this obnoxious practice.

Nervous diseases.—There were 257 deaths of infants less than one year old from tetanus, trismus, and convulsions.

Malarial fever.—The total number of deaths was 591, of which nine only were those of non-Chinese. Anti-malarial measures have received considerable attention from active sanitary staffs, over $30,600 having been spent in the year on drainage and on oiling mosquito-breeding haunts. The incidence of malaria was somewhat higher than in previous years, and one of the explanations given for this is the greater uniformity of the rainfall during 1910, when there was an almost daily succession of small showers during the rainy season, sufficient to keep the breeding-pools supplied with water, and an absence of heavy rain storms, which have the effect of scouring out the many rock pools that constitute the greatest difficulty in regard to anti-malarial measures in the colony.

Beri-beri.—566 deaths occurred, and the cause of this disease is attributed in Hong-Kong to the eating of white or polished rice—a different view to that of Shanghai, where the public health authorities are inclined to lay the cause at the door of body vermin.

Plague.—The incidence of plague was very light, only 25 cases, with 23 deaths, being recorded, of which four were imported. Active rat catching and collection were carried on throughout the year.

Typhoid fever.—There were 67 cases of this disease, with a case-mortality among Europeans of 12 per cent. In most of the cases the infection was probably contracted by eating salads of raw vegetables grown in Chinese market gardens, where it is customary to water and manure the plants with diluted urine and night soil.

In the Tungwah Hospital, where patients on admission can elect to be treated by European or Chinese methods, there is annually a big balance of success in favour of western medicine. In spite of that fact, many Chinese persist in preferring their own system, as shown by the greater number of admissions to the native side of the hospital. During 1910 there were 1699 who asked for European treatment, of whom 199 died, while of 2062 who underwent Chinese treatment 747 died. A large number of post-mortem examinations were carried out, and the statistics of the bacteriological laboratory show that it is in a high state of efficiency.

Abscess for Ten Years following Abortion.

A remarkable case is reported by Dr. A. C. Hutcheson of Kashing, Chekiang, of a Chinese woman who complained of acute abdominal pain and had more or less constant vaginal discharge. A distinct mass, exquisitely tender, was found in the lower right quadrant of the abdomen, and on vaginal examination a hard body was felt projecting from the cervix about a quarter of an inch. When this was pulled out it was found to be a Chinese chopstick eight inches long, with sharpened end. Its withdrawal was followed by the discharge of bloody pus of the foulest odour. The patient was absolutely ignorant of the presence of a foreign body in her uterus. Dr. Hutcheson then learnt that ten years before she had called in a Chinese midwife to perform an abortion, having had three children in rapid succession and desiring a rest from her labours. During all this time she had suffered from severe attacks of abdominal pain, sometimes with, sometimes without, fever, but almost constantly with foul bloody discharge. During the attacks she was confined to bed. She was able to attend to her work. A laparotomy was performed, and on opening the peritoneum fluid blackish pus gushed out. Tubes were introduced through the abdominal wound and thorough vaginal drainage was established. Some weeks later the patient left the hospital cured. Ten years seems a long period of time and must almost be a record for septic inflammation following perforation of the uterus. It also seems strange that in ten years nature did not establish an effective barrier to the absorption from the abscess cavity, but allowed the woman to suffer from the toxins developed all that time. The chopstick no doubt acted as a drain whenever the tension became too great in the abscess cavity, thus accounting for the intervals of freedom from severe pain. Dr. W. H. Venable of Kashing last year removed a chopstick a foot long from a patient's vagina. This one had been in 13 months. It was pushed through the posterior fornix up into the posterior part of the pelvis.

Peking, August 15th.

Obituary.

JAMES REID, F.R.C.S. ENG., L.S.A.

BY the death of Mr. James Reid, which took place on Sept. 12th, Canterbury has lost a citizen to whom it owes much, for the improved sanitary condition of that city is due in a large measure to his work. He was born in 1821 at Hampstead, and after serving as apprentice to a medical practitioner, he studied at St. Bartholomew's Hospital and was one of the first to live in the residential college which was opened with Sir James Paget as Warden. In 1843 he qualified by taking the Membership of the Royal College of Surgeons of England, and started in a joint practice at Dover. In the following year he became a Licentiate of the Society of Apothecaries of London, and in 1876 was elected a Fellow of the Royal College of Surgeons. In 1846 he removed to Canterbury, where he was soon actively occupied in all that concerned the medical interests of the city. He rendered invaluable services to the Kent and Canterbury Hospital, to which he was senior surgeon for many years and afterwards consulting surgeon. He was formerly surgeon to H.M. prison at Canterbury. Mr. Reid was one of the promoters of the East Kent Natural History Society, and for many years he was its honorary librarian. The Canterbury Nurses' Institute also owed much to him, as joint founder and honarary secretary and treasurer.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. G. Jochmann of Breslau has been recognised as *privat-docent* of Medicine.—*Bonn:* Dr. C. Menge of Heidelberg has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. H. Fritsch, resigned.—*Breslau:* Dr. J. Pohl of Prague has been appointed to the chair of Pharmacology in succession to Dr. W. Filehne, resigned.—*Florence:* Dr. E. Marri has been recognised as *privat-docent* of Ophthalmology.

Dr. T. B. Hyslop will deliver the first Hunterian lecture before the Hunterian Society on Oct. 11th at 9 P.M. He has chosen as his subject, "Intracranial Murmurs and their Relation to Tinnitus Aurium."

Mr. Alexander Gray, M.B., C.M. Glasg., a well-known practitioner in Bradford, died on Sept. 15th. While present at an operation at the Bradford Royal Infirmary he was taken suddenly ill and expired almost immediately.

THE Lettsomian lectures of the Medical Society of London will be delivered at the rooms of the society, 11, Chandos-street, Cavendish-square, W., on Feb. 5th and 19th, and March 4th, 1912, by Dr. Archibald E. Garrod, F.R.S., who has taken as his subject Glycosuria.

LITERARY INTELLIGENCE.—With the view of making the eleventh edition of "Quain's Anatomy" more easily accessible to students Messrs. Longmans, Green, and Co. are re-issuing the volumes already published at lower prices. Vol. I., Part 2, Histology, by Professor Schäfer, is expected to appear in the autumn.

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—The opening of the seventieth session of the School of Pharmacy will take place at 17, Bloomsbury-square, London, W.C., on Wednesday afternoon, Oct. 4th, at 3 o'clock, when the presentation of the Hanbury gold medal will be made by the President, and the inaugural sessional address will be delivered by Dr. J. Macdonald Brown.

REMEDIES FOR BABY-FARMING EVILS.—Miss F. Zanetti, the inspector in the township of South Manchester, read at Berlin a paper on the Protection of Illegitimate Children Nursed for Hire, at the Third International Congress for the Study and Prevention of Infantile Mortality. The following were among the points that she made. The protection afforded by the State to infants nursed for hire should not be confined to illegitimate children; as they, however, form probably about nine-tenths of the total number it may be assumed that the recently secured legislation in England is intended chiefly for the benefit of those unfortunates. If boards of guardians availed themselves of their full powers the condition of children nursed for hire would be greatly improved and baby-farming of the worst type suppressed, provided especially some amendment was obtained to make registration compulsory when children are received for reward, without specifying the time (at present 48 hours) during which they may be kept without notification. "Middlemen" between persons anxious to dispose of children and others wishful to adopt infants with whom a substantial premium is paid require suppression. It would appear that there are a number of people who make money by adopting infants for sums of money, passing on such infants within the 48 hours during which a child may be nursed without the sanction of the authorities, at the same time retaining a portion of the premium received. The adoption of the amendment regarding registration above mentioned would check the traffic and at the same time provide supervision for the large number of infants nursed by day only, who are frequently left in charge of very old and incapable nurses during the hours when the mothers are at work.

MISSIONARY EXHIBITION.—It is proposed by the Society for the Propagation of the Gospel to hold a large Missionary Exhibition at the Church House, Westminster, during June, 1912. At this exhibition one of the special features will be the Medical Missions Department. A sub-committee has been formed, calling itself the "Mission Hospital Committee," including a number of the leading medical men in London. The chairman is Sir Francis Champneys. Mr. James Anderson Robertson, secretary of the Medical Missions Department, S.P.G., and interim secretary of the Mission Hospital Commitee, writes from 15, Tufton-street, Westminster, S.W., to appeal to medical men, missionaries, and others throughout the country, who are in possession of interesting medical curios of other lands, to give them on loan during the time the exhibition is being held. The greatest care will be taken of them, and they will be returned to their respective owners immediately the exhibition is over.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.—The election is announced of Dr. Theodore C. Janeway to fill the vacancy on the board of scientific directors of this institute caused by the death of Dr. C. A. Herter. The board has entire control of the scientific work done by the institute. Its other members are Dr. William H. Welch of Baltimore, Dr. Theobald Smith of Boston, and Dr. L. Emmett Holt, Dr. Herman H Biggs, Dr. T. Mitchell Prudden, and Dr. Simon Flexner, all of New York. Dr. Janeway is a graduate of the Sheffield Scientific School of Yale University, and took his M.D. at the College of Physicians and Surgeons (Columbia University) in 1895. Since 1909 he has been Band Professor of the Practice of Medicine at the College of Physicians and Surgeons, and is on the medical staff of the Presbyterian Hospital, New York. He is also secretary and treasurer of the Russell Sage Institute of Pathology. Dr. Janeway has done important work on the subjects of blood pressure, diseases of metabolism, and cardio-vascular changes in nephritis.

LIFE ON THE OXO CATTLE RANCHES.—A very interesting series of kinematograph pictures illustrating farm life in the Argentine was shown to a selected audience of journalists on Sept. 18th, at the Oxo factory of the Lemco and Oxo Company in Park-street, Southwark Bridge, London, S.E. The incidents in the daily life on the Oxo cattle ranches were admirably portrayed and most realistically produced. The demonstration served to show the magnitude of the company's industries, and the care which is taken to provide pure and standard products. Mr. Charles F. Gunther, the chairman of the company, gave some interesting and remarkable figures in regard to the enormous herds of cattle belonging to the company and some particulars also showing how free from disease these animals were which spent their life entirely in the open air. He further quoted figures bearing upon the food value of grass and the quantities of grass and water daily consumed by 350,000 head of cattle. Some calculations of this kind were also made by our Special Commissioner some years ago on the occasion of his visit to the Liebig cattle farms in Argentina.

THE TREATMENT OF TUBERCULOUS JOINTS: A PUBLIC SPIRITED EXPERIMENT AT BRIGHTON.—The experiment at Brighton of treating patients suffering from tuberculosis of bones and joints at the sanatorium sanctioned by the Brighton town council in the early part of last year at the request of the medical officer of health, Dr. Duncan Forbes, is evidently meeting with success. The sanitary committee is pleased with the results, inasmuch as it has just sanctioned the experiment being continued for a further period of 12 months. Dr. Duncan Forbes in his report to the committee says: "Since March 8th last 2 cases of hip disease have been discharged cured and without deformity while 1 case of knee-joint disease was discharged for operation as it showed no material improvement. There are now 9 tuberculous joint cases in the sanatorium, 4 of spinal disease and 5 of hip-joint disease. Of these cases, 1 of hip and 1 of spinal disease are cured and will be discharged in a few days. Of the remaining 7 cases, 3 have been in hospital for over a year and still require some months' treatment, and 4 have been in hospital for a shorter period and are progressing satisfactorily." The estimated cost of the experiment for 12 months is put at £320.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ACOMB, L., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Newport County Hospital.

HUNTER, C. S., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Carnoustie District of the county of Forfar.

MARSHALL, C. B., M.B., Ch.B., D.P.H. Vict., has been appointed Assistant House Surgeon at the Ancoats Hospital, Manchester.

McDONALD, N., M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior House Surgeon at the Ancoats Hospital, Manchester.

MORETON, R., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Overton District of the county of Flint.

MOSS, LOVEL, M.B., Ch.B Vict., has been appointed Assistant House Surgeon at the Warrington Infirmary.

TITCOMBE, R. H., M.D., Ch.B., D.P.H. Vict., has been appointed House Physician at the Ancoats Hospital, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 per annum.

BIRMINGHAM, UNIVERSITY OF.—Lecturer in Physiological Department. Salary £150 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Physician.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CAPETOWN, SOMERSET HOSPITAL.—Two Assistant Medical Officers. Salary £200 per annum, with rations and quarters.

CHARTHAM, NEAR CANTERBURY, KENT COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £192 per annum, with quarters, washing, &c.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £40 per annum, with rooms, board washing, and attendance.

DERBY BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, apartments, laundry, &c.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, all for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Honorary Anæsthetist.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea provided.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten qualified Clinical Assistants.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician and Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Locum Tenens for two months. Salary £4 4s. per week, with board, lodging, washing, &c.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Medical Officer. Salary 25 guineas per annum.

HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £50 per annum, with residence, board, and washing.

INVERNESS DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120 per annum, with board, lodging, and laundry.

KING'S COLLEGE HOSPITAL, London.—Sambrooke Medical Registrar.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and laundry.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

LEWES VICTORIA HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Salary £250 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Two Resident Assistant Medical Officers. Salaries £120 and £100 per annum respectively, with apartments, &c.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary £70 per annum.

MANCHESTER WORKHOUSE HOSPITALS, Withington.—Third Assistant Resident Medical Officer. Salary £100 per annum, with rations, apartments, and attendance.

MELROSE, ROXBURGH DISTRICT ASYLUM.—Assistant Medical Officer. Salary £160 per annum, with board, lodging, and washing.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary in each case at rate of £52 10s. per annum, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

PRESTWICH COUNTY ASYLUM, near Manchester.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL SUSSEX COUNTY HOSPITAL.—Two Assistant House Surgeons, unmarried. Salary in each case £80 per annum, with board, apartments, and laundry.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Dental Surgeon.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Honorary Gynæcologist.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

THROAT HOSPITAL Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry. Also Honorary Assistant Registrar.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with rations, washing, and apartments.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants. Also Three Non-resident Assistant House Surgeons, each for three months.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Dungannon, in the county of Tyrone.

Births, Marriages, and Deaths.

BIRTHS.

DAVIES.—On Sept. 10th, the wife of Langford George Davies, M.A., M.B., B.C. Cantab., of Broad Clyst, Devon, of a son.

MARRIAGES.

BEAUMONT—KING.—On Sept. 16th, at All Saints' Church, Weston-super-Mare, Noel Charles Beaumont, M.R.C.S., L.R.C.P., to Ethel Mary, eldest daughter of Mr. J. J. H. King, of Gordon-road, Weston-super-Mare.

DEATHS.

DILLON.—On Sept. 14th, Thomas Augustine Dillon, F.R.C.S. Irel., L.R.C.P., Assistant Medical Superintendent to the Croydon Infirmary, aged 33 years.

GROGONO.—On Sept. 11th, at Witham Lodge, Romford-road, Stratford, Walter Atkins Grogone, F.R.C.S., aged 62 years.

Notes, Short Comments, and Answers to Correspondents.

AN EPIDEMIC OF SUPERSTITION.

THERE are worse visitations than those of Asiatic cholera or the pestis bubonica, visitations which, provoked by ignorance, superstition, and panic, play into the hands of disease itself by thwarting the measures adopted to combat it—nay, turning with savage vendetta against the sanitary officer and the practitioner, and forcing him, in self-defence, to resort to the lethal weapon—the *dernier ressort* of the individual threatened with loss of life by the "murderer with intent" or the man-eating beast of prey. Once and again the duty-doing medical man in Italy has had to use the revolver to protect himself against the individual or the mob who, under the delusion that he was causing the disease he was in the act of curing, have attempted to do him to death! And this in the twentieth century and in such centres of Italian civilisation as the Roman or the Tuscan Province! From Pisa I learn (writes an Italian correspondent) that in the neighbourhood of the marble quarries of Carrara a local practitioner, called to the bedside of a patient who showed symptoms of cholera, found the conditions such that an injection of caffeine was indicated. He was proceeding to act accordingly when the patient's brother threatened to kill him if he attempted the operation. This menace notwithstanding, the practitioner, seeing his patient in imminent danger of collapse, seized the opportunity of their being alone together and injected the stimulant. But its restorative action proved only temporary, and the patient, in spite of every care, ultimately expired. The brother, on learning that the injection had been practised, made straight for the doctor and shot him dead with one discharge from his revolver. The incident became immediately known throughout the neighbourhood, and the doctor's brother sought out the assassin, and with six shots from his revolver killed him in turn. To such tragedies has the "Third Italy" accustomed us during the epidemic of cholera now happily on the wane. Nothing more lamentable occurred in the successive visitations of the disease in the "sixties," the "seventies," and the "eighties" of last century—so little impression has the Government's system of education made on the populace under its control. In the southern provinces the recent outbreak of the disease provoked the peasantry to excesses described by a local resident as only to be paralleled by the reign of terror during the French revolution—storming the lazzarettos, driving away the *personnel* with threats of assassination, and dragging the patients out of bed when manifestly on the way to recovery or even when convalescent. But such acts as that above reported from Carrara were supposed to be impossible in Tuscany. In Leghorn the peasants refused to comply with the sanitary prescriptions or regulations; they ate whatever they chose; they resisted with violence all attempts to take them to the lazzaretto; and, shutting themselves up in their houses, kept the authorities in the dark as to the cholera-stricken among them. At last the said authorities broke into the houses by force—only to find in one tenement 26 dead bodies, some concealed in a wardrobe, and a child's corpse in a chest of drawers. The mortality is thus difficult to estimate; while of the cases duly reported to the sanitary office it is known that about 100 proved fatal per diem. The disease, as already stated in THE LANCET, affected the seaboard mainly, such cases as occurred inland being few and seldom fatal. With the return of the cooler weather the visitation is everywhere on the wane, and in the opinion of educated and enlightened Italy the next duty of the Government must be, not only to place the hygiene of the harbour towns and the great centres on a more satisfactory footing, but to urge on the provisions (effective enough on paper) for public instruction, and redeem Italy from the more than mediæval ignorance and superstition into which she has been allowed to lapse.

APPENDICITIS AND METAL DISH-CLOTHS.

A "Bluestocking-Housewife" writes:—"I read lately of an 'epidemic' of appendicitis in an institution for boys, which led to searching but fruitless endeavours to discover its origin. I understand also that doctors generally are seeking some domestic cause for the present prevalence of appendicitis. I would offer to their consideration the tinsel dish-cloths now so commonly used to scour the inside of saucepans and other utensils in which food is cooked. Of course, no particles of the scouring substance, be it monkey soap, sand, or metal dish-cloth, are supposed to remain in the saucepan. In theory all are swept out in the subsequent rinsing. In practice I am confident that, with the most thorough servant, such rinsing is neither forcible enough nor lengthy enough to dislodge them all, minute particles will be left in various crevices, such as the groove where bottom and sides of the saucepan meet. But the boiling of the next lot of food in the pot will set up far more searching and prolonged fluid currents; these will effectually sweep

out the tiny sharp bits of metal from their resting places, to mingle them with the food. Surely such metallic particles must be a grave source of danger to the delicate internal membranes of the body? I enclose a specimen of this little cloth."

The dish-cloth forwarded to us proved to be a network of fibre and copper filaments. The device serves as an excellent scourer, but whether it parts with its copper during the process we have not been able to decide. The point raised by our correspondent is of interest, and if there is anything at all in the mechanical theory of the origin of appendicitis the use of such a cloth would be open to suspicion. The scourer is new to us, and we are probably safe in saying that appendicitis was prevalent before this novelty was pressed into the service of cleaning cooking utensils. Copper is, of course, likely to prove an irritant, but we are not aware that the metal has been found in the appendix vermiformis.

THE CROSS-CHANNEL SWIM.

To the Editor of THE LANCET.

SIR,—It having been stated and advertised in the public press that during my Channel swim I partook of various forms of nourishment, I think it only fair to state publicly that my only food consisted of Swiss milk chocolate and a few grapes, and the leg of a chicken.

I am, Sir, yours faithfully,

T. W. BURGESS.

Lorne Cottage, Dover-street, Walmer, Sept. 20th, 1911.

A SAFETY HAT-PIN.

Mrs. Dunn, of Woodfield, Uppingham, Rutland, has invented a new form of safety hat-pin. This consists of two pins used as a pair, and so arranged that the head of one pin protects the point of the other pin, and *vice versâ*. Owing to the fact that the pins are equal in length, it would be difficult to manipulate such an arrangement if the heads were fixed. To overcome this difficulty one or each of the pins forming a pair is provided with a head which is hinged in relation to the pin proper. One of the pins having been inserted in the hat and hair of the wearer in the usual manner, the second pin is then inserted from the opposite direction so that its point enters the head of the first pin, after which the head of the pin last inserted may be moved so that it is thrust on to the point of the first pin. The pin-heads, which are hollow, are filled with cork covered by wire

gauze, which holds the point of the pin firmly. "It is clear, therefore," says the inventor, "that when in position the points of the pins are adequately and thoroughly protected, and further, that they are not likely to be accidentally withdrawn." The pins may be made of any length, and the heads of any suitable material ornamented in any manner desired. The inventor claims that it is only necessary to wear one pair of these pins with a hat, as any ordinary pin may be used if more than two are required, the point of this ordinary pin being passed into the head of one of the special pins. The real dangers to the community from the vicious spear-heads which radiate from the hat of the modern lady need no expatiation. Serious accidents have been chronicled, and many persons must have felt, when riding in omnibuses, for example, that a sudden jolt of the vehicle might cost them the loss of eyesight. The new fastener removes a public peril, and appears to us, while doing so, to leave the wearer in as good a position with regard to her headgear as if she were wearing the usual naked arsenal. The fact that a third pin can be introduced practically at any angle to either of the other two will give the security that two or more parallel pins could not give.

Senex.—The appointments are generally badly paid, and those that are not are difficult to obtain. The candidate should apply to the Pharmaceutical Society, 17, Bloomsbury-square, London, W.C., having just reached the necessary age.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for September and October, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
Sept. 16th–23rd (London, Agricultural Hall).—Nineteenth Annual Grocery Exhibition and Market.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–23rd (Paris).—International Conference of Genetics.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 25th–26th (Munich).—Meeting of the International League for Medical Psychology and Psychotherapy.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th and 29th (Manchester).—Conference of British Hospitals Association.
,, 28th–30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
,, 2nd–4th (Frankfurt-a-Main).—Fifth Annual Meeting of the Society of German Neurologists.
,, 2nd–5th (Turin).—International Congress of Pathology.
,, 2nd–6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
,, 2nd–7th (Dresden).—Third International Housing Congress.
,, 2nd–7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
,, 3rd–5th (Turin).—Ninth National Congress of Medici Condotti.
,, 3rd–6th (London).—Dairy Show.
,, 5th–7th (Paris).—Fifteenth Meeting of the French Association of Urology.
,, 6th and 7th (Paris).—French Association of Pediatrics.
,, 9th–12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
,, 9th–13th (Cologne).—Seventh International Congress of Criminal Anthropology.
,, 10th (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
,, 12th–18th (Rome).—Fifth Annual Meeting of the Italian Society for the Advancement of Science.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin).
TUESDAY.—4 P.M., Dr. N. Pitt: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. E. R. Carling: Clinique (Surgical).
THURSDAY.—4 P.M., Dr. F. J. Poynton: Clinique (Medical).
FRIDAY.—4 P.M., Dr. W. H. Kelson: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Bishop Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.
TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.
THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.
FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.). Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 20th, 1911.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 14	30·07	E.	0·43	100	64	57	56	59	Cloudy
,, 15	30·14	N.E.	...	110	62	48	51	54	Fine
,, 16	30 27	N.E.	...	112	63	48	51	54	Fine
,, 17	30 27	N.	...	91	62	46	50	52	Fine
,, 18	30·34	N.W.	...	109	68	46	50	52	Fine
,, 19	30 09	W.	...	107	69	49	52	55	Fine
,, 20	29·50	S.	0·13	101	66	55	60	63	Cloudy

The following journals, magazines &c., have been received:—Symons's Meteorological Magazine, Archiv für Experimentelle Pathologie und Pharmakologie, Report of the Bombay Medical Union, Cleveland Medical Journal, American Journal of Surgery, L'Hygiène, Prince Albert Hospital Gazette, Nordiskt Medicinskt Arkiv, Bulletin de l'Association Française pour l'Étude du Cancer, Philippine Journal of Science, British Journal of Dental Science, Gazette Médicale d'Orient, Pacific Medical Journal, American Journal of Obstetrics, Anti-Vivisection Review, South African Medical Record, Revue de Médecine, Revue de Chirurgie, Birmingham Medical Review, Revue de Gynécologie et de Chirurgie Abdominale, Heart, Interstate Medical Journal, Canadian Practitioner and Review, The Herb Doctor, Peru To-day, New Zealand Medical Journal, Yellow Fever Bureau Bulletin, and Australian Medical Journal.

Communications, Letters, &c., have been received from—

A.—Mr. W. F. Allen, Lond.; Messrs. Allen and Hanburys, Lond.; A. R. G.; Dr. George Adkins, Exeter; Automobile Association, Lond.; Apollinaris Co., Lond.; Messrs. Arnold and Sons, Lond.; Mr. R. J. Albery, Lond.; Dr. H. Russell Andrews, Lond.

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D.—Dr. J. L. Dickie, Cromer; Derbyshire Royal Infirmary, Derby, Secretary of; Messrs. Dyson and Wilkinson, Colwyn Bay; Dr. Haldin Davis, Lond.; D. G. D., Vichy; Dr. H. B. Day, Lond.; Mr. D. J. Duhig, Hornchurch.

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A Presidential Address

ON

THE POSSIBLE TOXIC ORIGIN OF SOME KINDS OF INSANITY.

Delivered in the Section of Neurology and Psychological Medicine of the British Medical Association,

BY EDWIN GOODALL, M.D., B.S. LOND., F.R.C.P. LOND.,

MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

GENTLEMEN,—It is well known that mental disorder can be produced by intoxicants (alcohol, cocaine, haschisch). It also occurs in connexion with such diseases as influenza, erysipelas, pneumonia, typhoid fever. When so occurring it cannot be always explained as due to fever or exhaustion, since it comes on in the pre-pyrexial stage (as in typhoid, variola), or the apyrexial stage (as in malaria). In these cases the mental disorder must be ascribed to a toxin.

The clinical and anatomico-pathological descriptions of various writers (Martin and Ringenbach, Franca and Anthias Spielberger, Mott, and others) show a considerable resemblance between the symptoms due to the trypanosome-toxin and those present in paralytic dementia, and some resemblance in the cerebral lesions. With sleeping sickness there is more fever. No remissions occur, I believe, in this disease, in striking contrast to general paralysis; on the other hand, I believe there is a lymphocytosis in it. As to the occurrence of the same in paralytic dementia, *vide infra*. That acute delirious mania, acute hallucinatory and confusional states are due to toxæmia is freely assumed, but has not been demonstrated.

BACTERIOLOGICAL WORK IN INSANITY.

Most of the observations as regards micro-organisms in the circulation in mental diseases are isolated and unsystematic. Most of the cases I have personally examined gave negative results, but I have found diphtheroids and cocci in general paralysis, acute delirious mania, and acute mania and melancholia. In these cases there was no known source of secondary infection. The organisms found in the blood and cerebro-spinal fluids by various workers are bacilli, including diphtheroids and B. coli, diplococci, short chains of streptococci. Acute delirious mania has been specially investigated, and by Italian workers (Rasori, Ceni, Bianchi, Piccinino). Workers in this country on the subject of the circulation of micro-organisms include Lewis Bruce, Ford Robertson, McRae and Jeffrey, Candler, Marr, Muirhead; in America, Gay and Southard. The three last-named writers have published the most systemetic work I am acquainted with.

Summarising the work of the past 20 years I should affirm that there are no adequate grounds for believing that the organisms which have been found in the tissues in any case of insanity play more than a secondary rôle. At the same time, they frequently cause death. (We fall victims, it has been said, most often to our secondary infections.) Though not shown to be of prime pathological significance, they may yet be shown to be the cause of some of the symptoms. Much more work is required in this field, and better methods of cultivation of organisms are needed.

Apart from the demonstration of diphtheroids in association with inflammatory changes in the mucosa of the digestive and respiratory tracts in general paralysis (Ford Robertson), it has not been shown that there is a local source of infection in the mucous tracts or elsewhere, such as occurs in diphtheria and tetanus, in any of the insanities. It is a pure assumption that catarrhal enteritis provides such a local source (as described by Pardo). We do not know how the mental symptoms, which are undoubtedly due to disorder of the digestive functions, with its attendant constipation, which disorder occurs in recent insanity and in exacerbations of chronic insanity, are produced. Still more marked digestive disturbance, with prodigious constipation, and symptoms of auto-intoxication, occurs in cases of intestinal stasis prior to relief by short-circuiting, and yet without mental disorder (the *irritabile* is wanting). That there is disordered action of the digestive juices, and also impaired peristalsis in some mental disorders, has been proved by Pardo and Benigni, and can be shown by adequate physico-chemical examination of the stools in these cases.

We are not yet justified in saying, as certain Italian writers, more especially, do, that the presence of indigo in the urine is evidence of toxæmia of intestinal origin, much less in attempting to correlate its presence with symptoms of insanity. We cannot yet estimate the indigo quantitatively; hence no normal standard exists.[1] Various medical books tell us that the substance in the urine which on oxidation gives indigo is indoxyl-sulphate of potassium, the precursor of which, "indigogen," is indol, which, again, is produced from tryptophane by the action of intestinal bacteria; that the "abundant presence" of indigo testifies to the activity of protein putrefaction. This naturally affords the basis for an attractive theory of auto-toxæmia in some kinds of insanity. But how can a thing be said to be "abundantly present" which cannot be quantitatively estimated? And I believe we must be candid and admit that we do not fully know what the precursors of indigo are, whether they are all derived from the intestinal contents or not.

As regards the bacteriology of the fæces in mental disorders, I am not aware of any work other than that of the Italian observer, Pardo. The following is a mere summary of work yet to be published, carried on by Mr. E. Barton White and myself at the Cardiff Mental Hospital during the past two years. One gramme of fæces from cases of acute mania and melancholia was examined in each instance, using decimal dilutions of an original solution of 1 in 100; as a control, the results with normal stool obtained by Dr. A. C. Houston of the Local Government Board were used. Cases examined, 23; total bacteria increased in 39 per cent., diminished in 26 per cent.; B. coli increased or diminished to like extent, whether as typical or atypical forms requires further investigation; the anaerobe, B. enteritidis sporogenes (? B. welchii in some cases), diminished in all but one case (in which the amount was normal), often greatly diminished; B. putrificus not found; spores of aerobic bacteria diminished in 76 per cent., in none increased; colonies isolated on agar-fuchsin made up practically of B. coli, typical in 80 per cent. of cases; the micro-organisms found were, with a few possible exceptions, those of normal stools; agglutination of B. coli very rare, and when present equal with homologous and heterologous serum. (These results agree with those obtained in 82 cases of acute mania and melancholia by Dr. Alice Johnson and myself.[2])

As far as evidence based upon formation of agglutinins goes, B. coli is neither in circulation nor responsible for any toxin which may be. But evidence based upon complement-fixation and the opsonic index is also required. Streptococci: 13 cases examined; increased in 7, diminished or absent in 4, in normal amount in 2. Our work lends no support to the statement of Pardo that the putrefactive anaerobes are increased at the expense of B. coli and B. aërogenes, the normally preponderant organisms; nor to the statement that streptococci preponderate. It is evident that much work has yet to be done in the bacteriology of stool in the acute insanities, to say nothing of physico-chemical research.

Let it be noted that Metchnikoff and his pupils have shown[3] that the three chief putrefactive anaerobes found in the human intestine produce toxins which are absorbed by the mucosa of the large intestine.

Work on the opsonic index in insanity has been done by Shaw and by Babington, who show that the index is lowered, in the acute insanities especially, to such common organisms as B. coli, staphylococcus aureus, streptococcus fæcalis, B. tuberculosis. Baccelli and Terni find a raised index in epilepsy, a normal one in dementia præcox. A greater liability to secondary infections is perhaps all this implies, such as we see in other conditions of lowered resistance—for example, diabetes, chronic nephritis.

Although there is clinical evidence of toxæmia in the so-called "intoxication-psychoses," with the exception of acute delirious mania it cannot be maintained that there is evidence comparable with that furnished by a case of pneumonia or one of the common infectious fevers. The

[1] Stanford: Journal of Mental Science, April, 1911.
[2] Brit. Med. Jour., April 9th, 1904.
[3] Annales de l'Institut Pasteur, 1908, tome xxii.

hypothetical toxin in the former instances must be of a lesser degree of virulence. Hence disordered metabolism is postulated as the cause of insanity, by way of auto-intoxication.

LEUCOCYTOSIS IN MENTAL DISORDERS.

The outstanding pathological fact which indicates a toxic pathogenesis for some of the psychoses is leucocytosis. The condition is found very commonly in acute and recent mental disorder, and in states of exacerbation during chronic insanity. The most recent workers in this field are Dide and Chenais, Klippel and Lefas, Lepine and Popoff in France; Lewis Bruce, C. MacDowall in this country; Heilemann in Germany; Graziani in Italy. I believe the following statements are justified by much personal study of this question for the past three years and by the work of these investigators. The total leucocyte count is increased in varying amounts from 11,000 to 30,000 per cubic millimetre in acute and recent mania and melancholia (senility excluded), and in the periodic exacerbations of chronic cases of the same. Should the count fall in the course of the disease it rises again to rather above normal towards the close of the attack in cases which recover, and remains fairly high on recovery. In acute mania and melancholia the percentage proportion of the neutrophile cells is increased in the early phases of the disease, also towards the close of the attack when recovery is to take place. In these disorders a low total count and a fall in the normal percentage of neutrophiles, if maintained, are of bad augury, and point to the onset of dementia. As regards dementia præcox, in the active phase there is some, but no considerable increase in the total number of leucocytes; neutrophiles are diminished, and lymphocytes, mononuclears, and eosinophiles increased. Cases of systematised delusional insanity do not exhibit leucocytosis.

As a generalisation, in the acute and recent mental disorders there is leucocytosis with percentage increase of the polynuclear cells; in the subacute and chronic ones there is little or none, and the proportion of large mononuclears and lymphocytes is increased. In acute mental disorders absence of leucocytosis and a fall in the percentage-proportion of polymorphs go with deficient reaction, and are an unfavourable indication, as is the case in those infectious fevers in which leucocytosis is observed. This, from the standpoint of toxæmia, is significant.

In regard to paralytic dementia, in the first period, while still the patient is well nourished and active there is leucocytosis with proportional increase of neutrophiles; in the succeeding periods lymphocytes and mononuclears are increased at their expense, but it is to be noted that, even in these, exacerbations are accompanied by a rise in the neutrophile count. In six cases of well-marked remission recently examined by me the lymphocytes, transitional cells, and mononuclears (especially the last two varieties) were notably increased at the expense of neutrophiles. (Incidentally, three showed eosinophilia.) My friend, Dr. H. A. Schölberg, pathologist, of Cardiff, reminds me that in protozoal maladies (sleeping sickness, syphilis, malaria) the reaction of the white cells towards infection is by lymphocytosis, not leucocytosis. If further experience shows that there is the same reaction in general paralysis a point of great significance will have been made out. The Wassermann test shows that in general paralysis we have a disease which is syphilitic *au fond;* its essential cause becomes, I think, again operative under privation and stress; further evidence of this may be found in the mode of reaction of the white cells (lymphocytosis). We should then look upon the polymorphonuclear increase as merely a reaction to a secondary infection, such as would cause acute phases and exacerbations in the malady. If this line of reasoning prove correct an explanation would be available for the favourable results reported by von Wagner and Pilcz, of Vienna, who prolong remissions and ameliorate the disease by injections of tuberculin, for by this means lymphocytosis is promoted. There is no mention of the state of the white-cell count in the papers by Pilcz which I have consulted.

We have still no safe and reliable means of bringing about recovery in mental disorders, such as is seen in connexion with intercurrent disease (for example, pneumonia, erysipelas, cellulitis), in association with fever and hyperleucocytosis. Turpentine, yeast, cinnamate of soda, sodium nucleinate (introduced by Donath of Budapest and Fischer of Prague), all are unsatisfactory. The "reaction" is not pronounced enough, nor does it last long enough. Some of us are seeking to elaborate other methods, of which it is too soon to speak.

OBSERVATIONS ON METABOLISM.

In conclusion, the following few observations on mental disturbances in autotoxæmia. Such, amounting to insanity in predisposed persons, occur in various maladies in which the nutrition is impaired, or in which metabolism and depuration are altered or hindered. Thus, in diseases of the heart, kidneys, liver; in rheumatism, gout, or chlorosis; in diabetes. We know that the like mental disturbances are found with Graves's disease, myxœdema, Addison's disease (ductless gland diseases). In the hypothyroidism of myxœdema Magnus Levy shows experimentally definite deviation from normal metabolism, removed by administration of thyroid. As the symptoms (including the mental ones) disappear or are greatly mitigated by such means, there is reason for the view that metabolic disorder accounts for the mental disturbances in this disease, and if in this, then also, it may be, in other ductless gland diseases. When, however, it comes to administering thyroid or pituitary gland in kinds of insanity in which there is no ground for supposing the action of these glands to be deficient, in order, as the jargon goes, "to promote metabolism," we are empirics indeed; yet, like empirics, we sometimes do good in this way. Is there any record of the metabolism in these cases before, during, and after treatment?

Some sporadic work in metabolism in the insanities has been done: thus, in dementia præcox (Pighini); in epilepsy and general paralysis (Kauffmann)—work in need of confirmation. For systematic work we have, I believe, still to refer to Folin (Maclean Hospital, Massachusetts), whose observations were concerned with the urine, and amount to this: that unusual fluctuation in the urinary constituents occurs in general paralysis, which strongly suggests that this may be at one stage or another associated with disordered metabolism; as regards other mental disorders, individual peculiarities indicating abnormal metabolism are frequent, but no characteristic metabolism corresponding with a particular disorder has as yet been found. I may further mention researches upon the excretion of creatinine in the insane conducted by Mr. MacKenzie Wallis and myself, and subsequently by the former at Cardiff Mental Hospital. These, and especially the last-mentioned research of Mr. Wallis, show that the excretion of creatinine, which in normal persons is practically constant for the individual from day to day, and independent of diet, varies from day to day in several kinds of insanity and is subnormal (as is also the coefficient, creatinine-bodyweight). This variation has so far been found only in mental cases. These researches point to altered muscle-cell metabolism in the insane, and indicate by a special instance the need for further inquiry into questions of metabolism in mental disorders—the need, in other words, of the physiologist and the chemist in mental hospitals.

THE SURGICAL TREATMENT OF SOME FORMS OF EPILEPSY.

BY WILLIAM ALEXANDER, M.D.R.U.I., F.R.C.S. ENG.,

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Introductory Remarks.

IT is now fairly well agreed upon that the seat of idiopathic epilepsy is in the grey matter that covers the convolutions of the cerebrum and that the "fault" lies in some way in the cortical brain cells of this region. Many generations of observers have closely scrutinised the cortex of the brain, yet in spite of the much greater delicacy of our instruments and of improved technique, we seem to be as far as ever from the discovery of any definite change in the nerve cells likely to be associated in causal relations with epilepsy. As the results of experiment and of disease alike point to this region and to the cortical cells, we can only conjecture what the changes in the nerve cells may be.

Hughlings Jackson assumes an unstable condition of the

nerve cells through which a liberation of nerve force takes place either spontaneously or under the influence of causes that are insufficient to liberate the nerve force of healthy cells, and hence the discharges of the cortical cells in epilepsy are irregular, premature, and objectless, the very opposite qualities to those which characterise healthy discharges of nerve force. Hughlings Jackson, also in illustration of his theory, speculates that the unstable grey matter of disease is of the same constitution as the comparatively stable grey matter of health, but of a different composition; and a further speculation is that the phosphorus ingredient is replaced by its congener nitrogen, and that the nervous matter is more nitrogenised and therefore more explosive.

Broadbent thought it must be assumed in ordinary epilepsy that the nutrition of the grey substance is modified so as either to give rise to excessive production of a normal explosive matter, or to the formation of a more deteriorated and more unstable variety. The grey matter forming the cerebral cortex is intellectual, receiving centripetal impulses, dealing with them and transmitting the information so received into efferent impulses. In epilepsy it is also supposed that cortical nerve cells may spontaneously produce motor discharges without sensory influence, or may produce irregular discharges at the stimulation of sensory afferent influences of a slight character, such as intestinal influences, mental worries, memories, &c.

Gowers thinks epilepsy to be due to an abnormal state of chemical nutrition whereby the molecules are more easily detached and their atoms yield with undue facility to the attractions of the adjacent oxygen. Haig assumes an alkaline tide during the night and early morning, when uric acid is supposed to circulate freely in the blood and to produce migraine, mental disease, and epilepsy.

A. E. Russell suggests that failure of the cerebral circulation has something to do with the production of epilepsy. Peripheral irritation, such as dentition, injuries of nerves, intestinal irritation produced by unsuitable or excessive diet, worms, constipation, menstruation, are dwelt upon as sufficient causes by other observers. These peripheral irritations, as far as we know, are not greater than similar irritations that occur in normal non-epileptic individuals, and hence an unstable nervous system has to be assumed; and such a theory when followed up resolves itself really into that of the Jacksonian unstable cortical cell theory. These are all theories that explain the phenomena to a certain extent, but do not lead to any practical issue, or when put to the proof do not help towards the relief of the patient.

What is the cause of the instability of the cortical cells is the next question that naturally arises. Is it hereditary or is it acquired? If it is hereditary, in Dr. John Turner's sense "of an inherently defective nervous system from an hereditary vicious organisation," then the outlook is hopeless for the individual epileptic, and our only remedy is eugenics and the limitation of the class. But no one, even the most extreme advocate of heredity, can find distinct evidence of ancestral disease in more than 40 to 50 per cent. of epileptics, and we continually meet with cases where traumatism plays an undeniably prominent part in the production of the disease, and where no heredity has existed within the remotest periods of time available for inquiry. Heredity probably means no more in epilepsy than it does in tubercular phthisis—viz., a deficiency of resistance to the particular agency by which the disease is produced. Should the agent be absent the individual does not become an epileptic, but the presence of the agent connotes epilepsy. In perfectly normal individuals, as far as anyone can say, a sufficiently powerful agent may produce the disease. Most epileptologists and surgeons have met cases where healthy well-balanced men or boys have become subject to epilepsy through traumatism, and the nervousness that often characterises the traumatic epileptic is the result of the disease instead of a predisposing cause. A change has taken place in the brain cells in such cases so slight and so obscure as to elude detection by our most expert methods of examination, and the subtle change may persist during a lifetime or may disappear after a few epileptic manifestations. The question arises in my mind whether we are not aiming too high in trying to find out the minute change or changes in the cortical cell that induce epilepsy. Such a change may be largely psychical and its detection may for ever be beyond our powers, just as the question, What is life? is still unanswerable. We know what life does and we know something about circumstances that will influence or destroy life, and a study of such causes is well worth while, although a comprehension of the mystery of life will probably never be attainable by mortal man. So it is with electricity; so it may be with epilepsy. In this way it seems to me that observations of the phenomena of epilepsy in the post-mortem room and in the operating theatre have suffered. Obvious naked-eye lesions have been ignored or passed over in a sentence as of no moment, and nerve cells have been stained, magnified, and scanned for changes. If any minute changes could be found constant in epilepsy, and peculiar to that disease, it would probably not advance either the welfare of the sufferers or our knowledge of the causes and nature of the disease in the smallest degree.

Importance and Prevalence of Œdema of Pia-arachnoid in Epilepsy.

About ten years ago, while exploring the brain in cases of focal epilepsy where no gross lesion was found, I was struck by the constant presence of œdema beneath or in the pia-arachnoid. This œdema was flocculent and hazy in appearance, sometimes completely concealing the contour of the cerebral convolutions, at other times only rendering it dim. On pricking the arachnoid the fluid ran out clear and pellucid or sometimes spurted out as if under tension. On collection and examination it answered all the tests of cerebro-spinal fluid. I began to look for it in necropsies on epileptics, but did not find it there so frequently or so distinctly, although in some cases of status epilepticus it was very manifest, as in the following case. The patient, a woman aged 45, who had been an epileptic for 20 years, suffering from both *grand mal* and *petit mal*, and died in "status" of 48 hours' duration, showed a marked layer of œdema over the motor area on both sides of the encephalon. There was very little over the frontal lobes. The occipital lobes and the base were quite free from fluid. Knowing now where to look for it I can see traces of it generally in all post-mortem examinations. It is, however, on the operating table that it obtrudes itself upon our notice, and I now look for it in all my operations in epilepsy and find it as a matter of course. I have demonstrated it for the past ten years to many students, house surgeons, and medical visitors, so that there is no doubt of its existence. The condition found in each case has been described sometimes by myself, sometimes by my house surgeon or dresser in the clinical notes, some extracts from which in regard to the presence of fluid may here be given.

Extracts taken Verbatim from Notes of 20 Successive Cases of Epilepsy where the Brain was Exposed by Trephining and which show the Presence of Œdema of the Pia-arachnoid in every Case.

1. F. S., aged 10, an epileptic since one year old; attacks daily, one or more; aura, twitching in right hand; operation; no gross lesion found, but a dense layer of grey flocculent fluid covered the left motor area and concealed the convolutions. A thin membrane covered the fluid. The membrane was readily removed by traction with the forceps, and the fluid ran away in a considerable quantity, after which the convolutions could be distinctly seen.
2. J. W., aged 7, a congenital epileptic with daily attacks; right aura. The motor area of the left hemisphere was found to be very œdematous and bulged through the fenestration made in the dura mater. In subsequent cases the notes regarding the œdema only will be given.
3. "There was considerable œdema on each side of the vessels, especially posteriorly."
4. "Some fluid escaped."
5. "Brain looked pale and œdematous as seen through the fluid which escaped and was caught for examination."
6. "When dura opened, meninges found in the usual œdematous condition."
7. "Large amount of clear fluid found and came away."
8. "The dura was incised and the fluid ran out in considerable quantity."
9. "When the tense dura mater was opened a large quantity of clear fluid was evacuated, leaving brain quite clear."
10. "The brain below looked congested and œdematous."
11. "Membranes very œdematous; a large quantity of clear fluid came away."
12. "There was a large quantity of fluid along the vessels, slightly turbid and coming away freely."
13. "Usual œdema found on surface of brain."
14. "Trephined on left side. œdema on surface of convolutions."
15. "Dura mater fenestrated; contained much fluid beneath membranes."
16. "Usual œdema found on surface of brain."
17. "There was a great deal of fluid along the vessels, slightly turbid oozing away freely when the membrane was opened."
18. "Arachnoid contained clear fluid and was rather œdematous."
19. "Brain surface very œdematous."
20. "Surface of brain œdematous and somewhat hæmorrhagic."

Extracts Corroborating the Prevalence of Œdema of the Pia-Arachnoid in Epilepsy by Other Observers.

It would seem strange if this phenomenon of œdema had not been noticed before, and a perusal of the medical journals for some years shows that it has been observed again and again. Dr. John Turner writes about "the abundant foam-like exudate as a feature constantly present in epilepsy." It is found, he says, in small quantities in other diseases, notably general paralysis of the insane, a disease occasionally, if not frequently, accompanied by epileptic seizures. Dr. Bendandi, Bologna, opened the skull of a traumatic epileptic; a tablespoonful of colourless fluid was found on the surface of the brain (localised œdema). Dr. Lees and Mr. Page describe the milky arachnoid in a case of epilepsy and a large excess of subarachnoid fluid.

Dr. H. Muir Evans of Lowestoft, in describing a case of trephining for focal epilepsy, says, "When dura mater incised crucially a large amount of cerebro-spinal fluid escaped, and the arachnoid looked as if a mucous polypus was flattened on the surface of the brain." Dr. A. E. Morison, in operating upon a traumatic epileptic, says, "Arachnoid bulged and was excised, when 2 ounces of straw-coloured fluid pent up in a localised space escaped." In a second case blood was effused beneath the arachnoid. Sir Henry Butlin trephined in a case of traumatic epilepsy and found a small clot of blood in the subarachnoid space, and beneath there were two to three drachms of fluid. Dr. F. T. Heuston of Dublin refers to the increase of cerebral fluid in a case in which he trephined and where there were traumatic epilepsy, aphasia, and paralysis. Sir Thomas Oliver trephined on the right side. Several teaspoonfuls of serum with flakes of lymph escaped, the dressings being soaked at the first dressing.

Dr. Spratling, in his work on epilepsy (p. 315), says the pia mater presents frequent changes in epilepsy, but none which are constant and characteristic. Of these the most frequent is a certain amount of œdema and congestion of the pia, the latter being a sequence of the vascular engorgement incident to the fit; a certain amount of œdema is quite common, and is especially pronounced in old epileptics and insane epileptics, and is often associated with more or less brain wasting and incidental increase in the cerebro-spinal fluid. In his directions for operations Dr. Spratling says that at times the pia may be so œdematous as to obscure the outlines of the convolutions. In such cases it will be necessary to "incise the pia to allow of the escape of the fluids."

Extent and Character of the Fluid Found.

The evidence of the frequent if not constant presence of this fluid over the motor area in epilepsy is therefore very strong. The extent of the area involved is not so certain. My operations have always been directed to the focus indicated by the unilateral spasms, which I made the centre of a large opening over all the suspected motor area, and there the œdema was always present. What was the condition of the other parts of the brain in these cases I cannot say, as it is only in necropsies that the whole brain is uncovered, and in necropsies the fluid is not so much in evidence, but in the case of status already described it was found over the motor areas of both sides of the brain and scarcely at all anywhere else. The convulsions were general in this case. The fluid is clear, sterile, milky, or frothy in appearance, and contains small particles of lymph that cause the fluid to appear like thin barley-water. The brain has a glossy look as seen through the fluid, and when the layer of fluid is deep the convolutions beneath are concealed. The fluid runs away quite clear, the small particles of lymph remaining *in situ*. Sometimes large quantities of fluid drain away after operation. Bacteriological examinations fail to show any organisms, and chemically the fluid is pure cerebro-spinal fluid. The membranes of the brain are not generally thickened or altered from their normal appearance.

Circumstances and Experiences Connecting this Œdema with Epilepsy as a Probable Cause.

What connexion has this pia-arachnoid œdema with epilepsy? Probably the great majority of observers would have said none, and most likely many other observers have noticed it, but not thinking it of any importance have not reported it, or have come to the conclusion, like Dr. Spratling, that it is a result of the fits. When it caught my attention about ten years ago during an exploration for so-called focal epilepsy there were several circumstances that forced me to consider it very closely. Amongst these was, first and foremost, that eclampsia, a disease characterised by œdema all over the body, has epileptiform convulsions as one of its main characteristics. Secondly, the frequency with which scarlet fever is followed by epilepsy, a disease in which dropsy is not uncommon. Thirdly, the sudden and mysterious onset of œdema of the lungs in epilepsy, as proved by both clinical and pathological evidence. This œdema of the lungs is also found in eclampsia, and is no doubt a part of the circulatory changes that produce the cerebral œdema. Fourthly, the great benefit in many cases of trephining, especially those cases where a considerable area of the calvarium had been removed and where possibly an equilibration of tension was the secret of the relief obtained. I say advisedly *equilibration of tension* because I have strong reason to believe that a decrease of tension rather than an increase may be the cause of the œdema.

Experimental and Clinical Evidence to Show that Œdema may Cause Convulsions.

We have not much reliable experimental evidence to bring forward, but we find that Flourens wounded the dura mater in young pigeons and showed that the convulsions were produced by the extravasation of blood and were relieved by opening the cranium. Leyden drove albuminous fluid into the cranial cavity of a lightly morphiamosed dog when cries, convulsions, and irregular respiration occurred.

I will briefly relate several experiments that Nature may be said to have performed for me lately and which strongly corroborate and support my ideas—formed upon the results of operations and post-mortem examinations—as to the causative functions of œdema in connexion with epilepsy.

CASE 1.—A man, aged 35. Admitted to hospital May 17th, 1910. The previous day he had been driving a cart which came into collision with a tramcar. He was thrown out of his cart, and sustained bruises on both sides of his head. The patient was at first dazed and unable to speak. He had been more or less of an invalid for years, suffering from epistaxis and occasionally hæmoptysis, phthisis, and had a severe cough on admission. For the three days after admission he gradually became more unconscious until the 20th, when he was noticed to have attacks of twitching on the right side of the face and limbs. The first attack occurred at 1.30 P.M. and lasted three seconds. The next occurred 20 minutes later, and from that until the operation the attacks occurred every 20 to 30 minutes till 6 P.M., when they became more severe and more frequent. I diagnosed a collection of fluid over the left motor area, and on May 17th removed a rhomboidal piece of bone (3 × 2 in.) that exposed the dura mater over the central zone of the whole motor area. On fenestrating the dura mater a large quantity of blood-stained fluid was found both beneath and above the arachnoid, and the convolutions beneath were deeply stained red. The fluid was allowed to flow away. The bone was not replaced, and the skin flap was laid down over the fenestrated dura mater, a thin curved glass drainage-tube being inserted at the back of the wound and passed between flap and dura. The wound was then stitched up, not a single ligature being required. A large dressing of sterilised gauze and wool was applied and kept in place by a capeline bandage. Immediately after operation, and during the night, patient had nine fits. There were no fits on the 21st nor during the remainder of his convalescence. The dressings became saturated with fluid, and were covered with fresh layers of gauze and wool. The patient was rather restless in the evening. The temperature went up to 103° F. Some morphia was given. May 22nd: Temperature 100° in morning, wound dressed, drainage-tube removed, dressings saturated, no more twitchings, but restless and tried to pull dressings off. 23rd: He began to speak, and said "Yes." From this time till his discharge his speech gradually came back. The wound healed by the first intention, and he was finally discharged on August 1st, 1910. The state of his chest detained him in hospital long after he was well of the head injury, and gave us ample time to watch the return of his speech and the complete and rapid disappearance of his attacks. The only thing we had done was to drain away the fluid that we found over the motor area and to leave openings by which fresh fluid could drain into the surrounding tissues.

CASE 2.—A man, aged 50, was admitted to hospital on Oct. 1st, 1910, and reported to me as having had an injury on the left side of the head. When admitted he had aphasia and gradually increasing unconsciousness; epileptiform attacks were frequent. Mouth twitched to right side and right arm stiff and rigid. Late in the evening of the day of admission he was trephined over the left motor area. The skin over the left parietal eminence was much bruised, but the bone beneath was not injured. On removing a rhomboidal area as in the last case and fenestrating the dura mater we found a considerable flocculent œdema, not blood-stained, that entirely concealed the brain beneath. It looked like the condition of an epileptic. The pia-arachnoid was punctured, the fluid evacuated, the flap closed as before, and a similar drainage-tube was also inserted. Next morning the patient was quite conscious, the aphasia had disappeared, and the temperature was normal. I was puzzled by this case, especially in regard to the fluid being flocculent and not blood-stained, until I found that the patient was an old epileptic, and that probably the blow that he had received had increased the amount of fluid that already was in excess, and hence the acute and grave symptoms that he presented after admission. The case illustrates the rapid beneficial effect of removing the fluid and the cessation of the localised twitchings that were almost continuous just before the operation.

CASE 3.—My next case is one of *puerperal eclampsia*. The patient, aged 35, was confined ten days before her admission on Sept. 11th, 1910. Ever since her confinement she had incessant headaches, and the day before admission she had ten severe fits, as a result of which she was completely unconscious and cyanosed. In spite of remedies she remained in a hopeless condition. On the 12th, as the fits were distinctly right-sided and, as a last resource, I trephined over the left motor area and found such an amount of œdema and turgescence of the veins as I had never witnessed before. The pia-arachnoid was punctured, much fluid came away, and the wound was drained and closed in the usual way. A few hours after she seemed to be rather more conscious, but her pulse was extremely feeble, and her condition still very hopeless. She died 12 hours after operation from coma and exhaustion. The temperature had risen to 104·4° F., *but no fits and no twitchings had taken place after the operation*. A necropsy showed the operation wound and brain quite aseptic; minute, sometimes confluent, hæmorrhages had taken place into the convolutions of both the right and left sides of the brain over the motor areas, on the left side more especially.

These three cases are given to show the effect of simple removal of the fluid. In each case nothing was done but remove the fluid, and in them all the twitchings stopped almost at once and did not return. The other symptoms also disappeared in the first two cases, but in the eclamptic the hæmorrhage into the substance of the brain was too extensive to permit of recovery. I only mention the last case to show that even there the twitchings were probably the result of the fluid rather than of the hæmorrhage into the brain.

Efforts to Relieve the Disease Founded upon the Foregoing Considerations.

We have endeavoured to relieve our patients by the removal of the œdema, and in order to do this we have, in the first place, to diagnose the seat of the œdema by means of the aura in cases where it occurs. Where it is a distinct and fairly constant phenomenon we cut down upon that area of the brain, fenestrate the dura mater, and so open the pia arachnoid. The bone is not replaced, but the skin flap lies over the fenestrated dura, and thus a free communication is made between the general peripheral circulation and the cerebral cortical circulation. A safety-valve action is thus afforded the enclosed cerebral circulation and tension is equilibrated and the œdema can drain away as soon as it is formed.

There are many theories to explain the benefits of the operations, but I do not intend to dwell upon them here, knowing how fragile most theories are to lean upon. What we depend on are the facts, showing what benefits epileptics have derived from such operations and what disadvantages, if any, have resulted from the same.

The operation, which is named "*fenestration of the dura mater*," consists of a definite procedure not to be confounded with any other procedure that we have ever heard of. It is not merely trephining, although we have to trephine to reach the cerebral cortex, and some writers and surgeons have confounded fenestration with trephining, and talked as if we were performing an old operation that no longer interests the medical world. In a few cases trephining and removal of large areas of skull have been followed by much success, and we have published one or two good examples that are scattered through different journals, but they are unique cases, and that operation cannot be considered as a successful routine treatment for epilepsy. Then we have trephining, removal of part of the calvarium, opening of dura and exploring for tumour, diseased convolutions, spicules of bone, removal of such lesions when found, and replacement of dura and bone and complete closure of the wounds, &c.

In "fenestration of the dura mater" we do not operate with such intentions. We do not *expect* to find any such lesions, but should any exist we treat them, but only very exceptionally do we find any. We operate to find œdema of the pia-arachnoid, and we presume a condition of malnutrition of the grey matter of the cortex produced by the œdema sufficient to keep up the epileptic phenomena, and by draining this area we hope to improve the nutrition of the deranged cortical cells and diminish the number of attacks, improving the prospects of the cure of the patient. This is what we mean by fenestration of the dura mater, and to apply the general term of trephining to such an operation is misleading.

The operation was "led up to" by the ordinary trephining or exploratory operations. In these my custom was to stitch up the dura in deference to the general practice, but I found at times and for various reasons that it was impossible to stitch up the dura completely and fenestrations were accidentally left and that these not only did not interfere with the surgical success of the case, but even sometimes coincided with a greater therapeutic success than in the cases I was able to stitch up to my satisfaction. Hence, when the idea came to me of making the fenestrations the important part of the operation, I was not taking a leap in the dark, but was quite assured by previous operative experience not only of the safety of the procedure but of its probable beneficial effects. The following is a description of the operation performed by me for several years.

Description of Operation of "Fenestration."

The scalp is shaved two days before operation, thoroughly washed and scrubbed with ethereal soap and ether, and a lotion of hydrarg. perchloride 1 in 1000 is applied for 24 hours. Then a similar process is carried out, the perchloride being applied for another 24 hours. On the operation table the head is surrounded with aseptic towels and all essential aseptic precautions are taken to render the operation a success. A large flap of the hairy scalp containing all structures down to the bone is thrown over the ear, which is protected by a sterilised towel. This exposes the skull from the frontal to the occipital bone and from below the middle line to the temporal muscle. The bleeding from both sides of the incision is quickly stopped by the application of Thornton's transverse bladed forceps. The skull is now cleared of periosteum above the parietal eminence and two trephine holes made, one in the front part and one in the back part of the parietal bone and about midway between the level of the parietal eminence and the median line. A Hey's saw joins these trephine holes. The bone half sawn through is cut out by bone forceps; it makes a rectangular opening 4 by 3 in. The size will vary according to the size of the skull, but I always err on the side of excess rather than of deficiency of room. The safety of the patient is manifestly promoted by leaving the parietal eminence intact. Before cutting with bone forceps it is always well to see that the dura mater is not adherent to the bone at any part. When the bone is removed the dura mater crossed by its branching vessels comes into view. It is opened very carefully by a small aperture so as not to puncture any delicate vessels beneath. A director may then be passed in and the dura slit up from side to side in three or four places as far as the dural vessels will permit. The state of the pia-arachnoid and of the brain beneath may then be conveniently inspected over the whole area, 4 by 3 in. The pia-arachnoid may be opened in various places and the fluid allowed to run away. A stream of normal saline refreshens and washes the wound, and the flap similarly freshened is laid back in position with the forceps still attached. The surgeon, beginning at the anterior end of the wound, stitches it up with a continuous suture of silkworm gut, the assistant removing the forceps as he advances until the whole wound is quite stitched up. The cicatrix lies over the solid bone, and the pressure of the suture and afterwards of the dressings produces complete hæmostasis, so that not a single ligature has to be used throughout the operation unless the surgeon is so unfortunate as to wound a pia-arachnoid vessel in opening the dura mater, when a fine ligature may be necessary and is difficult to apply owing to the frailty of these vessels. A fine curved Kocher's drainage-tube, with small elevations at the outer end to prevent it passing beneath the flap and out of sight, is now inserted at the posterior end of the wound and passed between the dura mater and the flap. Sterile gauze and sterile wool dressings are now applied in profusion and held firmly in position by a well-applied capeline bandage. Great care is necessary in nursing to see that the patient does not interfere with the dressings and that fresh wool is applied at once where discharges show. In 48 hours the dressings are taken down, the glass tube removed, and the dressings re-applied and allowed to remain until the fourteenth day after operation, when the sutures are removed and lighter dressings applied for another week. Afterwards a soft cap is all that is necessary, stiffened by a thin piece of poroplastic material a little larger than the size of the opening. It is only necessary that this stiffening should be fastened inside the lining of the cap and over the weakened part of the calvarium. It is quite as effectual in warding off blows as a silver plate fixed over the trephine opening. It should be worn for some months, especially during play, or when circumstances render its use advisable.

Results of Operation.

I will now give the results of operation up to date in 20 cases that we have been able to follow up. There are many other cases which have been lost sight of through change of residence, the final results of which we do not know. The mortality is now practically *nil*, but at first we lost three cases through sepsis. This can be avoided, not only by strict asepsis, but by seeing that the scalp is quite healthy, and by having the patients well watched that they do not interfere with the bandages as occurred in two of our cases.

CASE 1.—A boy, a congenital epileptic, aged 11 years, was admitted to the Birkenhead Workhouse Hospital on August 27th, 1902. He had six severe attacks of *grand mal* during the remainder of that year, and eight during the first five months of 1903. These were all diurnal attacks. He was apparently a hopeless imbecile epileptic, unable to talk better than a year old baby; was dull, stupid, and as incapable as an infant of attending to the wants of Nature. The mother had heard of good results in one of my simple trephine cases and brought the child to me for operation. There was evidence that the right arm was first affected by the fit, and in accordance with my ideas on the question of fluid I for the first time, June 4th, 1903, at the Royal Southern Hospital, Liverpool, performed the operation of fenestration of the dura as a complete and predetermined operation. A considerable quantity of clear fluid came away from the pia-arachnoid. The wound healed up by first intention, so that we need not dwell upon details, and the technique of the operation has been already described. On June 7th, 1903, patient had a slight attack. On June 29th he was sent back to the workhouse. Dr. Stansfield, who was present at the operation, and is the medical officer to the Birkenhead Workhouse, informed me that he had one slight fit a week after his return and none since.

In April, 1908, he was admitted to the Epileptic School at Maghull in a much more intelligent state, but still unable to talk, although his vocabulary was somewhat greater. It was hoped that contact with other children would stimulate him to vocal effort. We were here met by a difficulty. The incontinence still continued in much the same state as in hospital, and threatened to bring his school career to an abrupt close. Having overcome the fits we were determined not to be beaten by a secondary difficulty. Fortunately in the adult portion of our colony we had a very steady sensible patient, who told me he had considerable experience in training young animals and loved the work. To him we now deputed the higher task of training in habits of cleanliness an imbecile boy. He undertook the task *con amore*, and in less than three months the boy was able to attend to himself and to keep himself and his bed quite clean. Since the operation the patient has not had a single dose of bromide or any medicine except an occasional dose of aperient medicine. He can talk and play with his companions. He understands what they are saying, and speaks a childish language which they can understand. He can do simple work to which he is put, and there he will stay, doing fairly well till he is taken from it and put to something else, but he cannot do any work that requires thought or change of action. He is obedient, sensitive, and affectionate, and he has now been handed over to the guardians as a cured epileptic. This has been done because he had reached such an age that we could no longer keep him at the school. After eight years we may use the word *cure* in regard to this case.

CASE 2.—The patient was an imbecile boy, aged 15, unable to read, quite intractable, and also subject to frequent epileptic attacks. These were congenital, came on without warning, and probably began on the right side; severe attacks of *grand mal* occurred every few days. The success of the previous case encouraged us in undertaking this one, especially as the parents were very anxious for something to be done. Accordingly, on March 17th, 1904, the operation of fenestration was performed on the left side. The note by the house surgeon is to this effect: "Free incision made through dura mater, meninges in usual œdematous condition, gauze drain inserted. Patient very noisy and restless after, trying to tear bandage off." Up to his discharge on April 11th, 1904, the patient had four fits. Much more frequent before operation. At the end of April, 1907, I followed up the case, and learned from the mother that he went on well after his discharge, had no fits for 12 months, could run errands, attend to directions, and listen to instruction. She was delighted with the gradual improvement, and her hopes were very sanguine in regard to his becoming a useful member of society. At the end of the year, however, his legs began to swell, the eyelids and hands became puffy, and he died from acute Bright's disease on August 5th, 1906. After the dropsy began his fits returned, and continued more or less till he died.

CASE 3.—A boy, aged 3½ years, an imbecile epileptic, was brought to me at the Royal Southern Hospital at the beginning of November, 1905, as a case that might be benefited by operative measures. The boy was reported to be normal till he was 18 months old, and three months after the history of a fall. About that fall we could not obtain any definite information. There was no depression of the skull, and no marks were to be seen. At first he showed "twitching movements" or "partial convulsions." These attacks were easily excited by noises. He had become irritable, cross, and incontinent. The twitchings began in the right hand, and spread rapidly all over the body. When two years old he had scarlet fever, and since that time the attacks became much worse. He had frequent attacks daily. No history of heredity or parental alcoholism. Labour was prolonged, but not instrumental, no natal asphyxia or other cause of imbecility; a very unpromising case, but considering the improvement in Case 4 it was determined to give the boy the chances of the operation although he was a drivelling idiot, unclean and apparently hopeless.

Accordingly in the beginning of December, 1905, the operation was performed successfully, and the patient was discharged from hospital a month after with the wounds healed and the patient as sound in health as before. We were to hear from the mother at intervals as to how he was doing, but we received no information from her for a long time. When at last we unearthed the case we found the mother had been unable to look after the boy; she had handed him over to the guardians, and finally he had been removed to Winwick Asylum, where he was admitted in April, 1907. The medical superintendent, Dr A. Simpson, kindly kept me informed at intervals of the course of the case, and I obtained the following statistics of his attacks when I visited the asylum in 1910: 11 fits in 1907, none in 1908, three in 1910. In a letter, dated April 5th, 1910, Dr. Simpson says, "In reply to your letter of the 4th instant, I beg to inform you that the boy's mental condition is not improving, he becomes more troublesome as he gets older. He has had no fits for three months."

I mention the case to show the improvement in the number of attacks from several thousand annually before operation to 14 fits in three years afterwards. We do not know how many attacks he had under the mother's care after operation.

CASE 4.—A boy, aged 13, was admitted to Royal Southern Hospital from the out patient department on April 23rd, 1906. The boy is said to have fallen on his head in 1903, and to have injured the left side of his head. Some time after this the attacks commenced, and to this fall the disease was ascribed. There was no definite account of the injury, even the time of its occurrence was uncertain, and nothing abnormal was to be seen about the skull or scalp. The attacks were severe and increasing in number, one *grand mal* every week, many attacks at night, mental dulness increasing, and mental faculties becoming perceptibly impaired. On August 1st, 1906, I trephined over the left side of the skull where the injury was supposed to have been, but found the skull entire and normal. The dura was opened, but the quantity of œdema was unusually small. All the steps of fenestration were gone through, and the wound healed *secundum artem*. The effect upon the fits was *nil*, although the mother thought he was brighter.

On June 29th, 1909, she brought him back to me with a report that the night attacks were increasing in number and severity. The day attacks varied, and he had occasional giddy attacks without complete loss of consciousness. "Boy very dull and lethargic, and shows little intelligence." I determined to trephine the right side, although there were no focal symptoms to guide me, but I knew from the previous exploration that the left side of the brain was not the affected side. On July 1st, 1909, I trephined and found the brain œdematous, and at parts the œdema was hæmorrhagic in tint as if there had been an ancient cortical hæmorrhage there at one time. On March 15th, 1910, this patient was admitted to the Epileptic Colony at Maghull. He has become very sensible and intelligent, works very well, and his attacks have become less by one half.

CASE 5.—A boy, aged 11, congenital epileptic, somewhat weak-minded, mental condition that of a child 6 years of age. Having 30 to 40 attacks every six weeks, these coming in batches and producing such prostration and exhaustion as to threaten his life every time. The attacks are all of the *grand mal* type. There is a constant spasmodic tic of right eyelids, especially the right lower lid. During the time the series of attacks are taking place he complains of pains in both legs and over the left acromion process. Both sides of his skull were trephined and fenestrated on Feb. 12th and June 6th, 1907. At the first dressing on June 8th, when the usual small glass drainage-tube was being removed, a large amount of clear fluid had soaked the dressings. Patient looks more intelligent, and says the pain has gone from his legs. He was seen on Sept. 9th, 1907, still free from attacks, healthy, and intelligent. He is being kept under observation. The mother came to me on Jan. 4th, 1911, in great grief. She said the boy had been much better since the operation, but towards the end of the year 1910 he had an attack in which he died. She had been trying to get him into the school at Maghull, but could not succeed. I was very sorry, as a promising case was cut short during an attack, probably through cardiac failure or want of skilled attention during the convulsions.

CASE 6.—A girl, aged 10 years, was sent to me by Dr. Williams, Rock Ferry, as a patient suitable for my fenestration operation, of which he had heard good accounts. She was the subject of attacks of *petit mal*, some of them very slight, but others more severe, entailing frequent falls and injuries. She was simple, could talk about nothing but her fits, and although she looked sharp the appearance was delusive, her mental faculties were much impaired, and judging from the report of the mother the deterioration was evidently progressing. There was no definite aura, but there was a tradition of right-sided twitchings. On Sept. 27th, 1906, I fenestrated the right side, and found the pia-arachnoid "highly œdematous." The wounds healed by first intention, but the attacks were not much influenced, continuing ten daily as before. In consequence I was induced also to operate on the right side, and there I did not find any trace of œdema but considerable tension of the brain, which bulged into the fenestration opening. The wound healed up quite satisfactorily, but during convalescence she had a sharp attack of pneumonia of the base of the left lung which caused some anxiety. It all passed over safely, and she was discharged on Jan. 9th, 1907. I saw her occasionally afterwards. On Oct. 29th, 1910, I received a communication from Dr. Williams asking me to see another case for him, reminding me of this case, which he said I had operated on so successfully, "only 68 fits since last operation, and none since January last, except slight faintings, and these only lasting 'a few seconds.'" He concludes: "I think it is a result you ought to be proud of."

CASE 7.—The patient, aged 10 years, was a school girl who became epileptic at 2½ years of age. The disease gradually increased until she had as many as 16 to 17 fits per diem. Under bromides she had a short respite, but when 5½ years of age her attacks became more severe and more frequent—one every three hours. Left side is chiefly affected. She cries at commencement of an attack, works her arms, especially the left; puts arms over her head. Is feeble-minded and quite uneducated, never having been to school. She was admitted to the Royal Southern Hospital on Feb. 21st, 1910, and was operated upon on Feb. 24th. Usual œdema found and usual operative technique carried out on the right side of the head. On the 26th she had had 15 attacks since operation, but not so severe. The attacks gradually became less, and on April 1st, when discharged, the daily attacks were reduced to none, and during the previous week to two per diem. She is now at the Epileptic School at Maghull, and has only had one attack on an average per week. She is getting on very well at school, is intellectually much brighter, physically better nourished and more energetic, and is a very promising case, in marked contrast to the state of imbecility and irresponsibility which characterised her before operation. Her teacher says: She is rather slow in acquiring knowledge, but when she has grasped it, she holds it firm. Her chances of becoming an intelligent member of society are very good."

CASE 8.—A boy, aged 7 years, admitted to the Royal Southern Hospital on Oct. 7th, 1907, for the purpose of fenestration of the dura. He had been an inmate of the epileptic home at Maghull, since Oct. 13th, 1906, and during the rest of that year, 1906, he had 42 fits.

During 1907 he had 681 attacks, so that his average number was about two daily. He was taking 5 gr. borax and 5 gr. bromide of sodium all the time. The nurse reports: "In going into an attack he begins to stare, the eyes roll backwards, the right side of the face and especially the right angle of the mouth twitch. If he is in a sitting position he does not fall. The whole attack only lasts a few seconds, and he soon recovers his natural condition when the fit is over. His behaviour is silly, his speech is backward and indistinct, and his papers describe him as partially imbecile. He talks all the time and does not listen to what is said to him, except that he pays more attention to his nurse, of whom he is very fond. When an attack is coming on he calls out that he is going to be ill, and falls down if not already seated." The operation was performed on Oct. 10th, 1907. Six large fenestrations were made in the dura mater. The surface of the brain was found to be very œdematous, and bulged through the fenestrations. Wound healed up as usual by first intention. He was discharged on Nov. 30th, having had 81 fits since the operation. During the first part of 1908 he had no medicine whatever, and the number of attacks came down very slowly. He was then placed on the same medicine as before the operation, under which treatment his attacks numbered 681 a year as above recorded. The improvement was now more rapid, and during 1910 he had 38 severe attacks and 18 slight, in all 56, or one per week, a marked contrast to two per day. The boy has developed well physically and intellectually, and has improved in appearance out of all knowledge. The benefit from the operation is so great as to be a surprise to all who have observed the case.

CASE 9.—A boy, aged 7, was admitted to the Royal Southern Hospital on June 2nd, 1908. Twelve months previously he began to have fits, cause unknown. The mother stated that the fits always began with twitchings of left arm. There was no cry and the child had only fallen twice. Loss of consciousness was very short, and the whole attack lasted about half a minute. Child was drowsy for some time afterwards. The attacks occurred irregularly, sometimes four times a day, at other times only once a week. His mental condition was still fairly intelligent, but mind failing, articulation normal. Examination of fundus oculi (Dr. Hamilton): "Veins full and dark (particularly inferior nasal vein); edges of disc woolly." On June 15th fenestration was performed on the right side of the skull, fluid present as usual; wounds healed by first intention. Had one fit on July 11th, none afterwards before his discharge on July 20th, 1910. On July 6th the fundus oculi were again examined by Dr. Hamilton and no change was reported. During 1909 and 1910 the boy has been at the Epileptic School at Maghull, and his attacks have fallen to one per week during these two years, a distinct improvement from what it was before operation, when he had sometimes four attacks per day. He is intelligent and good at his lessons.

CASE 10.—The patient, a boy, aged 15, was admitted to the Royal Southern Hospital on Feb. 16th, 1909, suffering from epilepsy. His attacks had been coming on every fortnight for the past eight years. The attacks were severe, *grand mal*. He knew when the attack was coming on by a feeling in the right hand, and the attack was ushered in by twitchings of the right side of the face and in the right arm. The alleged cause of the disease was scarlet fever, which he had a short time before the attacks began. Patient was fairly intelligent, imperfectly educated, said to be mischievous, mild in temper, and very repentant and submissive when found out in any mischief, and probably tried to be law-abiding, although his impulses were sometimes too strong for him. Medicine had no effect on his attacks, and hence the desire of his friends for operation. On Feb. 17th, 1909, fenestration was performed in the usual way, usual fluid found, and usual good surgical results obtained. No attacks while in hospital. He was received at the Home for Epileptics, Maghull. During the year 1910, when he was under observation at the homes, he has had eight severe and two light attacks. He works steadily and is well conducted. During the last six months he has only had three attacks, one-fourth of what his normal number was before operation.

CASE 11.—A boy, aged 10 years, was admitted to the Royal Southern Hospital on Nov. 2nd, 1909. This child suffered during his first year from pneumonia and meningitis and chicken-pox, and when he was about 12 months old he began to have fits, supposed to be due to the meningitis. The attacks were numerous and short, and mostly affected the right side. The mother said the child appeared to be frightened, and then the right hand and arm began to twitch. The twitchings became more violent and extended to the whole of the right side; left side passive. Did not quite lose consciousness; lasted at most two minutes. He had marks of a flap on left side of his head above the ear, and on inquiry we found that he had been trephined at a children's hospital six years ago, when a thick layer of fluid was found but nothing else, and nothing was done. The opening in the dura was stitched up and the bone replaced. No change had taken place in the attacks. He had since been treated with bromides, iodides, belladonna, diet, removal of teeth and adenoids, without benefit. In 1906 he had 204 attacks; in 1907, 522 attacks; in 1908, 450 attacks; and up to time of operation, Nov. 4th, 1909, he had 368 attacks. Operation of fenestration was performed on Nov. 4th. Extensive œdema, or rather a layer of flocculent fluid, with a thin membrane on surface. This surface membrane was removed and much fluid came away freely. Wound healed in usual way. During convalescence he had 54 slight attacks. The attacks did not diminish during 1910, and in one month, November of that year, he had 800 attacks. At the time of writing his attacks are about one-half of the original number. His mental condition is very much better and he is much less irritable.

CASE 12.—A boy, aged 7, was admitted to the Royal Southern Hospital on Dec. 7th, 1909, suffering from epileptic fits affecting mostly the right side of the body. No heredity; his parents were alive. His grandfather suffered from rheumatism and died from consumption. The fits began two years ago, and averaged about 24 per month, or about one daily. Right arm and leg work especially. Was quite unconscious and cyanosed during attack. On Dec. 9th, 1909, I trephined, and the dura mater was fenestrated on the left side; œdema on the surface of the convolutions. Wounds healed by first intention. No attacks while in hospital. He then went home for some time, and was admitted to the school at Maghull. Attacks much reduced; now average ten per month, a reduction of nearly two-thirds. Mental and physical condition much improved.

CASE 13.—A male, aged 30, was admitted to the Royal Southern Hospital on April 1st, 1908. He had suffered from epilepsy for the past 16 months. Twenty-two months ago patient was working under an iron girder. He suddenly stood up and struck the back of his head. He was senseless for about half an hour. He noticed nothing further and received no treatment. About 16 months ago he began to develop fits every six weeks. The fits are confined to the right side. He always has a left-sided headache, shooting from front to back, before fits. He loses consciousness instantly. The fits (*grand mal*) have gradually increased, especially since he was operated on in a country hospital, coming now every week instead of every six weeks. Medicine does not seem to have any control over number or severity. Knee-jerks exaggerated, slight ankle clonus on both sides. No paresis anywhere; eyes normal. No marks on skull except that of trephining a little below vertex on right side. Operation April 2nd, 1908. Fenestration performed in the usual place above parietal eminence. The brain was much congested and the œdema was considerable. The wounds healed as usual by first intention, and the patient left hospital on May 2nd, 1908, having had six fits during his convalescence. On June 6th, 1909, the patient's wife wrote: "In answer to your kind letter, I am pleased to say my husband has much improved. He is heavy at times and has to lie down, and the few attacks that he has are slighter than they were before operation."

CASE 14.—A man, aged 42, admitted to the Royal Southern Hospital on Nov. 26th, 1907. Ten years ago patient was wheeling a hand cart containing two machines, when he slipped and fell against a kerbstone. He had to let go the hand-cart and the two machines fell on his head and body. He was bruised and rendered unconscious, and taken to a hospital, which he attended for some time afterwards as an out-patient. A fortnight later he had a fit in the street, in which he was incontinent and bit his tongue. Lately he has had one or two attacks a fortnight. No sensory aura. His father had died from phthisis, aged 39, and his mother from pneumonia, aged 58. Three sisters were living, and a brother and sister had died in infancy. The patient worked at odd jobs, was of steady habits, and had had no venereal disease. There was a slight depression of the skull above the superior curved line on the right side, but it was doubtful whether it was traumatic in origin. Patient mentally a little simple. Reflexes also muscular, and sensory functions normal on both sides. Vision of eyes normal. No indication for operation except the depression. Nov. 28th, 1907: Fenestration operation performed on the right so as to take in the depression on the skull; no signs of injury to the bone. The bone was very soft and vascular. There was a localised patch of œdema at the lower part of the opening in the skull; elsewhere the brain looked healthy. The wound healed by first intention. Fits during convalescence, 62. At the end of December it was manifest that no impression had been made on the disease, and that we had been deceived by the depression, and had opened the wrong side of the brain. With the approbation of the patient and his friends we operated on Jan. 2nd, 1908, on the opposite side. Here the surface of the brain was very œdematous—a contrast to the same parts of the opposite side at the previous operation. The wound healed as usual. Fits after operation, 40. Discharged Jan. 31st, 1908. It was noticed by the house surgeon that the patient was much brighter, and cerebration was much quicker after the second operation. He was sent to the Colony at Maghull, where his attacks became much less frequent, but he was erratic and difficult to control. He ran away, and was for a time in the workhouse wards in Liverpool. Here he had no attacks for two months. He left that place and was found at West Derby workhouse; his attacks were kindly reported to me by the resident, Mr. O. H. Williams, for a month. No attacks in the day, and 20 at night during that time. The case was a promising one, had it not been for the unmanageable and erratic character of the patient. On the whole he had improved, but being restless he did not carry out any treatment and went from one institution to another as the impulse took him.

CASE 15.—A schoolgirl, aged 11 years, admitted to the Royal Southern Hospital July 16th, 1907. Her parents, brothers, and sisters were all alive. No evidence of heredity. Six months previously to the first fit, four years ago, she had a fright by a dog, which jumped up on her. When 8 years old a chimney-pot fell on her head, but this was not evidently the cause of the disease which had appeared a year previously. The month before admission she had two series of attacks. She had been at school before she was taken ill, and could read and write. Occasionally she was obstinate and difficult to manage, would shut herself up in a room, locking the door behind, and would not open it and the door had to be forced. Her father could control her but not any of the rest of the family. The attacks occurred in batches, but sometimes would continue for 13 hours, but generally they lasted eight hours. The left arm and leg were the first convulsed. Fenestration performed July 17th. There was considerable œdema along the vessels, especially posteriorly. Drained as usual. Healed by first intention. Had one fit on August 4th, no more while in hospital. She was at the epileptic school at Maghull during all 1910. She had only had one mental equivalent, early in that year, when she was obstinate and difficult. She had had one and sometimes two attacks per month, but these were all single, and passed away quickly. She was intelligent, clean, and tidy, and earned good reports, and tried hard to do her best to be agreeable.

CASE 16.—A girl, aged 10, of rather low extraction, and the subject for some time of granular lids, now cured. She had been epileptic for two years past; no heredity discoverable. The attacks average four to five every night, and were apparently unaffected by medicine. The twitching mostly affected the right side. Face said to be drawn to the left. The child was operated upon in the workhouse hospital on June 22nd, 1910, in the usual way. During the first 24 hours there were 12 attacks; most of these were slight and of short duration. Next day 12 attacks, next day 11 attacks, next day 10 attacks. The fits continued for two weeks, becoming gradually fewer in number and less severe, and for a time before discharge she did not have any. No medicine administered. She was discharged from the surgical department on August 16th. She remained in another department of the workhouse hospital till the end of November, 1910, when she was transferred to the Epileptic School at Maghull, not having had an attack since August 9th. On June 19th, 1911, she was still without attacks and did not require any medicine.

CASE 17.—A girl, aged 13, was admitted to the Liverpool workhouse hospital in 1910. She had been subject to epileptic fits for the last nine months, the cause being unknown except that she had a fall on the forehead nine years ago. No evidence of heredity. Attacks usually occurred during the night. Twitching chiefly on the left side, the mouth being drawn to the left and the head turned to the left. Slept for some time after an attack. Average number, three or four daily. On May 11th fenestration was performed. Œdema distinct, but not so

much as is generally found. On the first day after operation she had eight fits, on the second day five, third day two, then none for a week. On the 22nd one fit, 23rd one fit, none after that, and no medicine until the middle of November when she had severe slight attacks. She was put on borax and sodium bromide, and the attacks immediately disappeared. She is now at the Epileptic School at Maghull.

CASE 18.—A man, aged 35, admitted to the Royal Southern Hospital on March 1st, 1910, suffering from right hemiplegia, aphasia, and fits. He was a very precocious child, being able to speak and even, it is said, to converse when ten months old. When about two years old he had some fits and aphasia and lost the power of walking. He slowly recovered, and was educated and able to do clerical work till two years ago. He then become epileptic, aphasic, and right hemiplegic, in which condition he was received into the Royal Southern Hospital under my care. There was no record of syphilis, but previous to operation he had taken iodide of potassium in large doses for some weeks without any effect. On March 3rd fenestration was performed, and a wide area of dura mater exposed. "The dura mater bulged and the vessels were distended and stood out in thick lines. The dura mater was incised, when the arachnoid bulged through the opening, presenting a picture as of several 'cysts' filled with clear translucent fluid with little white spots dotted in their walls." The arachnoid was opened where it bulged through the dura, and a very large quantity of clear fluid escaped. Convolutions seemed smaller, and a finger could be inserted between them and the bone. No disease except collection of fluid. Drainage as usual. In 48 hours the drainage-tube was removed and the dressings found saturated with fluid. The wound healed satisfactorily, the aphasia remained, but the paralysis and fits disappeared. He was seen on March 1st, 1911; he had had one fit since discharge and is back at work. Hemiplegia quite gone and speech returning slowly.

CASE 19.—The patient was a boy, aged 11. Father killed by accident. A mother, two sisters, and a brother were alive and well. The habits of the parents unknown and no history of heredity. The boy fell off a wagon four years ago and was said to have hurt his head, but nothing definite known as to part injured and no evidence of injury to skull now to be seen. Three or four years ago he commenced having fits, having three to four daily since. Bromides had had very little apparent effect, and hence request for operation. He was admitted to the Liverpool workhouse hospital on Sept. 29th, 1909. The fits always began on the right side, especially the right arm, which became stiff. After fit was over he was often found to be doubly incontinent, and was heavy, stupid, or dazed for an hour or more. The week before operation he had 38 fits. On Oct. 22nd, 1909, the left motor area was fenestrated, the usual fluid drained away, and wound healed with the usual aseptic result. On Dec. 10th, 1910, it was noted that the child after operation was much better in health. The incontinence had disappeared and his mental condition was much brighter. Several days now intervened between attacks, and these were now rarely severe. He was sent to the Epileptic School at Maghull. The fits are now much less, one-tenth of what they were before operation. His mind is clear.

CASE 20.—The patient was a boy aged 5 years. His parents were alive. No history was obtainable about their habits or about any hereditary tendencies. A grandmother suffered from rheumatism. Epilepsy ascribed to a fall in the street, but no visible effects produced and the time of the fall unknown. He had his first fit on August 8th, 1908. Has had three to four fits daily. Patient uttered an unintelligible sound, the right arm was held out stiff, the fingers working violently, then the right leg became affected. There was some paralysis of the right side of the body. The child was intelligent, but of course entirely uneducated. He was admitted to the Royal Southern Hospital on Oct. 22nd, 1909, and operated upon two days after. The usual fenestration was performed over the left motor area, with the usual satisfactory surgical results. He was then taken home by the mother, and finally received into the Epileptic School at Maghull on April 29th, 1910. On June 26th, 1911, he was still at Maghull. He has had no fits and no medicine since operation.

Such are the brief records up to date of 20 cases that have been operated on by a definite operation; most of the patients have been under observation and have had rational treatment afterwards. There are other patients whom I have seen occasionally but not lately who were promising well, but the treatment I recommended could not be carried out and they fell again into the hands of quacks who took all the credit that was going for any improvement. Nevertheless, in every case some benefit was observed, and probably much more would have accrued had wise counsels prevailed. My experience shows that the results in children are more uniform and more permanently successful. In adults the benefit is the more permanent the larger the opening, but in these the influence of the operation becomes weakened as the scar becomes hard and tense. In all intractable cases in young life the operation can be strongly recommended. For instance, in Case 11 medicines were useless, and the attacks were nearly two a day under approved hygiene and medical treatment. After operation medicine has a more distinct and definite ameliorative result, and the gradual improvement in this respect due to the operation was undoubted.

I am quite familiar with the theory, that will again be revived on reading this paper, that the mental effects of an operation on epileptics may account for any improvement. The mental impression cannot be produced on imbecile epileptics, however, although it might have some effect on the disease in some intelligent adults. My first cases did not know they were epileptics, did not know they were operated upon or that they had any need of relief. And none of the more rational children had really any better knowledge. I think the good results may be ascribed fairly to the removal of the fluid and to the facilities for its absorption afterwards. The improvement in the mental condition of the patients has been very marked and has been spontaneously observed by nurses, house surgeons, and relatives.

If, as I hope, in the future the treatment of epilepsy should be taken in hand in a rational, systematic, and determined way, the operation will be available for a certain number of intractable cases at a sufficiently early stage when good results may be expected from it, and when the patient can be retained under good hygienic and medical control until the conditions of the brain have become such that the fits will disappear. In many cases of epilepsy no operation is necessary, and in others the necessary aura may be absent, and in such it would be difficult to find the part of the brain where the fluid is to be found. I believe, however, in the work detailed in this paper we have some hope of relief when other measures have failed, and that we have also a clue to another theory of epilepsy that may prove of more practical benefit than that which holds the field at the present time. Of that more anon.

Conclusions.

1. There are some cases of epilepsy that prove intractable to general medical and hygienic treatment, and these, unless the disease be somehow arrested, will soon terminate in imbecility and death.

2. In these cases the affected motor area is covered by more or less œdema of the pia-arachnoid, and this œdema probably so affects the cells of the cortex as to predispose to, or cause, the epilepsy and imbecility.

3. In cases with localising aura, we can, by the operation of fenestration of the dura mater, drain these œdematous areas and prevent re-accumulations.

4. By the operation the progress of the disease has always been retarded. In several the fits have stopped, and in many have been reduced to fractions of the original number.

Liverpool.

THE VIABILITY OF HUMAN CARCINOMA IN ANIMALS.[1]

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THE object of the present research is to determine the cell changes occurring in portions of human carcinoma implanted into animals, and more particularly to ascertain if such implanted tissues are capable of surviving for a time, and if so, the manner in which they succumb.

Implantation of human carcinoma into animals has been made by numerous observers, and the failure of such implantations to produce tumours is now an ascertained fact. Among the earliest experiments are those of Ballance and Shattock,[2] the objective of which was to determine if human carcinoma was transferable from man to animals; in these observations the immediate effect of implantation upon the cells of the growth was not determined. Von Langenbeck,[3] Jürgens,[4] Dagonet and Mauclaire,[5] and Gaylord[6] produced in animals, by inoculation of carcinoma, tumours which, however, differed in structure from the original. Lewin[7] succeeded in obtaining inoculable granulomata in dogs by implantation of a human ovarian carcinoma, and also in rats by inoculation of a carcinoma of the cervix of the human uterus; this author made numerous attempts to obtain inoculable tissues by implantation of human carcinoma, but only the above two were successful.

[1] A paper read before the Royal Society on June 29th, 1911.

[2] A note on an Experimental Investigation into the Pathology of Cancer, Royal Society's Proceedings, 1890, vol. xlviii., p. 392; Brit. Med. Jour., 1891, vol. i., p. 565.

[3] Quoted by Lewin, loc. cit.

[4] Ibid.

[5] Versuche über die Uebertragbarkeit des Menschlichen Carcinoms auf die Ratte, Archives de Médecine Expérimentale, 1904, No. 5, September.

[6] Ueber die Bedeutung der Plimmerschen (bezw. Sjobringschen) Körperchen und die durch Menschliches Material erzeugtes Krebswucherung bei Tieren, Zeitschrift für Krebsforschung, 1903, vol. i., p. 93.

[7] Ueber Versuche, durch Uebertragung von Menschlichen Krebsmaterial verimpfbare Geschwülste bei Tieren zu erzeugen.

The effect of implantation of mouse carcinoma and sarcoma into rats has been studied by Ehrlich,[8] who found that during the first 8–10 days after inoculation the rate of growth was scarcely less than before implantation; at the end of this period, however, growth ceased and gradual absorption occurred.

The method adopted in this research was that of implanting subcutaneously, with aseptic precautions, several selected portions of a malignant growth, freshly excised (pieces being put aside for microscopical observation), and following up the changes taking place in the cells of the growth by reference to sections of the implanted masses, removed for examination at different periods. The time elapsing between separation from the human body and the completion of implantation varied between 20 and 25 minutes. Implantation was effected by puncturing the skin with a straight cataract knife, and introducing on the point of the knife a piece of tissue having the form of a cube of 1 to 1½ mm. The portions of tumour implanted were removed at intervals of 1 to 13 days.

The number of tumours used for implantation was 41; 10 tumours were, however, employed in connexion with unsuccessful implantations, so that only 31 need be referred to here. Of these, 19 were epithelioma (17 primary growths, 2 secondarily infected glands), 10 were scirrhus of the breast (9 primary growths, 1 secondarily infected gland), 1 was spheroidal-celled carcinoma, and 1 rodent ulcer. Implantation was made upon the monkey (20 tumours), rabbit (4 tumours), pigeon and guinea-pig (each 2 tumours), cat, rat, and mouse (each 1 tumour).

The usual causes of unsuccessful experiments were suppuration and failure to recover the pieces of tumour implanted. Suppuration was not met with so frequently as was expected, even in the case of growths ulcerated on the surface; when present sometimes every piece of a tumour used for implantation became the seat of suppuration, in other cases suppuration occurred at some of the sites of implantation, while at others no inflammatory reaction occurred. A more serious difficulty was failure to recover the portion of tumour implanted. In a small number of cases this arose from the piece of tissue lying near the opening in the skin by which it was introduced, and in consequence desiccation ensuing. In other cases the piece of tumour implanted appeared to have moved from its original position and could not be traced. Not infrequently the portion of growth implanted seemed to have undergone very rapid absorption, with the result that either the piece of tumour implanted could not be traced or no unmistakable growth of the original mass could be recognised in what is regarded as the remains of the implanted mass; difficulties of this kind were common from the fifth day after implantation onwards, and thus tend to limit the number of observations possible at later periods.

The result of implantation is summarised in the table

Implantation of Human Carcinoma. The + and − signs indicate the presence and absence respectively of living cells (L) *and mitoses* (M).

No. of experiment.	Tumour.	Animal used for implantation.	Condition of implanted portions of growth at end of— 1 day. L	1 day. M	2 days. L	2 days. M	3 days. L	3 days. M	4 days. L	4 days. M	5 days. L	5 days. M	6 days. L	6 days. M	7 days. L	7 days. M	8 days. L	8 days. M	9 days. L	9 days. M	10 days. L	10 days. M	11 days. L	11 days. M	12 days. L	12 days. M	13 days. L	13 days. M
21	Epithelioma of lower jaw	Monkey.	+	+	+	−																						
22	Epithelioma of floor of mouth	,,	+	−	+	−																						
23	Epithelioma of tongue	,,	+	−	+	−																						
24	Epithelioma of prepuce	,,	+	−	+	−	−	−																				
29	Epithelioma of fauces, glands secondary to	,,	−	−	+	−	+	−													-	-						
31	Epithelioma of jaw and tongue, glands secondary to	,,	−	−	−	−	+	−	−	−																		
32	Epithelioma of cheek	,,	+	−			+	−	−	−	−	−																
34	Epithelioma of lower lip, glands secondary to	,,			−	−							−	−			−	−										
37	Epithelioma of tongue	,,					+	−					−	−							−	−			−	−		
38	,, ,,	,,							−	−					−	−												
18	,, ,,	,,	+	+																								
27	Scirrhus of breast	,,	+	+	+	+	−	−	+	+																		
28	,, ,,	,,	−	−	+	−	−	−																				
30	,, ,,	,,	+	−			+	−	−	−					−	−												
33	,, ,,	,,					+	−	+	−	−	−	−	−														
39	,, ,,	,,							−	−					−	−							−	−			−	−
41	,, ,,	,,			−	−					−	−			−	−												
42	,, ,,	,,			+	−			+	−							−	−										
26	Spheroidal celled carcinoma of breast	,,	−	−	−	−					−	−																
35	Rodent ulcer of scalp	,,			+	−					+	+																
5	Epithelioma of tongue	Guinea-pig.			+	−																						
10	Epithelioma of lip	Rat.	+	−			−	−																				
12	Epithelioma of ear	Rabbit.	−	−																								
15	Epithelioma of temple	,,	−	−																								
14	Recurrent epithelioma below jaw	Pigeon.	−	−																								
16	Epithelioma of tongue	,,	+	−																								
16	,, ,,	Mouse.	+	−																								
18	,, ,,	Cat.	+	−	+	−																						
4	Scirrhus of breast	Guinea-pig.	+	−							+	−																
7	,, ,,	Rabbit.	+	−	+	−																						
9	Scirrhus of breast, axillary glands secondary to	,,	−	−							−	−																
	Summary	+	14	3	12	1	6		3	1	2	1																
		−	8	19	4	15	4	10	5	7	5	6	3	3	4	4	2	2			2	2	1	1	1	1	1	1
		Per cent.	64	14	75	7	60		37	12	40	14																

[8] Beiträge zur Experimentellen Pathologie und Chemotherapie. Leipzig, 1909, p. 135.

The usual course of events occurring after implantation was as follows: In naked-eye aspect the tumour, which was usually easily recognisable, being moist and greyish in aspect and lying loosely among the tissues of the host, did not appear much changed during the first two days. After this period it became dry and increasingly adherent to the surrounding tissues, from which it was less readily distinguished after the fifth day. On microscopic examination the central portions of the growth were found to have undergone necrosis during the first two to three days, presumably in part, at any rate, owing to defective supply of oxygen. Some of the cells at the periphery of the implanted mass, on the other hand, at first remained unchanged in appearance and exhibited more or less evidence of proliferation, generally presenting for the first two to four days mitoses, though fewer in number than was exhibited by the growth before implantation. After the fifth day all the cells of the implanted tumour had become altered and ceased to exhibit mitoses; their nuclear chromatin no longer presented the usual arrangement, but had become collected into irregular masses or fragments. Accompanying the necrotic changes occurring in the portions of tissue implanted, leucocytes, mostly polynuclear, made their appearance in large numbers, being replaced subsequently by mononuclear cells before which the remains of the implanted tissue disappeared. The disappearance of a piece of tumour of the form of a millimetre cube appeared to be completed after the second week of implantation.

In the summary given in the table the proportion of observations in which living cells and mitoses were noted during the first five days after implantation is given in a percentage form. It will be seen that inhibition of the function of cell division is early marked, while cell death occurs (at the periphery of the implanted mass) more slowly. If the experiments made upon the monkey alone are considered, the percentages obtained are more regular, being respectively 67 and 25 on the first day, 69 and 8 on the second day, 67 and 0 on the third day, 37 and 12 on the fourth day, and 20 and 20 on the fifth day. The experiments made with animals other than the monkey are too few in number to yield percentage values, but the circumstance that mitoses were not met with after implantation suggests that human carcinoma is less viable in these animals than in the monkey.

The result of implanting human carcinoma upon animals, it will be observed, is similar to that of implanting mouse carcinoma upon rats already referred to. In both cases a limited degree of inoculability is observable, some of the implanted cells continuing for a time to live and to divide, but whereas in the latter case the rate of proliferation is at first little affected and regression does not begin till the eighth to the tenth day, in the present experiments the cells of the implanted portions of tumour ceased to proliferate at an earlier period, and were no longer living after the expiration of five days.

In conclusion I must express my indebtedness to Dr. Wakelin Barratt for the assistance he has given throughout the course of this work.

Summary.—1. Portions of human carcinoma implanted into animals were observed during the first five days to retain their vitality and to exhibit mitosis after implantation. 2. After the expiration of this period no evidence of vitality was observed. 3. Mitosis was markedly inhibited within 24 hours of implantation, whilst the life of the implanted cells was abolished less rapidly.

Birkenhead.

MEDICO-PSYCHOLOGICAL ASSOCIATION. — The autumn meeting of the South-Eastern Division of this association will be held, by the courtesy of Dr. Hugh Kerr, at the Bucks County Asylum, Stone, Aylesbury, on Wednesday, Oct. 4th. After the transaction of formal business, Dr. John Turner will read a paper on A Classification of Insanity, and Dr. J. F. Corson one on Insane Heredity in the Insane of a Rural Population. Dr. Kerr has invited the members to luncheon at the Bucks County Asylum, and they will dine together, after the meeting, at the Café Monico, Piccadilly-circus, W., at 6.45 P.M., provided that a sufficient number agree to dine. Communications concerning the dinner (5*s.*, exclusive of wine; morning dress) should be made to Dr. David Hunter at the West Ham Borough Asylum, Goodmayes, Essex.

AN

EXPERIMENTAL COMPARISON BETWEEN "606," MERCURY, AND IODIDE OF POTASSIUM AS ANTISYPHILITICS.

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AND
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(*From the Bacteriological Laboratory of the London Hospital*—DR. WILLIAM BULLOCH.)

EXPERIMENTAL investigations in syphilis have become more general since the demonstration by Tomaszewski of the possibility of a testicular infection in the rabbit. This animal is more suitable than monkeys on the score of expense, and, further, the lesions are well localised for observation and are very rich in spirochætæ. Positive inoculations are readily obtained on the skin of the scrotum or deeply into the testis. Some disadvantage is, however, to be found in the fact that in the rabbit the disease is practically local and liable to spontaneous cure. No generalised symptoms are observed, although the virus is demonstrable in the internal organs by means of inoculations of these organs into other animals. The antisyphilitic effect of mercuric chloride has been studied on the rabbit by Tomaszewski, and mercuric atoxyl by Uhlenhuth and Manteufel. Hata also worked largely on this animal when determining the value of "606." We have investigated the antisyphilitic power of "606," mercury, and potassium iodide.

1. *Dioxydiamidoarsenobenzol* ("*606*").

6/12/10.—Rabbit No. 4 was inoculated on both testicles with the virus obtained from a chancre on another rabbit. 10/1/11.—An indurated nodule was detected in the skin of the scrotum on the left side. 16/1/11.—A small nodule was found on the right testicle, that on the left was larger and contained many spirochætæ. 20/1/11.—Ulceration started in the left-hand lesion. 31/1/11.—The ulcer was larger, measuring 2 × 1·5 cm., its edges were indurated and rolled (Fig. 1). On this day the animal (2975 grm.) was injected intravenously at 12 A.M. with 0·1 grm. of "606" in 40 c.c. of fluid. Following the injection its temperature rose 4° F. in 3½ hours. Six hours after the injection, however, the temperature was again normal. No symptoms of general disturbance were observed.

The *effect on the spirochætæ* was followed by means of the method of dark-ground illumination.

At 12 A.M. (the time of inoculation): Numerous spirochætæ were found in every field in a state of unusual motility. 1 P.M.: No change. 1.30 P.M.: No change. Spirochætæ perhaps less active. 2.30 P.M.: Spirochætæ certainly less motile. 3 P.M.: No further change. 3.30 P.M.: Spirochætæ fewer in number, and some were observed to be immobile. 4.30 P.M.: Number of spirochætæ much less. 5 P.M.: Only a few motile organisms seen, the rest motionless and fragmented. 6 P.M.: Only two intact but immobile spirochætæ seen. 6.30 P.M.: A few fragments only observed.

The destruction of the spirochætæ, therefore, began about three hours after the injection and reached its maximum four or five hours after. The effect was complete in seven hours. In man we have found the corresponding figure to be nine hours after adequate treatment.

The effect on the lesion exerted by this injection was very striking. Within two hours it appeared that the pain had disappeared, since the animal no longer winced under the frequent examinations. In six hours the ulcer had shrunk so much that the scab appeared relatively too large. Fig. 1 shows the lesion before treatment (31/1/11):—

1/2/11.—Chancre much smaller. No spirochætæ found. 2/2/11.—Continued diminution. The scab was detached all round its circumference. 6/2/11.—The scab fell off. 8/2/11.—The lesion as in Fig. 2. 13/2/11.—The ulcer still smaller. 16/2/11.—Completely healed, as in Fig. 3.

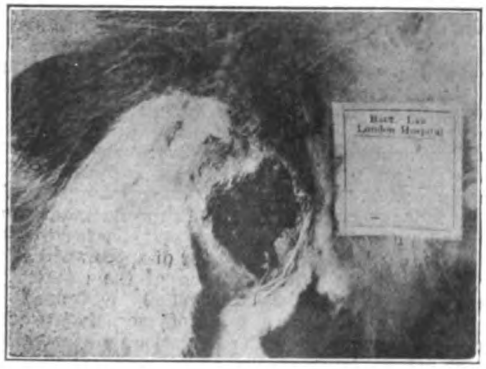
During the process of healing described above chancres on control rabbits remained unaltered. In the course of eight weeks the Wassermann reaction showed a marked quantitative diminution in strength. Owing to a frequent occurrence of this reaction in normal rabbits the final result may perhaps be taken as negative, but these effects should be looked upon with reserve.

2 *Mercury*.—Since it was required to obtain the maximum effect the injection was given intravenously in the form of biniodide, this salt being most suited for the purpose.

14/12/10.—Rabbit No. 7 was inoculated in both testicles with the virus from another rabbit. 17/1/11.—A hard nodule was found in the

left testicle containing many spirochætæ. 20/1/11.—The chancre was much larger and already ulcerating. 10/2/11.—The chancre measured 1·5 cm. in diameter; it was covered with a thick crust, but there was no induration of its edges. (Fig. 4.) At 12 A.M. on this day 0·005 grm. of biniodide of mercury was injected intravenously in 20 c.c. of saline. The highest temperature 103° F. (normal about 101° F.) was noted six hours after the injection. Next day the temperature was normal. No ill-effects were observed other than thrombosis and subsequent gangrene of a small section of the ear. Three days later (13/2/11) a further intravenous injection of 0·008 grm. of biniodide was given.

FIG. 1.



The lesion before treatment.

FIG. 2.

The lesion a fortnight later.

The *effect on the spirochætæ* was found to be much less after these two injections than after the injection of "606." No alteration was found 24 hours after the first injection, while even four days after a few spirochætæ were found. On the fifth day, however, no organisms were detectable.

The *effect on the lesion* was as follows:—

10/2/11.—Date of first inection. Chancre as in Fig. 4. 11/2/11.—No change. 13/2/11.—No change. Second injection. 14/2/11.—Chancre slightly smaller. 20/2/11.—Considerably smaller. Scab still *in situ*. 24/2/11.—Lesion much smaller. Scab dropped off. Fig. 5. 6/3/11.—Chancre quite healed.

FIG. 3.

Testicular syphilis in the rabbit. Effect of injection of 0·1 grm. of "606."

"606" represented one-sixth of an adult human dose, while the amount of mercury represented three adult human doses.

3. *Potassium iodide.*—**According to Neisser this salt has direct spirochæticidal powers. Tomasczewski, however, is of the opposite opinion; he nevertheless considers that iodide is capable of enhancing the therapeutic effect of mercury.**

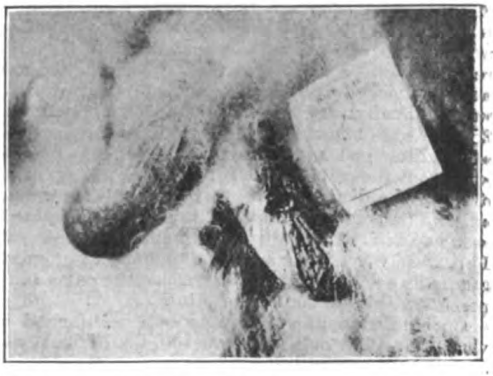
6/4/11.—Rabbit No. 18 was inoculated in both testicles with virus from another animal. 18/5/11.—A nodule was found in the skin over the right testicle. 16/6/11.—The nodule was now the size of a pea. 0·2 gramme of potassium iodide in 20 c.c. of saline was injected intravenously on five different occasions at intervals of two days. No general disturbance was observed.

No *effect on the spirochætæ* was observed and no *alteration in the size of the lesion.*

Conclusions.—**1. "606" in experimental syphilis of the rabbit possesses spirochæticidal properties much in advance of mercury. 2. Potassium iodide is not a direct antisyphilitic.**

FIG. 4.

FIG. 5.



Testicular syphilis in the rabbit. Effect of injection of 0·013 grm. of biniodide of mercury.

In the control rabbits no alteration occurred. The Wassermann reaction of the animal in this case was negative throughout the experiment.

As a comparison between these effects obtained by "606" and mercury it may be roughly assumed that the amount of

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A CASE OF INTUSSUSCEPTION OF THE APPENDIX VERMIFORMIS IN AN ADULT,

WITH A PATHOLOGICAL REPORT AND AN EXPLANATION.

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IN recording this case as one of intussusception of the appendix I have been guided by Kelly's[1] classification and regard it as conforming to his second group—that is, one in which the base of the appendix forms the apex of the intussusception. The complete inversion of the appendix is, and must be, in the adult on anatomical grounds a curiosity of extreme rarity. Battle and Corner[2] have discovered reports of 29 cases, most of which they say "were complete and there was no scrap of evidence to show its pathogenesis." They further state that all these cases except one occurred at an age before that at which appendicitis is common, and in no case was there any history of earlier inflammation of that organ. Kelly's findings are similar; he has analysed 20 cases, 19 of which were in children, the average age being 4 years and 8 months, and one only in an adult who was 40 years of age, but of this last there are no details. The present case appears to me of more than usual interest because, first, contrary to expectation, the intussusception occurred at an age when appendicitis is most common; secondly, an attack of appendicitis was a predisposing cause; and thirdly, intussusceptions in the adult are still a rarity (though Codman was able to collect 29 cases of intussusception at the Massachusetts General Hospital between the years 1898 and 1908, 9 of which were in adults). Their consideration has not received anything like the care devoted to similar lesions in children. It will therefore serve as a reminder that such cases do arise; that they are difficult of diagnosis and require prompt surgical treatment, for delay can only increase the surgical risks and may even render such assistance futile, the patient dying during a period of masterful inactivity.

The patient in the case here recorded was a male, aged 18 years, by occupation a weaver. Up to the time of his illness he had always been healthy. On Jan. 11th, 1911, in the afternoon, whilst lifting a heavy beam, he felt a sudden pain in the pit of his stomach, which caused him to stop at once, and it was so intense that he was not able to resume for some time. During the night the pain continued, but on the following morning it was not bad enough to stop him going back to work. On the morning of the 13th the pain became much more severe, and was noticed now more in his right side, and he was sick on several occasions. Under the impression that he had "strained his inside" he went to see Dr. W. J. D. Bromley of Padiham, who sent him to bed, considering him to be suffering from appendicitis, and treated him accordingly. Here the patient remained until a week later, when, feeling better on the 20th, he once more resumed his occupation. However, it was with difficulty that he managed to do his work, and on the 25th he was obliged to give up on account of several attacks of vomiting and severe pains of a griping character felt at and about the umbilicus. Dr. Bromley was again called and discovered a distinct lump, very evident when the pains were on, and peristaltic contractions of the bowels could also be seen and felt. The patient was kept under observation until Feb. 24th, when, as he appeared to make no progress but was gradually getting thinner and weaker, the pains and vomiting persisting, he was sent to hospital.

On admission he was seen to be a well-formed youth but very thin. The pulse-rate was 100, the respirations were 24, and the temperature was 98·6° F. On examining the abdomen there was no marked distension, but although the abdominal wall was for the most part soft, there was some slight resistance in the lower part and tenderness on deep palpation below and to the left of the umbilicus. No lump was then felt, but as a result of our manipulations a pain came on accompanied by considerable rumbling and gurgling noises in the bowel, and the rapid appearance of a lump below and to the left of the umbilicus. The cramp-like pain made the patient groan, and to obtain relief he drew up his legs, doubling in a similar way to a person suffering from severe colic. As the cramp diminished the tumour felt less hard, altering its position, and with complete cessation of the pain was lost. On examination of the rectum no tumour was felt, but there was very marked ballooning, and the rectum and anus were exquisitely tender. The patient was kept under observation for six days, and during this time the house surgeon, Dr. D. J. McLaren, verified the previous findings on several occasions. The paroxysmal pains were noted to be more frequent after meals—in fact, he was afraid to eat a good meal—their intensity varying from day to day. The more severe pains were relieved by the administration of morphine. During this time his diet for the most part was liquid—beef-tea, diluted milk, and panopeptone. There was now no vomiting. He passed wind freely by the anus and had daily two or three small loose motions containing some mucus but no blood.

It was evident that the patient was suffering from a chronic obstruction, the site being, in our opinion, the pelvic colon; as to its exact nature we could not be more definite than suggest a new growth. Intussusception was mentioned but put aside, partly on account of the disappearance of the tumour, its rarity, and the condition of the stools. An exploratory laparotomy was therefore performed on March 2nd. A quarter of a grain of morphia was given half an hour previously to the operation, the anæsthetic being chloroform followed by ether. An incision was made in the mid-line below the umbilicus, and on inserting the hand into the wound an elastic tumour was felt almost in the mid-line extending upwards a considerable distance out of the pelvis. The wound was rapidly enlarged above the umbilicus and a huge intussusception thus exposed taking the form of a compressed U, involving the greater part of the colon, the proximal limb having a semi-solid elastic consistency, the distal portion being empty, stretched, congested, and at the same time thickened colon turning up towards the splenic flexure. An attempt was now made to reduce the intussusception by manipulation, and we succeeded after much trouble and loss of valuable time in unravelling all except 4 inches about the ileo-cæcal junction. The colon unravelled in this manner was found to have an unusually long and thickened mesentery—in fact, all the parts involved were so very much swollen, congested, and ragged from tearing adhesions during the separation of the parts that I determined to resect the whole of the damaged part, in all about 4 ft. 2 in., comprising 2 ft. 3 in. of small bowel and 1 ft. 11 in. of large. The divided ends were then closed and a lateral anastomosis was made between the ileum and the pelvic colon. The wound was sewn up in layers, and the patient returned to the ward just under two hours from the beginning of the anæsthetic. He received about three-quarters of a grain of morphia during the first 48 hours after the operation for the purpose of diminishing peristaltic movement of the bowel. His recovery was rapid, without any complications, and excellent in every way. His bowels moved naturally on the fourth day. He left hospital on March 26th, and he is now able to follow his usual occupation.

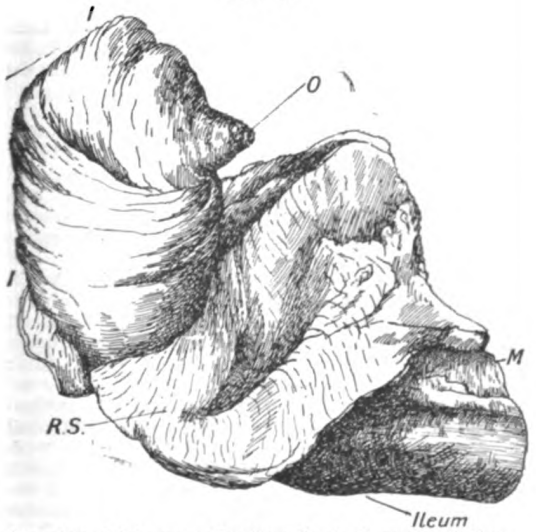
Pathological Report.

On cutting open the resected gut the apex of the intussusception was found to taper off on its internal lateral aspect in a marked conical projection overhanging the ileo-cæcal valve, but not blocking it, having a central aperture which admits a fine probe a distance of about half an inch. I concluded at first that this must be a partial inversion of the appendix. The actual condition is well shown in Figs. 1 and 2, views respectively from the anterior and internal lateral aspects of the specimen. A coronal section (Fig. 3) was made, fortunately bisecting the appendix and showing its relation to the small and large bowel. The specially striking features relating to the appendix are thus seen to be: (1) the occlusion of the lumen with the exception of a cystic space at the tip; (2) the mucosa is more or less destroyed and replaced by fibrous tissue which similarly fills in the lumen; (3) a prolapse or pouting of the mucous membrane at the base forms the conical projection into the colon already mentioned, and contains what remains of the appendical canal—there is just a suspicion of a partial inversion of the muscular coat also at the inner angle of this basal part; and (4) dimensions of appendix—length 3½ in., of which ¾ in. inverted, greatest

diameter ⅜ in., narrowest diameter ¼ in., distance between orifice of appendix and ileo-cæcal valve ⅜ in. One other point of importance is shown—namely, that the peritoneum has been stripped away from the caput coli and has become adherent to the appendix, the intervening space being filled in with a honeycombed arrangement of fibrous tissue, the meshes of which are occupied by a dark brown substance, apparently organising blood clot.

The above pathological data are most interesting, in that they give the clue to the origin and sequence of events described in this youth's case. From the thickened fibrotic and cystic condition of the appendix one may surmise that a previous subacute inflammatory state was actually in process when he strained himself on Jan. 11th. The condition then became suddenly intensified, giving rise to the severe pain at the pit of the stomach, which I regard as his first symptom—that is, an acute attack provoked in a chronically diseased appendix. The actual cause of the sudden pain can be ascribed to the trauma of the violent muscular exertion whilst lifting, which in itself is an acknowledged cause of appendicitis, possibly causing destruction of adhesions by pressure or compression, and thus a fresh involvement of the peritoneum (Lennander) or stimulating a spasm of the muscular wall of the appendix leading to referred pain (J. Mackenzie).

FIG. 1.



Drawing of intussusception from front, shown by slitting below along anterior longitudinal band. I.I, Intussusceptum, mucous lining of inverted cæcum and colon exposed. R.S., Reflected sheath, inner aspect. M, Mesentery. O, Orifice of appendix.

As the cyst was at the tip and well shut off from the root of the appendix by intervening fibrous tissue the most likely site left for a fresh inflammatory outbreak would be the base where the mucosa is still existent. The result of the reaction consequent upon an increased exudation would be swelling of the mucosa towards the lumen of the cæcum. The base of the appendix, being already in a fibrotic condition, would block further exudation in that direction, and thus we have produced the cone-shaped projection which is practically the origin of the so-called inversion of the appendix.

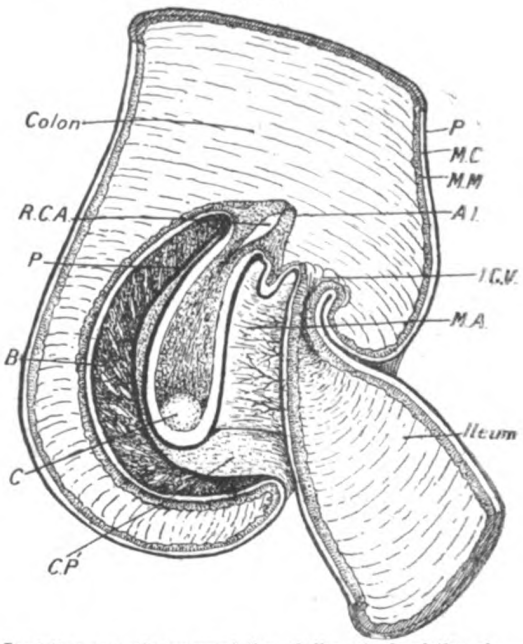
But there is more to explain. The appendix on one side has become adherent to the caput coli, presumably from an extension of the inflammatory process from the interior of the base of the appendix to the adjacent peritoneal coverings. This should tend still further to bulge in the cæcal wall and intensify the inversive movement. Again, as a consequence of more violent muscular contractions, the peritoneal coat of the cæcum, which is now glued to the appendix, has separated and a hæmatoma formed, thus creating a large polypoid mass protruding into the colon above the ileo-cæcal valve. In this manner there is produced a pedunculated tumour in the colon.

Now, tumours of the intestine are a comparative frequent cause of intussusception in the adult, and here we have a complex tumour-like mass, in itself capable of stimulating extra violent contractions of the bowel, more or less blocking the ileo-cæcal valve, and thereby tending to stimulate further contractions. One other condition must not be forgotten as

FIG. 2.

Internal lateral aspect, showing relation of appendicular projection to ileo-cæcal valve. L.A., Lumen of appendix. I.C.V., Ileo-cæcal valve. I., Intussusciens (colon) turned back.

FIG. 3.



Semi-diagrammatic representation of the actual relation of the parts in the intussusception on coronal section. R.C.A., Remains of canal of appendix. P., Reflected and separated layer of peritonem detached from cæcum by organising blood clot, B. C., Cystic space at tip of appendix. C.P., Cæcal peritoneum stripped from muscular coat. M.A., Mesentery of appendix. I.C.V., Ileo-cæcal valve. A.I., Apex of intussusception. M M., Mucous membrane. M.C., Muscular coat. P., Peritoneum.

a very important predisposing cause in this youth's case. I refer to the unusual mobility of the colon owing to the presence of a long meso-colon, so that there was practically a combination of pathological, physiological, and anatomical influences favouring and accelerating the formation of the intussusception.

Since I have been writing up this case Eliot[3] and Corscaden have published their paper on Intussusception in Adults, and they have tabulated brief case histories of some 300 cases. Eighteen of these only are chronic with a known cause, and of these, the only one I have noticed similar to my own is the often-quoted case of Haasler,[4] although in their list are many others suggesting comparison. Haasler's patient was a woman, aged 42 years, with a prior history of trauma followed by severe vomiting. Upon this ensued acute pain about the navel extending to the right iliac fossa. Three weeks later a lump was felt, and attacks of griping pain then occurred at intervals for six weeks, the patient becoming markedly emaciated and constipated. A provisional diagnosis of carcinoma of the colon was made. At the operation a resection of the bowel was performed, and the specimen showed the appendix to be invaginated and forming the apex of the intussusception. Its lumen contained a small amount of fæcal material, and it (the appendix) "seemed not unlikely to be the starting point of the difficulty." Unfortunately, there is no detail as to the extent of the invagination, or whether one or all the coats were involved.

Rolleston's[5] case is the only one in which the prolapse of the mucous membrane of the appendix into the cæcum has been described as far as I am aware; but this was caused by a concretion. Dodds Parker[6] has communicated notes of a case of inversion of the appendix in a woman, aged 43 years. The appendix was microscoped and showed an inflammatory state. In this instance several round worms were found in the alimentary tract. He suggests that one had penetrated the appendix, thereby setting up inflammation, and the inflamed appendix had acted as a polyp, causing invagination and obstruction. Greer[7] gives an excellent description of a case in a child, and, judging from his illustrations, his and my specimens are very much alike. He suggests that the appendix was partly invaginated first, thus exciting the cæcum to contract, but he failed to find any evidence inciting the primary invagination of the appendix. I am emboldened to think that this inversion is possibly mucosa only, resulting from inflammatory action with or without the discharge of a concretion.

My object in quoting these several cases of intussusception of the appendix has been to bring out other evidence to bear on the suggestion that there may be some connexion between appendicitis and intussusception. Under certain conditions an attack of appendicitis may, as in the way described, give rise to the formation of an intussusception, and I believe that as more care is devoted to the investigation of such tumours both by the clinician and the pathologist, the appendix will be found to be the *fons et origo mali* in some, if not in most, of those cases that have hitherto been described as intussusceptions of the ileo-cæcal variety.

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Burnley.

FOREIGN BODIES IN THE VERMIFORM APPENDIX.

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SINCE the true nature of concretions in the appendix has been demonstrated, very little attention has been paid to the presence of foreign bodies in the appendix, and a certain number of the profession are inclined to be rather sceptical about them. If, however, a careful examination be made of the fæcal concretions which are so constantly present a foreign body will be discovered in a fair proportion of cases. Although I have never discovered a cherry-stone in the appendix, I have found various other bodies. In some cases these bodies have been free in the appendix and not associated with any fæcal concretion; in the majority of cases, however, the foreign body has formed the nucleus of a concretion. Some of the foreign bodies have been found outside the appendix in an appendix abscess; notable among these were two cases in which the appendix was found to be perforated, and a pin was found loose in an appendix abscess.

In three cases a round shot, such as is used for sporting purposes, was found in the appendix without any concretion and without any sign of inflammation, the operation having been done for symptoms of appendicular colic. In another case a triangular piece of glass, about ¼ in. wide at its base, was found in the appendix without having produced any signs of inflammation of the serous coat, although the mucous membrane was ulcerated. In two or three other cases, where the appendix was apparently normal, fragments of egg-shell were found, and in others fragments of enamel from a saucepan were discovered.

In the second group a foreign body formed the nucleus of a definite concretion or was imbedded in soft fæcal material. A variety of foreign bodies were found, among which the most interesting were hairs. In two cases hairs had evidently been derived from a tooth-brush. In three cases hairs from a camel hair brush have been found, and in these cases I was able to elicit from the friends that the patients had recently been painting and had sucked their paint-brushes. In two or three other cases hairs were found, which most probably were human hairs and had been swallowed accidentally. In all these cases there were signs of more or less severe inflammation about the appendix previous to operation.

In another group of cases seeds form the nucleus of the concretion, the most common seeds being those of strawberries, raspberries, and figs. In a recent case at least 20 fig seeds were found in a soft concretion in the appendix. Grape seeds have also been found in two cases. In one case the nucleus of the concretion was found to be a thorn probably from a rose tree.

I am unable to give any accurate statistics, but my impression is that a foreign body has been found in about 20 per cent. of the appendices which I have removed. The interesting point is that a foreign body by itself sets up very little irritation, and does not produce acute inflammation; it is only when a fæcal concretion forms around it that acute appendicitis will occur. According to many authorities no foreign body or fæcal matter can enter a healthy appendix, and it is stated that some previous inflammation must occur in order to make it possible for the body to enter. If this is the case, a foreign body by itself could not have very much influence in producing appendicular disease. It is, however, more reasonable to suppose that the irritation of the foreign body excites an extra secretion of mucus, which is deposited upon the body, producing the concretion, and so becomes the starting-point of an attack of appendicitis.

Upper Wimpole-street, W.

A CASE OF ERYSIPELAS COMPLICATED WITH MENINGITIS FOLLOWING AN INTRA-NASAL OPERATION; RECOVERY.

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THE patient, a healthy young man, aged 27 years, who suffered from symptoms of nasal obstruction which were not very severe, consulted a London laryngologist, who recommended a submucous resection of the septum. This was done on a Saturday in a nursing home, and on the following Monday the patient travelled to Brighton by train. He was advised by the operator not to leave the home so soon, but no special pressure was brought to bear upon him to induce him to remain longer. On the following Wednesday the patient was suddenly taken ill with symptoms of severe pyrexia, the temperature being 105° F. The only local sign detected was a slightly inflammatory condition of the interior of the nose in the neighbourhood of the operation.

The inflammation spread backwards, and soon the whole pharynx was involved in an attack of erysipelas. This began to subside in a few days, and then the inflammation spread forwards, extended rapidly, and soon the whole face and scalp were covered with the characteristic lesion of erysipelas. The patient appeared to be doing well, when suddenly he was seized with maniacal symptoms, convulsions starting in the right hand, spreading up the arm, and then becoming generalised, conjugate deviation of the head and eyes to the right, strabismus, rigidity of limbs, loss of reflexes, and finally coma, almost complete. Dr. E. Hobhouse, who saw the patient with me, agreed with the diagnosis of meningitis. Up to this time the treatment consisted of the administration of liquor ferri perchloridi, plenty of liquid nourishment, antiseptic gargles and sprays to the throat and nose, and careful nursing. Polyvalent antistreptococcic serum in 10 c.c. doses was now injected every six hours. Sir Victor Horsley saw the patient at this stage and agreed with the diagnosis and treatment. He was able to examine the fundi by means of the new Thorner's reflexless ophthalmoscope, an impossible task with any ordinary instrument. He found evidence of early optic neuritis. He gave a very grave prognosis indeed. Twenty-four hours later improvement began to set in. Consciousness was gradually regained, convulsions ceased, all the rigidity disappeared, the temperature fell to normal, and in about four days the patient was quite well, with the exception of very marked muscular weakness and paralysis of bladder and rectum, causing incontinence of fæces and retention of urine. It was necessary to pass a catheter every few hours. These symptoms gradually cleared up, first the rectal paralysis in about one week, then the bladder trouble a little later. The patient was quite convalescent in about six weeks after the onset of his illness.

There are several points of considerable interest in connexion with this case. Firstly, the recovery of a patient with meningitis complicating erysipelas is extremely rare. Sir Victor Horsley has never seen a case, and I am unable to find any record of one. Sir William Gowers[1] states that: "In any form [of meningitis] if the stage of coma has been reached, death is all but certain." I do not think the diagnosis can be questioned in the face of the symptoms, and of the opinions of Dr. Hobhouse and Sir Victor Horsley.

Secondly, did the antistreptococcic serum have any influence on the result? I confess I have always been very sceptical as to the value of the majority of the various sera so much employed in disease. I used it in this case when meningitis supervened only because I thought it wrong to neglect anything that might conceivably aid recovery, not that I had any real hope from it. Certainly the symptoms seemed to improve after the injections, but I am still left in doubt as to whether it was a case of *post* or *propter hoc*. I might mention that Sir William Whitla[2] makes no reference to the serum treatment under "Erysipelas."

Thirdly, this case raises a very important question, and that is the justifiability of intra-nasal operations for trifling defects. I believe that many nasal specialists are apt to advise such procedures as straightening of deflected septa, removal of turbinate bones, &c., far too readily. The symptoms, if any, caused by a slightly deflected septum, or a moderate enlargement of turbinate bones, are very unimportant, often non-existent. The risks of operation are large, much larger than the operators are inclined to recognise, and I am firmly of the opinion that intra-nasal operations are absolutely unjustifiable unless definite and marked symptoms are caused by the condition of the nose. The case recorded above supports this opinion, and in addition I have just seen a girl of 13 who nearly bled to death after the removal of turbinate bones by a well-known London specialist, the operation being performed under ideal conditions in a nursing home. I know this view is held by men of considerable experience in this town, who have come across many cases in which the patient has been very ill and run considerable danger to life after intra-nasal operations. One of the risks which it would be well for operators to recognise more fully is that run by allowing patients to be up and out travelling directly the operation is performed. The danger of sepsis is great. There is a raw surface in the nose over which air laden with micro-organisms is continually being drawn, and in cabs, railway carriages, &c., there must be great probability of pathogenic germs being present and infecting the wound.

Hove, Brighton.

[1] Diseases of the Nervous System.
[2] Practice of Medicine, 1908.

SOME CLINICAL OBSERVATIONS UPON

SEPTIC INFECTIONS OF THE HANDS AND FINGERS.

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THE hand is probably as commonly infected by pyogenic organisms as any other part of the body. The result of septic infection may prove so disastrous to its mechanism that the ability of its possessor to follow his avocation may be very seriously impaired and in some cases absolutely denied to him. The realisation of these facts has prompted the recording of some personal observations made upon 511 consecutive cases of septic infections of the hand and fingers which applied for treatment, and were operated upon at St. Mary's Hospital. No exhaustive study has been made of the different methods of treatment which have been advocated, nor of the modes of spread of infection in the hand. This has been very thoroughly done in the papers published by Kanavel.[1] Some conception has been gained, however, of the frequency of infection of the different structures in the hand and of the commoner results of it, whilst certain ideas have been formulated as to the best methods of applying well-established surgical principles.

For clinical purposes it is convenient to separate the infections into: A, Those which involve the fingers or thumb distal to their webs, and B, those which affect the hand between the level of the wrist-joint and the level of the webs of the fingers.

A. *Affections of the Fingers.*

The pus which results may be (1) subcuticular or subungual; (2) subcutaneous; (3) thecal; and (4) subperiosteal.

Subcuticular whitlows present no difficulties in treatment, and have only been included in this series if they were accompanied by infection of deeper parts. In the treatment of subungual panaritia it has been found best to remove the whole of the nail as soon as there is any pus at all between the nail and its bed. It is only by such immediate measures that we can be certain of avoiding marked deformity of the nail which subsequently grows. Removal of a portion of the nail when the pus is limited to one lateral half is unsatisfactory. Granulations grow up from the nail bed along the cut edge of the segment of nail which has been left, and help to look up pus under this portion, with the result that frequently in the end the remnant of nail has to be removed, whilst a certain preventable destruction of the nail-bed may have occurred in the interval.

Subcutaneous whitlows are the commonest whitlows met with in the fingers—much commoner than thecal whitlows. The tendon sheaths have been observed to become infected by extension from the subcutaneous tissue of the finger where resort to the knife was refrained from. It appears probable that primary infection of synovial sheaths is uncommon, and the pain of the inflammation in the more superficial structures drives the patient to the surgeon before extension to the tendon sheaths has taken place. Incision in such cases, if sufficiently free, almost invariably prevents them becoming involved, provided the patient can get plenty of nourishing food and can live under hygienic conditions. No one can for long treat such suppurative conditions as are met with in hospital clinics without being profoundly impressed by the powerful influence which proper feeding exerts upon the defensive mechanisms of the body. A large percentage of the cases which get worse in spite of treatment, hesitate in the course to recovery, or relapse, are found, on investigation, to be unable to obtain a sufficient supply of good food, and to live under conditions of overcrowding or other unfavourable hygienic circumstances. Their rapid march to recovery on a "feeding up" diet in hospital amply testifies to the same fact. Other of these cases are the subjects of some constitutional disease. Diabetes is well known to

[1] Allen B. Kanavel: Surgery, Gynæcology, and Obstetrics, September, 1905, November, 1907, January and February, 1909.

predispose to septic infection, but chronic Bright's disease also interferes with defensive and reparative work.

Infection of the tendon sheaths can usually be easily diagnosed before incision. In the case of the subcutaneous whitlow flexion and extension, to some extent at least, are usually possible without great pain. In a thecal panaritium there are extreme tenderness and pain, often localised to one point, and any attempt at extension or flexion of the finger markedly aggravates the suffering. The finger is held rigidly flexed. The synovial sheaths in connexion with the tendons of the little finger and the thumb extend upwards and are continuous with the great anterior carpal synovial sac. Yet involvement of this sac in a thecal panaritium of the thumb or little finger is not common. It only occurred once in this series, and in that case it was of a mild type. When extension takes place to the synovial sheath of a finger the infection is at first confined to one part of the membrane. Round this focus fibrinous adhesions form between the synovial sheath and the tendon, which tend to limit the infection in much the same way as inflammation in the peritoneal cavity becomes circumscribed. This accounts for the *localised* tenderness in a thecal panaritium. If incision is made early extension to the rest of the sheath is prevented. It is not safe, however, to make only a local incision, for with the relief of tension the tendon may be moved in its sheath, and by this means spread the infection to its hitherto unaffected parts. In two cases in this series a stiff finger followed an attempt by limited incisions to preserve the fibrous sheaths where they are opposite the joints of the fingers, a procedure recommended by Kanavel. The infection spread, and in each the flexor tendons sloughed. After a free incision the results are good, and in most cases a moveable finger is obtained. There need be no hesitation in making the incision long and in making it deep.

The subperiosteal whitlow is most commonly seen in the case of the terminal phalanges. Necrosis in the terminal phalanx is common; necrosis in the case of the other bones, unless it occurs as a complication of septic arthritis, when it involves the ends of the bones, is quite rare. If a portion of the terminal phalanx is necrosed a persistent sinus remains, until the sequestrum separates off, and is removed or spontaneously extruded. If the sequestrum has not come away in eight weeks from the time of infection it is advisable to operate. Unless there is a large sinus on the anterior aspect of the terminal phalanx, the sensitive and useful pulp of the finger should be preserved by making antero-posterior flaps, so as to thoroughly lay bare either the anterior or posterior aspect of the terminal bone. A scar in the pulp of the finger is thus avoided. The sequestrum may then be easily separated, or if the whole phalanx be discovered dead it must be removed. This is a very satisfactory procedure, although the pulp subsequently shrinks, and the nail comes to grow over the end of the finger somewhat. In one case, a pianist, the whole of the terminal phalanx, except the extreme base and the articular cartilage, was found to be dead and separated. It was removed. Some movement was retained in the end of the finger, and she was able to play with some skill. Usually, however, the end of the finger is stiff, though it becomes sclerosed and feels almost bony. In such cases it seems that the periosteum of the phalanx on the side opposite the seat of infection has escaped. The operation should always be done with an elastic ligature around the base of the finger. A local anæsthetic has not been definitely proved to delay healing, but general narcosis is preferred.

Another result of deep infections of the finger is a septic arthritis of one of the joints. Very frequently, because the joint involvement in not recognised, the capsule is allowed to perforate spontaneously, instead of being surgically opened. By this time, too, the articular cartilage has usually been irreparably destroyed. The finger, however, frequently heals up, and there is left an abnormally mobile grating joint. With the lapse of time the joint in most cases becomes absolutely stiff. Excision of such joints often leads to no better results, for fibrous ankylosis and adhesion of the tendons produce a stiff finger. In one case such a joint (the metacarpo-phalangeal joint of the little finger) after complete healing of the wound for three weeks, became inflamed again, and an abscess formed round it. An incision was made along the ulnar margin of the joint towards the dorsal surface. The tendons were displaced. The proximal end of the basal phalanx was found to be necrotic and was sawn off, leaving a surface of healthy bone. The cartilage of the head of the metacarpal was almost completely eroded away. The necrotic area was thoroughly scraped. Sterilised vaseline was then interposed between the ends of the bones and the tissues sewn around them. The wound was closed without drainage. A small sinus formed, but soon healed, and a moveable joint resulted.

B. *Affections of the Hand.*

In the 511 cases operated upon there were 60 cases in which the infection was situated in the hand between the level of the wrist-joint and the webs of the fingers. Only four of these were primarily infected on the dorsum. Of the 56 cases infected on the palmar surface, in 20—i.e., 36 per cent.—the infection was localised in the first interosseous interval or the thenar eminence. This can be explained by the fact, as Sappey[2] has shown, that the lymph from a large area of the central part of the palm is conveyed by a collecting vessel across the first interosseous space, where it passes on to the back of the hand and runs upwards on the dorsum. These thenar abscesses are very common. The pus has little tendency to spread inwards to the central compartment of the palm, but spreads with great ease downwards under the lower border of the adductor transversus pollicis, and between the first and second metacarpal bones, to reach the dorsal aspect of the first interosseous space. A simple incision which runs parallel to the direction of the second metacarpal bone, but nearer the thumb than the index finger, so as to avoid the superficialis volæ, is usually sufficient to cure these thenar abscesses. The incision may often be prolonged with advantage on to the dorsum.

Abscess in the central compartment of the palm is uncommon (only four cases in the above series), and this, perhaps, is to be attributed to the fact that the strong central portion of the palmar fascia offers great resistance to the passage of the pus backwards. In the lower part of the palm, however, between the digitations of the palmar fascia which go to the fingers infection can easily pass backwards between the heads of the metacarpals and along the lumbrical muscles to the back of the hand. This is the usual manner in which infection spreads to the dorsum of the hand. When the central compartment of the palm is infected the interossei and the fascia covering them seem to offer much resistance to the backward passage of pus.

In making incisions into the palm the positions of the palmar arches and digital arteries must be borne in mind. General anæsthesia is employed and a tourniquet applied to the upper arm. This is very important, for with a bloodless field one can cut through the palmar fascia and expose important structures, a much freer opening into the abscess cavity by this means becoming possible. One cannot mark out with absolute precision on the surface sites for incision so that no damage may be done to palmar vessels or nerves. It is never necessary, bearing in mind the path of spread to the dorsum, to insert a tube between the metacarpals providing through drainage. The primary incision should be carried downwards towards the web, and a separate dorsal incision made if necessary. The operation should be done speedily. It seems unwise to deprive already infected and damaged tissues of their blood-supply for more than a short time.

The complications, axillary adenitis or lymphangitis, severe enough to necessitate incisions, are rare if the primary infections are adequately treated in an early stage. In only two of the 511 cases did axillary adenitis proceed as far as pus formation. There were two cases of abscesses in the forearm. They occurred in weakly children in a neglected condition. Amputation of a finger was never resorted to.

St. Mary's Hospital, W.

[2] Cunéo and Poirier: Lymphatics, translated by Cecil Leaf.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Edward Snape Grigson King Edward VII. Hospital Fund will receive £2000.—The late Mr. A. Hogg Nasmyth bequeathed £1000 each to the Edinburgh Royal Infirmary and the Dunfermline and West Fife Hospital; £500 each to the Edinburgh Royal Blind Asylum, the Edinburgh Deaf and Dumb Benevolent Society, the Royal Edinburgh Hospital for Sick Children, the Royal Edinburgh Hospital for Incurables (the Longmore Hospital), and the National Society for the Prevention of Cruelty to Children.

A CASE OF CONGENITAL ATRESIA OF THE DUODENUM.

BY W. FRANCIS ROE, L.R.C.S.I., L.M., L.R.C.P.I., L.M.,

AND

ERNEST H. SHAW, M.R.C.P. LOND., M.R.C.S. ENG.,

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Clinical History (W. F. R.).—On Wednesday night, Nov. 4th, 1908, I was sent for to attend a married woman, aged 36 years, in her third confinement. On my arrival I found that she had given birth to an apparently healthy and well-formed male child. She had had an easy labour, and did not trouble to send for the nurse till about an hour before the baby was born. On the occasion of my daily visits no complaint was made to me, either by the mother or the nurse, as to anything abnormal about the baby, except that he did not seem very keen on taking the breast. On Sunday (the 8th) the mother told me that the baby brought up his milk and some "brown stuff" The boy looked quite happy, and I did not take much notice of the fact that he had brought up his milk, nor did I see any of the "brown stuff" which was alleged to have been vomited. The father came to me on Monday morning at 9 20, and told me that the child had suddedly died half an hour before. During the previous day, after my visit, and through the night the child had vomited a considerable quantity of brown material, and continued to pass black motions from the bowel. On going to the house I found the child dead, and its face and clothes stained with a brown fluid which had apparently come from the mouth. The napkin contained meconium. As I was at a loss to know what to certify as the cause of death I obtained permission to perform a necropsy.

The child was well developed and showed no external signs of disease except that the abdomen was rather distended and hard. The lungs and heart were normal. Upon opening the abdomen a distended stomach was found to be filling up that cavity; it had apparently an hour-glass constriction towards the pyloric end. The stomach contents consisted of a quantity of "brownish black" fluid material. The intestines had not been distended. The other organs were normal.

Specimen (E. H. S.).—The specimen consists of the stomach and duodenum of an infant; it was stuffed with cotton wool, and hardened in as near the natural shape of the viscus as could be made out. At first sight there appears to be a large stomach with a deep constriction at about the junction of the proximal two-thirds with the distal third, the œsophagus entering the organ in its natural position and at the other end a narrow tube leaving the middle of a blind and bulbous extremity. On further examination, however, the constricted portion is seen to be the pylorus, a well-marked muscular ring about half an inch wide representing the pyloric sphincter. The dilated part distal to the pylorus is the duodenum, which gradually expands to a tube 1½ in. in diameter and then rather abruptly terminates. The lumen of the duodenum is completely lost at this point, and no dimple or pit can be made out in the mucous membrane. Projecting from the outside of this blind end is a narrow tube with a thin wall, and a lumen about ¼ in. in diameter. The mucous membrane of the tube is irregularly folded. There is a very slight constriction externally at the junction of the two parts. The appearance presented by the narrow tube projecting from the dilated proximal part of the duodenum somewhat resembles that of a vermiform appendix arising from the cæcum. The dilated duodenum is covered with peritoneum near the pylorus only. The lining membrane is quite smooth; this is in marked contrast with the lining membrane of the stomach, which is thick and thrown into well-marked folds. A narrow bile-stained duct enters the wall of the duodenum behind just at the commencement of the narrow part. A bristle can be inserted into the tube, but cannot be made to enter the lumen of the bowel. This is evidently the common bile-duct. A passage must have existed during life, because meconium was present in the intestines, but owing to shrinkage it has become difficult to demonstrate. A second minute tube by the side of the first one apparently represents the pancreatic duct. A bristle can only just be inserted into this opening and cannot be passed into the duodenum.

Just inside the pylorus there is a narrow, deep, and slit-like pit about 5/16 in. long by 2/16 in. deep; it is placed at right angles to the long axis of the pylorus, and separated from the beginning of the duodenum by a bridge of mucous membrane about 1/8 in. wide. A piece has been cut out, and the mucous membrane can be seen dipping down into the pit and covering its depth. The sectional view of the depression reminds one of a similar section through the laryngeal ventricle. The pyloric sphincter is about 1/8 in. thick; it ends abruptly at the duodenal junction, but fades off gradually towards the cardiac end of the stomach. The stomach is much enlarged and its walls hypertrophied. Measurements along the curvatures work out as follows: lesser curvature, 2½ in. from œsophagus to pylorus; greater curvature, 7 in.; depth from lesser to greater curvature, 1¾ in. The measurements of the dilated duodenum are: 2 in. along the upper border from pylorus to the constriction, and 3½ in. along the lower border between the same points.

Microscopic examination—(*a*) *Pylorus and adjoining duodenum*—Well-marked bundles of unstriped muscle with a lining of ordinary mucous membrane. There are numerous scattered large glands beneath the muscularis mucosa of the duodenum (Brunner's glands). The cells of the glands are tall and columnar in shape.

(*b*) *Pouch in pylorus.*—The mucous membrane on either side of the depression is thick and well formed. At the bottom of the pit the orifice of a large branched duct is seen lined by columnar cells. Around this duct there are large irregular collections of gland tissue; some of the groups are well defined and are oval and round in outline; on either side isolated glands are seen penetrating the muscular coat. The cells are columnar in shape, rather short, and contain large nuclei. They are shorter than the cells of the glands seen in the first section. Large numbers of small round cells are present in and around the groups of glands. The mass of glands appears to have penetrated the whole thickness of the muscular wall.

An interesting problem is presented by these glands. Are they Brunner's glands or an accessory pancreas? In favour of the first is the position of the glands; in favour of the second are the fact that they form a definite collection of lobules around a central duct and the gland cells are smaller than those seen in the first specimen, which are undoubtedly Brunner's glands.

The above are the facts; any opinion one may feel inclined to form one way or the other is purely speculative. Developmentally they are both offshoots from the intestinal glands. Brunner's glands stop short and scatter themselves beneath the muscularis mucosa. The pancreatic glands go right through and form a mass outside the wall of the intestine. The above collection may represent an exaggerated collection of Brunner's glands or a minute pancreas.

The specimen is a most interesting one and is rare. Professor Arthur Keith has investigated the literature of this malformation, and has succeeded in finding seven other specimens. He quotes Bland-Sutton's opinion that the occlusion is probably associated with the outgrowth of the embryonal cells of the liver and the pancreas. It occurs at the junction of the two morphological parts of the alimentary canal—the fore and mid gut. Forssner finds that the Vaterian segment of the duodenum is occluded by the proliferation of its epithelial lining during the greater part of the second month of development. The epithelial plug, failing to break down as development proceeds, leads to an occlusion of the bowel at that point. The specimen is now preserved in the museum of the Royal College of Surgeons of England.

THE "I.K." TREATMENT FOR TUBERCULOSIS.—In an annotation published in THE LANCET of Sept 16th, dealing with this subject, we omitted to mention that Dr. Carl Spengler's book is published by the Verlag von H Erfurt, Davos Switzerland, at the price of 12 marks. Its full title is, "Carl Spengler Tuberkulose- und Syphilis-Arbeiten (1890–1911). Herausgegeben von seinen Schülern und Freunden." Pp. 505.

Reviews and Notices of Books.

In and Out of Parliament: Reminiscences of a Varied Life. By the Right Hon. ROBERT FARQUHARSON, P.C., M.D., LL.D. London: Williams and Norgate. 1911. Pp. 338. Price 12*s.* 6*d.* net.

Dr. Farquharson has had a sufficiently varied career to afford ample opportunities for a many-sided view of life. This book discloses a sense of happiness bubbling over, an almost juvenile naïveté, and considerable sense of humour; moreover, it is written with, at times, unconventional frankness as to people and things, while treating the cherished convictions and opinions of many in a manner which, were it not for the obvious ingenuousness of the writer, would run perilously near arousing resentment.

The book is divided into two parts, in the first of which Dr. Farquharson describes his childhood and early education, and gives charming glimpses of Edinburgh life, especially university life, in the middle of the last century, with recollections of Goodsir, "Johnnie" Struthers, Gregory, Wilkinson, "Woody fibre" Balfour, Edward Forbes, Sir J. Y. Simpson, Bennett, John Brown, Syme, "Dismal Jimmy" Spence, Ghiene, Matthews Duncan, and others on the medical side; and Blackie, Aytoun, Chalmers, Lord Cockburn, Alexander Smith, and others on the academic side. "The physiology of those days," says Dr. Farquharson, "was not, as it has now become, a kind of blend of mathematical chemistry and mechanical engineering." The author tried his hand in art. To a description of his "hopeless struggle in pencil, chalk, and water colours" he adds a few sane reflections as follows: "But at the same time, I would advise everyone to learn to draw even a very little; for it steadies the hand and clears the vision, and enables us to look at nature with more pleasure, and with an observant and appreciative eye—and best of all, it helps us to enjoy pictures intelligently, because we can understand what artists are trying to do, what their aims are, and what their difficulties." Dr. Farquharson's life as an army surgeon, first in the Royal Artillery, and subsequently in the Coldstream Guards, and his career in civil practice, as medical officer to Rugby School under Dr. Temple, and subsequently as a London physician and lecturer at St. Mary's, afford ample opportunities for the introduction of piquant incidents and shrewd reflections. For instance, he relates how at Rugby, finding the well-known cricketer, Yardley, seedy, he was unable offhand to give a dogmatic opinion as to the nature of the illness. "On which," he says, "I was summoned to Jove's awful presence, and the head master, in his most abrupt and grating tones, snapped out: 'You damage yourself by want of decision.'" This represents only too well the mental attitude of a certain portion of the public, particularly of those who are, or at some time have been, men in authority, an attitude which puts an unfortunate premium upon ignorant dogmatism. Concerning this period of his life the work abounds in reminiscences of Sir William Gull, Sir William Fergusson, Sir William Jenner, Sir Andrew Clark, Sir Spencer Wells, Mr. Ernest Hart, and other well-known personages in medicine, not to mention many dramatic, musical, and other celebrities. In the course of his army career Dr. Farquharson was stationed in Dublin, and he speaks of the wonderful amount of very high-class work turned out of the Dublin hospitals and medical schools.

In 1878 Dr. Farquharson succeeded his father as the Laird of Finzean, Aberdeenshire. "The succession to a property in the north," he says, "is rather a serious matter. To begin with, the executors grab the first year's income, so that during that period the heir, perhaps to a large income, has practically to live on nothing. Then the younger children, under the law of entail, are officially provided for, by intercepting, according to numbers, two or three years of gross rental; and finally comes the succession duty, which, though then mild compared to Harcourt's death duties, meant a considerable money payment at a most inconvenient time." The later chapters of the first part are occupied with shrewd observations of men and things as they appeared to the author at Rugby, abroad, and in London, to which are added some interesting notes on Aberdeenshire people and the Free Church.

Part II. is concerned with Dr. Farquharson's Parliamentary career as Liberal M.P. for West Aberdeenshire, which covered the period between 1880 and his retirement in 1906. He was a keen admirer and a loyal follower of Gladstone, whom, nevertheless, he seems to have regarded with some awe, for he contrasts the latter's lofty and abstracted demeanour with "the gracious smile and pleasant words of friendship" of Disraeli. He describes with considerable humour the process of electioneering and the details of life about the House; but in a chapter on Parliamentary scenes the curtain is lifted on certain phases of what may be called the business of politics that hardly tend to inspire respect for the political career or politicians generally. It is only too evident that the quest and retention of power bulks altogether too large among politicians of all kinds in proportion to the conscientious sense of responsibility for the welfare of the country as a whole. There are many interesting anecdotes and character impressions in the chapter on the author's political contemporaries. There is little of medical interest in this part of the book, and we look in vain for any review of the measures of medical concern that engaged the attention of Parliament while the author sat there to lend the weight of professional opinion to the debate, which, we believe, it is generally conceded that he did in a creditable manner. In the chapter on health and teetotalism he refers to golf as follows: "I envy those who have fallen a victim to its fascination, for to me it is the most irritating and even exasperating of all sports; and I was very glad when THE LANCET uttered some words of much needed warning to over-tired and worried people who tire and worry themselves a great deal more in vain efforts to acquire even a moderate proficiency in a game of such elusive and uncertain quality. ..." He has a few words on over-dining, over-smoking, the "jaded Londoner," and the use of alcoholic beverages.

Dr. Farquharson is no devotee of intemperate temperance. Speaking of those who tell us "that every drop of drink is a slow poison" he says: "If any of these well-intentioned but mischievous folk—for whom I cannot withhold a kind of sneaking respect—ask my reasons for taking a cheerful glass my answer always is the same: 'I drink because I like it'; and then there is not another word to be said" It is to be feared that this would only change the field of debate to "a hundred and one reasons why you ought not to like it." There are several excellent photographs in the book, most of them portraits of the author; but here his sense of humour precludes the appearance of egotism, in that five of them are reproductions of clever caricatures by Harry Furniss, Leslie Ward, and E. T. Reed, all equally redolent of kindly raillery.

Those readers who do not know Dr. Farquharson will surely find much to interest and amuse them in this book; while those who do know him will find the fount of their affectionate regard well up.

Klinische Pathologie des Blutes nebst einer Methodik der Blutuntersuchungen und Spezieller Pathologie und Therapie der Blutkrankheiten. Von Dr. ERNST GRAWITZ, Professor an der Universität zu Berlin. Mit 45 Figuren im Text, 6 Tafeln in Farbendruck und einer Tafel mit mikrophotogrammen. Vierte vollständig neu bearbeitete und vermehrte Auflage. Leipzig: Georg Thieme. 1911. Pp. 1011.

IN reviewing this truly colossal work on a subject of which but a few years ago all that was known could have been put into a few pages, we may well start by expressing our regret at the death of its author, an extraordinary professor of medicine in the University of Berlin and director of the medical department of the Charlottenburg Hospital (as chronicled in THE LANCET of August 5th). The book is dedicated to the author's brother, Professor Paul Grawitz, the pathologist of Greifswald.

In the whole story of the doctrine of the origin of the blood cells, the author thinks the most important point is that their origin is not confined exclusively to red marrow, spleen, and the lymphatic system, but that the white cells especially have a nearly ubiquitous origin in all tissues of the body under different forms of stimuli, so that, as far as leucopoesis is concerned, we have returned to views enunciated independently by Paul Grawitz and Stricker from 20 to 30 years ago.

Part I. deals with the methods of investigating the blood—how to obtain blood for histological and bacteriological purposes; and a full account is also given of physico-chemical methods. The whole occupies 79 pages.

Part II., on the physiology of the blood (pp. 79–304), deals successively with physiological changes due to age, sex, pregnancy, period of day and year. Individual differences, the total quantity of blood and its viscosity, changes produced by vaso-motor influences, blood coagulation and its relation to hæmophilia are all considered. Then follows a description of the formation of red blood corpuscles during fœtal and extra-uterine life, with a very full account of the red cells of human blood, under such heads as their form, functions, structure, pathology, and hæmoglobin content. Megalocytes, microcytes, and poikilocytes, the different relations to staining reagents, and how long they live and how they disappear in the circulation, come in next for notice. To the leucocytes, apart from their sources, about 50 pages are devoted, while leucocytosis occupies about 30 pages, and is dealt with in its physiological forms—e.g., the digestive and myogenic—as well as those forms occurring during and after pregnancy, and in the new-born and at death. The pathological forms are classified as post-hæmorrhagic, inflammatory, cachectic, and toxic. A short chapter on the blood platelets follows. These, the author asserts, arise chiefly, but not exclusively, from the nuclei both of the red and the white corpuscles.

Part III. (pp. 305–696) deals with anæmic conditions, under such headings as anæmias in general, transfusion of blood, pernicious anæmia, chlorosis, leukæmia, and pseudo-leukæmia. This is a most comprehensive and detailed survey.

Part IV. occupies about 300 pages and deals with clinical serology (part of this is written by Dr. Werner Schultz), precipitins, hæmolysins, agglutinins, the side-chain theory, opsonins, anaphylaxy, anti-ferments, and kindred subjects. A very interesting chapter on blood poisons follows. The blood in constitutional diseases, and diseases of the digestive, circulatory, respiratory, nervous, and renal systems, is successively dealt with. Infectious diseases and animal parasites come next, and the end is reached with a short discourse on carcinoma and other malignant new formations.

We have contented ourselves with giving the scope of the author's work, which is truly comprehensive. It is at once a quarry and a treasury, and when we add that there is an abundance of references to the literature of the subject the work cannot fail to prove to be of great utility to, and a comprehensive source of reference for, the physiologist, pathologist, and clinician.

Methodik der Klinischen Blutuntersuchungen. Von Professor Dr. ERNST GRAWITZ zu Berlin. Mit 35 Figuren im Text und 6 Tafeln in Farbendruck. Fourth edition. Leipzig: Georg Thieme. 1911. Pp. 79.

THIS is a reprint of the first 79 pages of the author's large work, and the plates are the same. On p. 77, when speaking of iodophil substances in leucocytes, a reference is made to the chapter on leucocytes, but the larger work itself is not mentioned by name. The book is an excellent epitome of the subjects with which it deals.

The Grouse in Health and Disease; being the Final Report of the Committee of Inquiry on Grouse Disease. Two volumes, pp. 512, 151, xxiii. London: Smith, Elder, and Co. 1911. Price £2 2*s.* net.

THE Final Report of the Committee of Inquiry on Grouse Disease, which has been lately issued, will be found not only of great interest to sportsmen, but also a most valuable book of reference to all scientific men; for while it deals with questions relating to grouse preservation and the management of moors, it also shows the vast amount of scientific research that has been employed in working out the pathology of the diseases to which grouse are most subject, and in ascertaining the pathogenic properties of the numerous parasites which infest them both externally and internally, as well as the life-history of these parasites.

In the second part of the first volume, which has for its sub-title "The Grouse in Disease," the objects of the committee are set forth by Lord Lovat, the chairman of the committee, under six headings, and these define the task which the committee set itself to accomplish. Lord Lovat's headings, or questions of reference, may be briefly summarised as follows: (1) Whether the sickness described universally as "grouse disease" is a single disease with individual characters peculiar to it alone; (2) whether a distinction can be discovered between recorded outbreaks to justify the opinion that two distinct forms of disease are confused under one term; (3) in the event of finding in favour of the belief in two or more distinct epidemic diseases, what are their causes and effects, and by what titles and characteristics are they to be known; (4) in the other event of finding in favour of the belief that only one form of epidemic disease exists, is Professor Klein's view right, that the only serious disorder among grouse is caused by a bacillus of the B. coli group producing lesions of an acute pneumonia in the lungs, with the characters of an acute infectious epidemic disease, or (5) is Dr. Cobbold's view right, that the outbreaks of disease among grouse have been caused by a nematode worm, Trichostrongylus pergracilis, causing certain lesions in the cæca leading to extreme emaciation? (6) is there any other form of "grouse disease" that has been hitherto overlooked?

All these questions are carefully discussed in the light of research work carried out on the moor, in the laboratory, and on the experimental area in Surrey, and each one is unhesitatingly answered by the committee. After remarking that, with the exceptions of Dr. Cobbold and Professor Klein, none of the older writers had made a careful study of "grouse disease," but had simply given their opinions, "hopelessly mixing up observed facts with unsound theories, and primary with predisposing causes," the committee gives the conclusions at which it has arrived in the shape of the answers to the six questions formulated above. The answers may be briefly summed up as follows: (1) The

sickness which in the past has caused "grouse disease" among adult birds is a single disease with clearly defined characteristics of its own; (2) and (3) it follows that if the two forms of "grouse disease" hitherto described as distinct diseases are one and the same there is no need to differentiate between them; (4) that "grouse disease" is not due to Klein's bacillus; (5) that adult "grouse disease" is due to Dr. Cobbold's Trichostrongylus in large numbers in the cæca; and (6) that another form of "grouse disease" exists which has hitherto escaped notice; this is caused by the presence of Eimeria (coccidium) avium in the alimentary tract and is called in the report coccidiosis, but it is fatal only to chicks, whereas the records of "grouse disease" refer only to mortality among adult grouse. Here we have the finding of the committee that grouse disease is caused by Cobbold's strongyle, and the remainder of this part of the report shows how this was scientifically proved.

An introduction by Lord Lovat shows how the committee originated, and it should be remembered that though the committee is described as a Departmental Committee of the Board of Agriculture, all the expenses have been met by private subscription, and no grant of public money has been made towards this valuable work. The life-history of the grouse is dealt with by Mr. A. S. Leslie, who has acted in an indefatigable manner as secretary to the committee. Dr. Wilson, at present with Captain Scott on the Antarctic Expedition, describes the plumage changes of the red grouse, also giving beautiful coloured illustrations of these changes. The food of the grouse is next considered, with tables showing the nature of the food taken and the weight of food in the crop at different hours of the day; the insect food of the grouse is described by Mr. P. H. Grimshaw, who in Appendix F of the second volume gives a full account of all the insects found in the crops of grouse examined by him. Mr. Leslie deals with the water-supply. The very important subject of grit is considered by Mr. H. Hammond Smith and Mr. R. H. Rastall, who worked out their conclusions by making a collection of grits found in the gizzards of all game birds, when it was seen that all birds do better on quartz grit, and that it was essential to grouse from the very earliest age; it was found in the gizzard of a chick not 48 hours old. The physiology and anatomy of the grouse are well dealt with by Dr. Wilson, and here again the coloured illustrations are remarkably good.

The chapter on grouse disease discusses the divergent views obtaining on the subject before the work of this committee. The work done by Dr. Seligmann in the early days of the committee enabled them to decide not to proceed further with Professor Klein's theory, but to work at the parasites of the grouse as potential disease carriers or producers; for, as Dr. Wilson points out, during the whole period of the inquiry no birds have been found dead without loss of weight. In this part of the report we have most interesting accounts of the nematode and cestode worms found in grouse, by Dr. E. A. Shipley, while Dr. Leiper describes the development of the Trichostrongylus pergracilis and the manner in which it obtains entrance into the alimentary tract of the grouse, a chapter that deserves careful study. The work by Dr. H. B. Fantham on the Eimeria (coccidium) avium is exceedingly interesting; the development of this micro-organism, its life-history and methods of reproduction, are minutely described, and the chapter is well illustrated, constituting a fine piece of original work. Another most interesting chapter is by Dr. L. Cobbett and Dr. Graham Smith, on the pathology of grouse disease, giving an account of their experiments and investigations.

The remainder of the report is chiefly concerned with the management of moors, such as careful scientific burning and draining, by Lord Lovat, and the important question of stock. Mr. Hammond Smith gives an account of grouse in captivity, and describes the experimental area at Frimley in Surrey, where grouse were kept for five years, and though at first there were many failures, yet in 1910 41 grouse chicks were hatched from 46 eggs. Mr. Grimshaw in this part of the work has an excellent paper on the heather beetle and its ravages.

The report is a model of what such work should be, and is a good example of the way in which scientific medicine is now bound up with every phase of social life.

Treatment of the Diseases of Children. By CHARLES GILMORE KERLEY, M.D., Professor of Diseases of Children in the New York Polyclinic Medical School. Second edition, revised. London and Philadelphia: W. B. Saunders Company. Pp. 629. Price 21*s*.

THIS volume is dedicated to the author's pupils at the New York Polyclinic Medical School and Hospital, and as such it is not intended as a text-book for unqualified students or as a work of reference for specialists in pædiatrics; this is Dr. Kerley's apology for the particular form which his useful book takes. The work is strongly impressed with the personal element, a feature which will make it all the more acceptable to those who have benefited by the author's oral teaching.

There is very little to criticise, for the author seldom leaves the beaten tract of pædiatrics except in matters of treatment, and as regards therapeusis generally it may be said that each man must be a law unto himself, and he must be guided by his own experience. If we do not agree with many of the methods recommended by Dr. Kerley, it by no means follows that, under different climatic conditions and in different hands, the procedures he recommends may not be followed by the best possible results.

His advice in cases of pyloric stenosis to resort to early operative interference seems to us, however, to strain somewhat severely the charitable view that we are disposed to take of his departures from recognised practice. We are also inclined to dispute the statement that boiled milk is less digestible than unboiled milk, owing to precipitation of lime salts; under ordinary conditions this is one of the pre-stages of gastric digestion. His views on the capacity of the young infant to digest starch are somewhat circumscribed, and his experiments to elucidate the capacity are faulty. Boiled starch may undergo fermentation in the alimentary tract, and leave no residuum to react to the von Jaksch iodine test. Moreover, we know, on general principles, that young infants very soon learn to digest any particular variety of food, provided the probationary experiences are adequately graduated. But the general statement that young infants are capable of digesting starch without qualification is distinctly misleading.

Of mucous colitis the author says (p. 218) that this is a rare disease in children. This may be so in America, but in England it is certainly one of the commonest, in both its chronic and its acute forms. For treatment he recommends olive oil injection at bedtime, and if no stool results in the morning he advises a glycerine suppository. He altogether discountenances the use of the irrigator under such conditions. The Plombières method of using the rectal douche does not seem to be known to Dr. Kerley, or at any rate he does not avail himself of its conspicuous advantages in describing the procedure of intestinal lavage. The hypodermic injection of normal saline in urgent cases of collapse does not commend itself to him. He says in cases in which hypodermoclysis—an ugly term, but we use the author's own expression—is most required "the fluid will not be absorbed owing to the lowered vitality of the patient. Those whose

tissues are able to take up the water appear to do well without it."

Taking it all in all, this is a good book for general practitioners; but it is neither inspiring nor altogether convincing. The arrangement of the contents is clear and the printing excellent. Dr. Kerley is undoubtedly at his best when he deals with the general aspects of disease and the hygiene of infancy and early childhood.

La Neurasthénie Rurale. Fréquence, Causes Sociales et Individuelles. Études Psychologiques et Cliniques de la Neurasthénie chez le Paysan Contemporain. By Dr. RAYMOND BELBÈZE. Paris: Vigot Frères. 1911. Pp. 222. Price 3 50 fr.

Dr. Belbèze, practising in a purely rural district in France, finds that no less than 30 per cent. of his patients belong to the neurasthenic class, and has written an interesting little volume on the type of case commonly met with, based on a record of 200 observations. He attributes the great frequency of neurasthenia partly to local circumstances—unsatisfactory conditions of life, depopulation, &c.—and partly also to the "neurasthéniculture" of the day. Consanguinity, inadequacy of nutrition, and intoxications of one kind or another are all stated as factors of considerable importance. Among the symptoms which Dr. Belbèze's patients show he is struck by the constancy of the occurrence of aboulia, of fear, of desire to avoid any sort of responsibility. No one who has had any experience of medical work in remote country districts can have failed to notice how great is the tendency to "rumination" among certain individuals; with little or nothing to interest them beyond the daily round, the common task, they become introspective and almost inevitably hypochondriac. Dr. Belbèze designates this characteristic symptom "phrontidophilia," and considers it of much significance. Bearing, as it does, on problems which meet the country practitioner of to-day in all countries, this little volume will well repay perusal.

Meat and its Inspection: a Practical Guide for Meat Inspectors, Students and Medical Officers of Health. By A. R. LITTLEJOHN, M.R.C.S. Eng., L.R.C.P. Lond., M.R.C.V.S., D.P.H. R.C.P.S. Lond. London: Baillière, Tindall, and Cox. 1911. Pp. 399. Price 10*s.* 6*d.* net.

THE writer of this volume is entitled to speak with authority, as he is both a medical man and a veterinary surgeon; he is also engaged in public health work and bacteriology. The work does not profess to be a text-book of the subject, but is intended as an aid to those who have to deal practically with meat inspection, such as meat inspectors and students for a public health diploma. After an introductory chapter on the methods of slaughtering and dressing carcasses, with a brief *résumé* of the statutory powers of the medical officer and his inspectors, a full description is given of the appearances of the carcasses of healthy animals. The third chapter, on preserved meat, is rather slight, considering the enormous quantity of such food that is consumed at the present day; a fuller description of the different methods of preservation by heat (only one is mentioned) and of the points to be considered in examining tins would have been useful. The various physiological and pathological conditions which make meat unsound are reviewed clearly and fully. Then follows a good account of the parasitic affections of animals used for food; but we do not find any reference to the recent researches of MacFadden and Leiper on onchocerciasis, the condition known as "worm kernels" that has been extensively found in cattle in Australia, the United States, and elsewhere, due to thread-like worms, transmitted through the medium of some biting insect (see THE LANCET, Feb. 4th, 1911, p. 317). The last chapter, from p. 241 to the end of the book, more than a third of the whole, consists of a verbatim transcript of portions of various Public Health Acts, by-laws, and regulations, which are usefully brought together, but can hardly be credited to the author. The illustrations of pathological conditions are excellent; most of them are drawn by the author himself, and they have been very well reproduced.

Nephrocoloptosis: a Description of the Nephrocolic Ligament and its Action in the Causation of Nephroptosis, with the Technic of the Operation of Nephrocolopexy, in which the Nephrocolic Ligament is used to Immobilise both Kidney and Bowel. By H. W. LONGYEAR, M.D., Professor of Gynæcology and Abdominal Surgery, Detroit Post-Graduate Medical School. With 88 special illustrations and a coloured frontispiece. London: George Keener and Co. Pp. 251. Price 12*s.* 6*d.* net.

THE title of this work is so full that it goes far to explain the contents of the book. The author holds that nephroptosis cannot occur without a coloptosis—that is, a settling down of the colon. The kidney and the colon are, he claims, linked firmly together by the nephrocolic ligament, which he describes as an irregularly shaped aggregation of fasciculi, passing from the perirenal fascia, or Gerota's capsule, to the posterior wall of the ascending or descending colon. This band is called by some Longyear's ligament. The factors necessary for nephroptosis are, in the opinion of the author, (1) a weak or absent hepatocolic ligament; (2) a loose attachment of the kidney at its hilum and to Gerota's capsule; (3) a strong and short nephrocolic ligament; and (4) prolapse of the cæcum and of the ascending colon or of the descending colon. Dr. Longyear's method of operating consists in anchoring the nephrocolic ligament to the perinephric fascia and to the transversalis aponeurosis. Notes of 56 cases are given in which this operation has been performed; there have been no deaths; 35 cases were entirely relieved; 16 were partially relieved, and in 5 cases no report was obtained. In the book the reader will find a not immoderate claim for the benefits likely to follow the operation which the author has devised.

Clinical Lectures on the Acute Abdomen. By WILLIAM HENRY BATTLE, F.R.C.S. Eng., Surgeon to St. Thomas's Hospital and Joint Lecturer on Systematic Surgery in the Medical School, &c. London: Constable and Co., Limited. 1911. Pp. 107. Price 4*s* net.

THE importance of the early recognition of acute abdominal conditions is equalled only by the difficulty which is often encountered in their diagnosis. With regard to treatment, at one time all the surgeon could do was to follow acute abdominal cases to the necropsy room, but now the results are very different. Still, the medical practitioner, called suddenly to a patient with a distended and painful abdomen, often feels entirely at a loss how to deal with the case. How can he tell what is going on within the abdomen? Does it need immediate operation or may delay be justifiable? It is only by studying the subject carefully beforehand that he will be in a position to deal with such an emergency.

Mr. Battle recently delivered some clinical lectures at St. Thomas's Hospital on what he termed "the acute abdomen." We published these lectures in our columns[1] and are glad to see them in book form. They deal with the following subjects: The influence of the appendix vermiformis and its diseases on the production of the acute abdomen; the treatment of acute appendicitis with peritonitis; pathological perforations of the digestive tract; acute intestinal obstruction; the rarer causes of the acute abdomen; the acute abdomen due

[1] THE LANCET, Jan. 27th (p. 201), Feb. 3rd (p. 273), and Feb. 17th (p. 429), 1906.

to disease of the uterus and its appendages; and, lastly, some neuroses which may cause symptoms of urgency. Mr. Battle is emphatic in speaking of the need for immediate operation in most of the cases of acute abdomen, and he cites individual instances which show the benefits resulting from timely operative interference and the harm that may follow delay. It is interesting to note that he employs silk for all abdominal sutures and ligatures, and holds that catgut should not be used in acute abdominal cases, as it is apt to soften and to yield too quickly should any strain be placed on it.

The style of the book is very readable and the lessons eminently practical.

LIBRARY TABLE.

Modern Surgery, General and Operative. By JOHN CHALMERS DA COSTA, M.D., Professor of Surgery and Clinical Surgery in Jefferson Medical College, Philadelphia. Sixth edition, thoroughly revised and enlarged, with 966 illustrations, some of them in colours. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 1502. Price 24*s.* net.—The incessant progress of surgery makes it imperative that every new edition of a text-book should be thoroughly revised, and the author of this trustworthy treatise on surgery has done his best to make his work represent modern surgery. To mention only some of the additions, we have Crile's arterio-venous anastomosis for transfusion of blood, the operative treatment of recent fractures, the use of positive and negative air pressure in intra-thoracic surgery, Murphy's method of treating general peritonitis, and Bier's treatment and Wassermann's test. The work is written simply, in a style suited for the learner, and the numerous illustrations should prove useful. A few points suggest themselves for criticism, such as the advice that a rodent ulcer "requires scraping and cauterisation," but it is inevitable that in so extensive a work there should be some small blemishes. These, however, hardly detract from the general high character of the work. It can confidently be recommended to students as a trustworthy text-book, and a very complete index renders the work easy of reference.

The Essentials of Food. By DONALD STEWART, M.D. London: John Bale, Sons, and Danielsson. 1911. Pp. 182. Price 3*s.* 6*d.* net.—This is a handy volume designed for popular reading, written by a medical man of experience, who does not appear, however, himself to have made any special study or research in dietetics. He quotes largely from Chittenden and seems to adopt his protein standard (pp. 77 and 155) without reserve; but on p. 33 he gives 120 grammes protein as the amount in a "standard" diet. The phraseology used is vague—e.g., "the words nitrogenous, albumen, and proteid signify some obscure modifications of the same thing" (p. 46); sometimes it is erroneous—e.g., "of course there are no carbohydrates or starches in animal foods" (p. 19); milk sugar is an animal carbohydrate. One hesitates to question the author's instructions for making porridge, but does he really take (p. 94) only "one to three *teaspoonfuls* of oatmeal to every pint of water"? Even in a popular work on a small scale it is not commendable to write: "The fuel values are termed calories. The word means heat." The word has a perfectly definite meaning which can be stated shortly and without difficulty. On p. 134 we are told that "food is therefore fire," and lower down that "food is fuel." In explanation of the formula H_2O we read (p. 13) that the figure 2 in the symbol "means not two 'atoms' of the hydrogen, but two elements have to be taken with one of oxygen to form water." We are unable to divine the conception present in the author's mind. Eccentricities of spelling, such as "arson" for argon, phinol, and lypolytic, occur frequently. There is, however, in the book a good deal of information of a practical character expressed in popular language and in a readable form. Possibly the author did not revise his work carefully.

The Prevention of Dental Caries. By STANLEY W. R. COLYER. Pp. 23. Price 6*d.*—*The Prevention of Dental Caries.* By J. SIM WALLACE. Pp. 45. Price 1*s.* 6*d.* London: The Dental Manufacturing Co. 1911.—These are two very interesting essays, and would well repay careful perusal. Dr. Colyer holds the view that the destruction of the enamel in the early stages is brought about principally by the food in a fluid state, the fluid being held in contact with the teeth by capillary attraction, a view supported by a consideration of the usual sites of caries. The prevalence of caries in modern times he attributes to the more easily fermentable character of the carbohydrate food and the increasing number of articles of food in a partly acidly fermented state, which constantly introduce, not only acid, but also acid-producing organisms. Dr. Sim Wallace's thoughtful essay contains much that is useful and suggestive. He considers, and with good reasons, that caries may be easily prevented by careful attention to the dietary. The diet, he considers, should be of a kind to stimulate mastication, and the last food taken should leave the mouth clean, or, at least, free from carbohydrates. The dissemination of knowledge necessary for the prevention of dental caries must, he thinks, come mainly through the medical profession, and therefore no efforts should be relaxed in bringing before their notice the reasons for considering the hygiene of the mouth a most important part of preventive medicine.

Crime and Insanity. By C. A. MERCIER, M.D. Lond. London: Williams and Norgate. 1911. Pp. 255. Price 1*s.* net.—The task of compressing the treatment of a large subject into a small space is never an easy one, and of this the little book before us is an apt illustration. Dr. Mercier has done his best, but even his faculty for marshalling ideas and his powers of verbal expression leave an impression of sketchiness in the work. The nature of insanity and of crime, and the relations between the two, form the subject-matter of the book. Most readers, whether legal or medical, will turn with interest to a perusal of the opinions enunciated upon the vexed question of responsibility. While recognising that crime may be, and often is, the result of insanity, and that some persons are so completely insane that we are not warranted in punishing them for any offence they may commit, the author is yet of opinion that when an insane person commits a crime that is not the consequence of his insanity, it is no more just or proper to excuse him from punishment than to excuse a sane person. The mitigated responsibility here outlined has perhaps a larger number of supporters on the continent than in this country, but we have little doubt that the opinions on this subject advanced by Dr. Mercier will, with the aid of his persuasive pen, ultimately prevail. On the whole this little book is most interesting, and must serve to stimulate thought on the subject it treats.

Radiumnormalmasse und deren Verwendung bei Radioaktiven Messungen. By E. RUTHERFORD. Leipsic: Akademische Verlag-gesellschaft. 1911. Pp. 50. Price 1.50 marks.—This brochure discusses the new standard of pure radium which was adopted at the Brussels Radiological Congress and which is in course of preparation by Madame Curie. The work also contains chapters on the measurement of radium emanation, and on the newly discovered thorium products which bid fair to take, at least in part, the rôle of radium in radio-therapeutics. Anyone who desires to learn all that is to be known about radium dosage at first hand, and from the pen of a real authority, cannot do better than consult this short and yet complete work.

Johns Hopkins Hospital Reports. Vol. XVI. Baltimore: The Johns Hopkins Press. 1911. Pp. 670.—The studies of Dr. George Walker on the experimental production of tuberculosis in the genito-urinary organs occupy (including the bibliography) 222 pages. He mentions the following conclusions as points of surgical significance: Tuberculosis in the genito-urinary organs has only two initial points that need be taken into consideration as regards practical surgery—namely, the glomeruli of the kidneys and the tubules of the epididymis. Primary tuberculosis of the bladder never occurs, and primary tuberculosis of the prostate or vesicles is so rare that it may be disregarded. Descent of the disease process from the kidney to the bladder is common, while, though the reverse process may occur, it does so very rarely and only when there is a special involvement around the orifice of the ureter. Tuberculosis may descend from the vesicles and prostate to the epididymis, but ascent from the epididymis to these organs is much more common and is practically the only condition of surgical importance. In another study Dr. Walker investigates the effect on the breeding of rats consequent on the removal of the prostate or the vesiculæ seminales, or both. He finds that excision of both prostate and seminal vesicles renders the male sterile, but neither excision of the vesicles or prostate alone, nor of the vesicles and the prostate, appears to have any effect on capacity for the sexual act or on the structure or function of the testes. Excision of the prostate has no effect on the structure or function of the seminal vesicles. Dr. John Staige Davis writes on scalping accidents. He considers the historical data and anatomic considerations, gives case reports of various groups of scalping accidents, and discusses the symptoms, complications, prognosis, and treatment. He considers that Thiersch grafts give quicker and more lasting results than the small epidermic grafts of Reverdin. He also describes a series of animal experiments. Dr. J. Hall Pleasants deals with obstruction of the inferior vena cava, and reports 18 cases; he also tabulates from the literature 314 cases. The concluding paper is by Dr. Percival Douglas Cameron on Studies of Cardiac Tonicity in Animals.

Talks with Sanatorium Patients. By GILBERT HEATHCOTE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Medical Officer, Crossley Sanatorium. Manchester: J. E. Cornish, Limited. 1911. Pp. 47. Price 1*s.* 6*d.*—The advantages to patients suffering from pulmonary tuberculosis of residence in a sanatorium are in the main twofold—therapeutical and educational. During the period of treatment the patients are instructed in the mode of life they should adopt after they leave the sanatorium, for certain precautions will have to be taken for a long time after they lose the superintendence of the sanatorium physicians. In the volume now before us Mr. Heathcote explains in popular language the many points which have to be observed so that the benefit initiated by the sanatorium methods may be continued—the diet, clothing, the necessary amount of exercise and rest, and the preventive measures which should be adopted, are all duly discussed, and the remarks should prove useful to those for whom they are intended.

A Monograph of the Anopheline Mosquitoes of India. By S. P. JAMES, M.D. Lond., and W. GLEN LISTON, M.D. Glasg. Second edition, with 15 coloured plates. Calcutta: Thacker, Spink, and Co. 1911. Pp. 128. Price Rs. 16, or 25*s.*—Although this is described as the second edition of a work which we have already noticed in these columns, it has some claims to be regarded as a new work, if only on the technical grounds that the title has been altered from "Anopheles" to "Anopheline." There are also some more and some less important alterations. A few new illustrations have been added in, and interleaved with, the text, while the coloured plates, which are bound at the end of the volume, have been placed in a different order and their legends revised. The authors tell us in the preface that the descriptions of the species have been rewritten. In matters pertaining to science second thoughts are almost always best. And particularly is that the case in relation to a subject which is at the moment in course of extremely active growth. The authors are therefore well advised in giving to us the fruits of their further investigations upon the natural history of these important insects.

Our Baby: For Mothers and Nurses. By Mrs. J. LANGTON-HEWER. Thirteenth edition. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1911. Pp. 176. Price, paper, 1*s.* 6*d.*; leather, 2*s.* 6*d.*—This little book is already so well known to the public, and so few alterations have been introduced into this edition, that words are hardly necessary in commendation of its many merits or in censure of its few delinquencies. As a rule, when individuals who are not medically qualified attempt to deal with strictly medical questions they venture far beyond their depths and become submerged in a sea of difficulties. Mrs. Langton-Hewer, however, has not exposed herself to this reproach. She has not discussed medical matters beyond that point to which as an experienced nurse she is entitled to discuss them, nor would she abrogate to mothers or to the nurse the duties which should be confined to medical men. Her advice on all points of infant management is generally sound, though her attitude towards patent foods is not discriminating, while she shares the common belief of all nurses and all mothers that teething plays a most important part in the minor tragedies of the nursery.

JOURNALS AND MAGAZINES.

Æsculape. Vol. I., No. 8, August, 1911. Paris: A. Rouzaud. Subscription, yearly, 25 francs; single copies, 2 francs.—Among the contents of this number is an interesting article on the pathology of the Aztecs as seen in their votive offerings. Some of the offerings illustrated are distinctly suggestive of the maladies from which their donors had suffered. Another interesting article is that on the Institute of Serum-therapy for Snake-bite at Butamtan, near St. Paul, by Professor S. Pozzi. Dr. G. Encausse gives a brief account of the Aïssaouahs, or followers of Sidi-Ben Aïssa, a species of modern magicians, and of some of their demonstrations. Dr. Paul Rabier-Labiche furnishes an illustrated account of the art work of Dr. P. E. Colin, the physician-engraver. The art museum of Dr. Lannelongue at Castéra-Verduzan is described by Dr. Laurent Poncet. Dr. Auguste Marie, in an article entitled "Some Risks Run by the Medical Profession in Contemporary Society," gives a list of the injuries inflicted on medical men by the mentally unsound. The list begins with the shooting of M. Delpech in 1852, and ends with the wound in the head sustained by Dr. Ameline de Chezal while endeavouring to put down a mutiny in his asylum. Mr. Herbert Ward, Stanley's former companion, contributes a paper on cannibalism.

Man.—The September issue of this journal contains an elaborate article on the characteristics of nine human crania obtained from peat deposits in England and now in the University of Cambridge. Dr. W. L. H. Duckworth and Mr. L. R. Shore, by whom it has been written, have endeavoured to compare these crania with some of the classical palæolithic specimens, and for this purpose have employed four numerical tests—namely, the calvarial height index, the bregmatic angle, the lambda angle, and the breadth indices; the results are shown in a tabular form, and the paper is also illustrated by contour tracings of four of the skulls.

New Inventions.

A SIMPLE APPARATUS FOR THE INTRAVENOUS (OR INTRAMUSCULAR) INJECTION OF SALVARSAN.

THE intravenous method of injection of salvarsan is the best and least painful of all the methods employed, but the forms of apparatus provided for the injection leave much to be desired. The attachment of a long needle direct to the glass nozzle of the syringe introduces a degree of rigidity which is a great disadvantage, if not an actual danger. In introducing a quantity of 200 to 300 c.c. into the vein the syringe requires to be filled many times, and it is practically impossible to prevent considerable movement, with the risk of displacing the point of the needle from the lumen of the vein and the infiltration of the salvarsan solution into the surrounding tissues. The liability of the thin glass nozzle of the syringe to snap off short is a further point of disadvantage. I wish to describe a simple apparatus which is easy to use and free from the foregoing objections. It consists of an all-glass syringe connected to a nickel-plated three-way cock by a short length of 2 to 3 inches of stout indiarubber tubing of medium bore. To the second valve of the stop-cock is fixed about 15 inches of stout indiarubber tubing fitted with a metal attachment sufficient to reach to the bottom of the vessel containing the physiological salt solution or the salvarsan solution. To the third valve of the stop-cock a length of about 12 to 15 inches of rubber tubing is attached. An intravenous needle having a square butt-end which can be clamped flat to the arm by means of an indiarubber band is securely fastened to this tube. A small piece of glass tubing, about an inch in length, is inserted close to its end, so that it can be at once seen, by allowing the blood to

Reproduction of photograph showing method of injection.

flow back, whether the vein is properly entered, or whether, when the injection is being made, the physiological saline solution and the Ehrlich-Hata solution are flowing regularly into the vein The security of the attachment at the various points is ensured by cutting off small bands from the tubing and attaching these over the joint. In this way the connexion between the rubber tubing and the nozzle of the syringe (which is that most likely to become disconnected) is efficiently secured. In using the apparatus the patient should lie with his arm resting close to the edge of the bed, with the solutions, previously warmed by standing in a basin of hot water, placed on a table close to and slightly higher than the couch on which the patient reclines. A tourniquet having been applied, the part is painted with iodine, and a short elastic band, such as is used for holding papers together, is slipped over the arm just above where it is intended to introduce the needle. The syringe and all its parts having been sterilised, the salt solution is drawn up into the syringe and all air expelled from it and from the tubes. With the saline running from the needle, the latter is introduced into the vein, when the blood immediately appears at the glass window; the elastic band is now drawn over the needle, which it holds securely in its place. A little saline is now injected, and the tubing is transferred to the salvarsan solution and the injection is completed. The extra length of tubing attached to the needle enables the operation to be carried out with ease and comfort and without any assistance whatever, and also permits a considerable amount of movement, by either the patient or the surgeon, without the risk of displacing the point of the needle.

Messrs. Squire and Sons, of 413, Oxford-street, London, W., have made me an apparatus of this kind, and they also supply the solution of salvarsan for immediate use.

Brook-street, W. G. W. DAWSON, F.R.C.S. Irel.

A NEW STOMACH CLAMP FOR PYLORECTOMY.

THE essential feature of a stomach clamp for use in the operation of pylorectomy is that it can be relied upon not to slip. Kocher's clamp does not fulfil this requirement, for while the portion of stomach nearest to the hinge—i.e., the greater curvature—is effectively crushed and firmly held, the gastric wall near the lesser curvature is but lightly gripped and tends to slip out of the grasp of the instrument. Messrs. A. Young and Son, Edinburgh, have made for me a clamp which possesses the following advantages:—The blades are slightly curved and very strong, with hog-back to ensure rigidity. The handles are of light construction, being merely for the purpose of applying the clamp and not for crushing. They are connected with the blades in such a manner that the latter always meet parallel (see illustration). The

crushing force is applied by two screws, one at either end of the blades, the one at the distal end being so constructed as to swing up into position after the clamp is applied. When the screws are tightened the stomach is gripped as by a vice, and slipping is not possible.

Edinburgh. D. P. D. WILKIE, M.Ch., F.R.C.S. Edin.

GRESHAM LECTURES, 1911.—Four lectures, on "Flies as Carriers of Disease," will be delivered by Dr. F. M. Sandwith, Gresham Professor of Physic, on Tuesday, Oct. 10th, Wednesday, Oct. 11th, Thursday, Oct. 12th, and Friday, Oct. 13th, at 6 P.M., at the City of London School, Victoria Embankment, E.C. The lectures are free to the public.

INFANTILE MORTALITY AT PORT SAID.—Dr. W. F. C. MacCarthy Morrogh, of the Egyptian Public Health Department, has furnished Mr. Vice-Consul Dunlop with the following report: "There was an increase in the death-rate at Port Said from 27·6 per 1000 in 1909 to 32·4 in 1910. This very considerable rise is due to the terrible infantile mortality. Out of 1444 deaths amongst natives 1068 were of children under five years. This may be accounted for by the ignorance of the parents of the first principles of hygiene, the want of proper care and attention during the early months of life, and improper food; the latter, besides being unfit for children, is often in a state of fermentation, if not putrefaction. There was an epidemic of diphtheria, 82 cases being reported. Here, again, the insanitary habits of the natives, the refusal to accept any preventive measures, and the failure to report cases caused the disease to spread. Most of the houses in the native quarter are built of wood, and it is impossible to keep out the rats which carry the infection. Twenty-eight cases of plague were reported, of which 13 proved fatal. About 17,000 rats were destroyed by the Public Health Department during 1910.'

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 30, 1911.

The National Insurance Bill.

THE autumn session approaches and there are signs already that further debates in the House of Commons upon the provisions of the National Insurance Bill will be keen. Indeed, so widespread in origin and so multifarious in detail has become criticism of the measure that our readers will hardly be considered over-cautious if they begin to take stock of the position in case no legislation follows at once upon Mr. LLOYD GEORGE'S far-reaching proposals. It appears that a good many members of the medical profession share the opinion of a good many members of the public that the Bill, even if it continues to be modified to the same generous extent that has already marked its course during the Committee stage in the House of Commons, cannot prove a well-thought-out measure. Another section of our readers appears to approve of the Bill, though in no very enthusiastic manner, congratulating themselves upon some of the necessary concessions to the medical profession, but viewing other provisions with apprehension; while actual advocates of the Bill among our readers seem to be a very small body. At the same time all enlightened feeling is on the side of a measure which promises so much for the happiness of the existing generation of workers and for the improvement of the health of the next generation. It is in matters of detail and in matters of administration that differences of opinion have manifested themselves to such an extent as possibly to imperil the future of the Bill. As the provisions are more closely looked at by different classes of the population the more do they appear in many directions to want definition. Although at each stage of the debate more or less clearness has been obtained by amendments great and small, there is no doubt that the fact that the measure has shown itself to be so plastic has in itself produced an impression of some distrust. This is well seen in an important letter appealing for the formation of a State service from the pen of Mr. ALBERT BENTHALL, which we print on p. 965 of this issue of THE LANCET. Mr. BENTHALL, whose experience in all matters connected with insurance against sickness and accident is extremely large, finds that the medical profession is taking on trust with far too much readiness the good working of the Local Health Committees, evidently holding that the medical representation on them will not be effective. The dispensing of medical benefits, as far as he can see, need be no better under these committees than it is at present, nor must the position of the medical men of necessity be improved. Mr. BENTHALL'S communication should be read with the attention that it deserves, but we think that his attack on the principle of a free choice of doctor shows an unnecessary distrust of his fellow-men.

Those who believe that the Bill, as far as the clauses which have been debated are concerned, is satisfactory point to two great things—the passing without a dissentient voice of an amendment by the Chancellor of the Exchequer providing for a free choice of doctor by the patient, and the great majority of 387 to 15 by which statutory control of the administration of medical benefits was taken away from the Friendly Societies and placed in the hands of Local Health Committees. The resentment which has been expressed by the Friendly Societies at this logical, and indeed necessary, alteration of the Bill, if the Bill were to be accepted by medical men at all, is, we understand, to have an outcome in a conference between the Chancellor, selected members of the medical profession, and the Friendly Societies. It is an admirable trait in the Chancellor's public policy that he is thus willing to listen to contending views and personally attempt to arrive at just conclusions therefrom; but although there are many points still to be considered in the Bill where such coöperative counsel as is foreshadowed might be valuable, we cannot admit that there is any necessity for debating again the freeing of the medical profession from the control of the Friendly Societies. In proof of this we need only suggest that any of our readers, if there are such, who have any doubt about the advisability of the distribution of medical benefits being removed from the Friendly Societies, should read the proceedings at the meeting of the delegates of the Ancient Order of Foresters at Burton-on-Trent at the beginning of August. An important officer of that association, in protesting against the right of the House of Commons to deprive the Order of the dispensation of medical benefits, described members of the medical profession as sweaters, supporting his words by errors of statement with regard to medical assistants, declaring also that the opposition to the control of the medical benefits remaining in the hands of the Friendly Societies came from men who were envious of those who possessed club practices. This gentleman appeared to think that the old days of the unqualified assistant still existed, and for him the "Battle of the Clubs" has never been fought. Another speaker practically gave it as his opinion that the control of medical benefits was essential to the continuation of the work of the societies, which is going further than anything we have ourselves asserted as to the importance of medical coöperation to these organisations. But we have always believed, and said, that the great inducement which Friendly Societies possess for intending members has been the supply of medical service. From this it would seem to follow that the funds which the Friendly Societies possess, and which command necessarily a good deal of reverence, have had their origin mainly in medical effort. This is the fact which has made the parsimonious treatment by the Friendly Societies of their medical officers particularly ungrateful. A third speaker at the meeting prophesied the formation of Local Health Committees which would be "swamped with doctors," and as a result of these and other lucubrations the Ancient Order formally protested against that amendment of Clause 13 against which in Parliament only 15 dissentient votes were given. From all this it is quite clear that great attempts will

be made to restore Clause 13 to its original wording, but the Chancellor of the Exchequer knows well that if this were done he would run the risk of providing a National Insurance Bill with no medical men to carry on its insurance work.

It supports the idea that the National Insurance Bill has been introduced to some extent at a venture to find that while Mr. BENTHALL sees that the action of the Local Health Committees will be detrimental to the interests of medicine, which profession he feels will be improperly represented upon them, a Friendly Society, representing over a million persons, concludes that these committees will be largely composed of practitioners, or the creatures of practitioners. The cynical might say here that it looked rather as if the Local Health Committees were likely to hit off the happy medium, and form a proper interchange of scientific and public spirit, but men of affairs will consider that they have been given a very strong hint to look closely into the constitution of the Local Health Committees. Similarly, the wide difference of opinion that exists as to how far the German model has been adequately followed leads us to suppose that the Chancellor, despite the anxious pains that he is known to have taken, has not been well-informed as to the position in Germany. Those who have supported the Bill because it was understood that similar legislation has worked extremely well in Germany are beginning to falter in their support of the measure since they have had time to compare the British scheme with the German scheme of insurance. There can be no doubt, as Dr. ERNEST J. SCHUSTER has recently pointed out in a pamphlet,[1] that, while, the German workmen's insurance as a whole may have worked satisfactorily, there is one branch in the conduct of which there has been a good deal of friction; and that is the insurance of temporary sickness. Our readers know well that Dr. SCHUSTER'S words are true. Dr. SCHUSTER suggests that the proposed British system and its uniform rate of contribution for benefits, not even depending upon the wages of the insured persons, is so entirely different from the German system that the success or non-success of the one can hardly be taken to furnish any guidance as to the probabilities of the success or non-success of the other. And now we have before us the remarkable evidence as to the influence upon German industries exercised by the various German insurance schemes, which is contained in the just published report of Sir FRANCIS OPPENHEIMER upon the Trade of Germany in 1910. The position of our National Insurance Bill is certainly an anxious one.

Digitalis in Heart Disease.

WRITING of the use of digitalis in 1778 WITHERING remarked: "It is much easier to write upon a disease than upon a remedy. The former is in the hands of nature, and a faithful observer, with an eye of tolerable judgment, cannot fail to delineate a likeness. The latter will ever be subject to the whims, the inaccuracies, and the blunders of mankind." Few have been better equipped by nature in his own day or since than WILLIAM WITHERING to undertake the task, and his "rules and cautions" for the employment of the drug may be perused with benefit to-day. "Let it be continued until it either acts on the kidneys, the stomach, the pulse, or the bowels; let it be stopped on the first appearance of any of these effects, and I will maintain that the patient will not suffer from its exhibition, nor the practitioner be disappointed in any reasonable expectation." And his last conclusion, "that it has a power over the motion of the heart to a degree yet unobserved in any other medicine, and that this power may be converted to salutary ends," is as true now as when he wrote. He had, moreover, the acumen to add that "If inadvertently the doses of the foxglove should be presented too largely, exhibited too rapidly, or urged to too great a length, the knowledge of a remedy to counteract its effects would be a desirable thing." Such a remedy, he finally remarks, may perhaps in time be discovered, an expectation which has not been disappointed, for atropine largely fulfils these conditions.

Every generation since WITHERING lived has added its quota to our knowledge of the use of digitalis in heart disease, "whimsical," "inaccurate," or "blundering" at times, to use WITHERING'S words, or nearer the truth in other instances and expressed in terms of the current physiology of the period. That, however, which is once true, is always so, although interpretations of the truth, or inferences from it, may vary and be correct or otherwise. It continues true, as WITHERING maintained, that digitalis has "a power over the motion of the heart," which the observation and skill of many have "converted to salutary ends." Opinion has, however, naturally varied with experience as to the circumstances and manner in which this powerful agent has proved most beneficial, and even after the lapse of more than a century our ideas lack precision in the matter. In the conclusions reached *individual* experience often proves to have played too large a part and to have obscured rational generalisation. It is recognised, however, that digitalis is impotent to influence heart-rate in the presence of febrile stimulation, and we now know the importance of determining the presence or absence of an infective endocarditis in the case of old disturbed lesions, even when the febrile movement is mild and intermittent. Extrinsic conditions, such as thyroidism and pericardial tethering, we also know may render futile the potential power for good of the drug. Authorities, again, in all probability have differed through attaching too great importance to personal experience, as to the value of the drug in the case of particular lesions. Thus the agent decried by CORRIGAN in aortic cases was extolled by BALFOUR as powerful for good when the same defect was present, while BROADBENT split the difference and indicated its utility in such cases when "mitral symptoms" supervened. This, however, was little more than to acknowledge that an aortic case had broken down, and the majority of observers still attach more importance to cardiac failure in such than in purely mitral cases, because experience has shown the former to be more difficult of remedy. Sir WILLIAM

[1] The Parliamentary Bill Examined and Compared with the German Scheme (reprinted from the Journal of Comparative Legislation), by Ernest J. Schuster, LL.D. London: John Murray and Co. 1911. Price 6d.

BROADBENT also maintained that while mitral regurgitant cases "almost always" benefited from the use of cardiac tonics, this was by no means equally so in mitral stenosis.

It seems, however, to have been generally agreed in the past that digitalis has found its most striking successes in uncomplicated mitral regurgitation associated with the general evidence of cardiac failure, on whatever lines it has been sought to explain this fact. In these circumstances of still existent uncertainty on many important points, every carefully considered record of experience in the use of the drug is worthy of note, and such a contribution appears in the last issue of *Heart*, which is wholly occupied by an article on digitalis from the pen of Dr. JAMES MACKENZIE. After an introductory generalisation as to the efficacy, or want of efficacy, of the drug in certain circumstances, he gives a detailed account of 40 cases in which the dosage and effects of the drug were carefully noted, and certain conclusions or impressions are finally expressed. Of his 40 cases no less than 20 had mitral stenosis or were diagnosed as such, one is described as "mitral," ten as "mitral and aortic disease," two as "aortic," and the remaining seven constituted a miscellaneous group containing cases of paroxysmal tachycardia, bradycardia, and emphysema. Of the mitral stenotic cases ten responded well to digitalis and eight apparently did not; of the mitral and aortic, only one seems to have answered definitely to the remedy. One of the stenotic cases could scarcely have been expected to show definite results, as it was evidently one of infective endocarditis, although the fact is not mentioned in the record, and had, of course, a fatal issue. Of the two aortic cases neither was notably affected by the drug, while in the miscellaneous group four improved under digitalis and three did not. It is not the amount of material here set forth, but the care with which the investigation was carried out which renders it worthy of consideration. The language employed by Dr. MACKENZIE is largely that of the new cardiology in which the auriculo-ventricular bundle and the various possible starting places for cardiac contraction and fibrillation of the auricle play a part, although he does not fail to ascribe a considerable rôle to the action of digitalis upon the vagus in modifying the action of the heart.

The general conclusions arrived at are, that "Cases of auricular fibrillation are more readily and markedly affected than cases with the normal rhythm." In other words, that the irregular heart, and particularly that explosively and often temporarily irregular heart which is usually associated with mitral disease, especially in younger subjects who have suffered from rheumatic fever and in whom the cardiac muscle is fairly sound, respond most easily to the drug. It is admitted that in persistent irregularities and in older people it is less successful. Dr. MACKENZIE suggests that the fibrillating auricle may render the auriculo-ventricular bundle more susceptible to the action of digitalis, which, by impeding the shower of auricular impulses regarded as falling upon the ventricle, may induce calm. Digitalis, however, it is contended, at times tends to *produce* auricular fibrillation. Some evidence is adduced that the diuretic effects of digitalis may be observed without any perceptible change in the heart, and two cases of tachycardia "arising from an abnormal source" are mentioned in which a more normal rate was established after the occurrence of fibrillation of the auricle.

The preparation of digitalis chiefly used was the tincture, and it was given in doses of 15 or 20 minims three or four times a day "until some definite reaction was obtained" of the kind indicated by WITHERING. The principle of pushing the drug, as experience has taught many, is frequently necessary to attaining success, but, while not averse from a guarded boldness in the use of digitalis, we own to a conviction that slow increase in dosage is usually quite effectual when remedy is possible by this means, and that the comparatively rapid induction of nausea or vomiting is rarely necessary and not always safe. Incidentally, Dr. MACKENZIE mentions some interesting observations on the inefficacy of some and the efficacy of other agents which have been employed in the treatment of heart disease. Thus he found aconite, long regarded as a retardant of cardiac action, to be quite inert in medicinal doses. Although he found strophanthus acted well in regulating irregular hearts, he never observed it to succeed where digitalis had failed. Atropine, he convinced himself, was potent in accelerating some hearts retarded by the action of digitalis. It will thus be noted that Dr. MACKENZIE'S experience of the use of digitalis in heart disease differs little from that of many others who have recorded their observations. Yet we fully recognise his painstaking endeavour to secure trustworthy data for the formation of more precise and scientific opinion on the use of a drug which is still used by many empirically, and which, like most agents capable of effecting good, requires to be employed with all the circumspection possible.

Annotations.

"Ne quid nimis."

CERTIFICATE OF PROFICIENCY IN VACCINATION.

THE Local Government Board has issued a circular dated Sept. 21st, 1911, with reference to the certificate of proficiency in vaccination which is required to be produced by a medical practitioner to a board of guardians before he can enter into a contract with them for public vaccination. A certificate of proficiency in vaccination can in general only be obtained from a teacher authorised by the Board after due instruction and examination. The Order of 1905, however, permitted certificates of proficiency to be given to certain classes of medical men after examination only and without a previous course of instruction. The present Order extends the exemption from the course of instruction prior to examination to any person already holding a medical diploma or degree granted in a British possession or foreign country who is a candidate for examination by an examining body in the United Kingdom for a diploma, licence, or degree conferring the right of registration under the Medical Acts. The new Order supersedes the Order of 1905 and incorporates its provisions. The following teachers and examiners are entitled to give such certificates of proficiency

in vaccination (to the special classes of medical men defined in the Order) after examination only, and without a preliminary course of instruction:—

STATION.	NAME OF VACCINATOR WITH ADDRESS.
London—Tolmers Square Institute, Drummond-street, N.W.	Mr. Joseph Loane, 13, Great Alie-street, E.
Bristol—St. Peter's Hospital, Bristol...	Mr. George Shepley Page, 78, Old Market-street, Bristol.
Liverpool—17, Mulgrave-street ...	Mr. Nathaniel Edward Roberts, 17, Mulgrave-street, Liverpool.
Newcastle-upon-Tyne—The Dispensary, Nelson-street...	Dr. Frank Hawthorn, 6, Regent-terrace, Newcastle-upon-Tyne.
Edinburgh—The Western Dispensary, St. Cuthbert's Hall, Riego-street, Tollcross	Dr. John Brown Buist, 1, Clifton-terrace, Edinburgh.
Dublin—45, Upper Sackville-street	Dr. Alexander Nixon Montgomery, 45, Upper Sackville-street, Dublin.

A practitioner who has obtained a certificate of proficiency in vaccination granted by a teacher authorised for the purpose by the Board as a condition of obtaining a diploma, licence, or degree is not required to produce it before entering into a contract with a board of guardians for public vaccination. The Order will be placed on sale, so that further copies may be obtained from Messrs. Wyman and Sons, Limited, Fetter-lane, E.C., either directly or through any bookseller.

COW-DUNG FLOORS AND PLAGUE PREVENTION.

FROM a medical correspondent possessing an intimate knowledge of the social and religious life of the natives of India, and a close acquaintance with their habits and customs, we have received an interesting communication in which he endeavours to prove that the comparative immunity from plague experienced by Madras and Eastern Bengal is due to their methods of practising domestic hygiene, and particularly to their carrying out the very ancient custom of frequent spreading or washing of floors with cow-dung. He points out that, on the other hand, in the Punjab and other northern and north-western provinces which have been, and still are, suffering severely from the ravages of plague, and which are, as he expresses it, "too highly Mahomedanised," this spreading of cow-dung on the floors has been neglected, the people having abandoned largely this old Hindu practice handed down to them by their forefathers. There is no doubt a religious side to this question, and for that reason we hesitate to express ourselves as freely as we otherwise might have done. But our remarks are made strictly from the sanitary point of view. We understand our correspondent's view to be that this dung treatment of floors acts in two ways:—firstly, there is a slight chemical action upon organisms which may be present on the floor; secondly and mainly, the mechanical effect is to entangle in the semi-liquid dung and thus destroy any fleas or flea-eggs. We think, however, that sprinkling the floor with a weak solution of some disinfectant, accompanied with frequent vigorous sweeping, would effect more benefit, especially if the floor were made smooth and impervious by cement or in other ways. There is also another consideration to be kept in mind—namely, that tubercle bacilli may be present in the cow-dung, and that these might in one or another way infect the inmates of the dwelling. Our correspondent argues that the ancient method of "cleansing" floors is well known to all classes of the inhabitants of India, and that its adoption could be more easily enforced than could any other procedures suggested by sanitarians. We are, however, of opinion that as a plague-preventive measure this use of cow-dung has nothing to commend it. The first Indian Commission showed by experiments that B. pestis can live in sterilised cow-dung for several weeks, or even months, though in unsterilised dung the microbe did not survive longer than six days. That cow-dung has little effect in preventing the multiplication of fleas has been proved by the Advisory Committee for the Investigation of Plague in India, one of whose prominent members, Dr. C. J. Martin, director of the Lister Institute, has made the following statement in one of his reports: "The Indian hut, with its floors of cow-dung and its indescribable litter, in addition to providing cover for rats to nest, affords good breeding ground for fleas of all sorts. The amount of vermin infestation of these houses may be gathered from the fact that in one room in which dead rats had been found and plague cases had occurred the Commission for the Investigation of Plague in India secured 263 fleas." Cleanliness of persons and of house interiors, with admission of sunlight and fresh air, will do more to prevent plague in Hindu huts than the spreading of cow-dung on the floors. It is well known that the vitality of B. pestis is quickly acted upon by exposure to the rays of the sun or to the effects of drying, as, for example, by a current of air.

INJURY OF THE SPINE DUE TO MUSCULAR EFFORT.

IT does not appear to be generally known that serious, and even fatal, injury of the spine may be a result of muscular effort. In the *Glasgow Medical Journal* for July Dr. George S. Middleton and Dr. John H. Teacher have reported a remarkable case of rupture of an intervertebral disc. An engineer's labourer, aged 38 years, was admitted into the Glasgow Royal Infirmary on Feb. 12th, 1910. At 6.30 A.M. on the 8th, while lifting with another man a heavy plate from the floor to a bench 3 ft. high he "felt something crack in his back." He could not stand up straight, but had to remain bent on account of pain and a feeling of weakness in the back. For a quarter of an hour he tried "to straighten himself" and then walked home—a distance of two or three minutes—in a bent position. He said that he had often lifted heavier weights before without injury, and the man who assisted him did not suffer in any way. When he reached home he sat in a chair fairly comfortable, but movement caused intense pain, radiating from the back round both sides. He was seen about 1 P.M. by his medical attendant, who ordered him to bed. He was able to walk to the bed, but could not stand, his legs giving way. He attributed the difficulty to excruciating pain in the back. In bed he was most uncomfortable, turning and twisting to find a comfortable position and suffering much pain in the attempts. He felt sick, but did not vomit. On that night he micturated for the last time. Between 2 and 3 A.M. he felt an agonising pain shoot down from his chest to his feet with peculiar sensations as if his limbs were "sleeping." This soon passed away, and he found that he could not move either leg. The bladder and bowels became paralysed and on Feb. 12th he was sent to hospital as a case of intestinal obstruction. In the ambulance van his bowels acted without his knowledge. On admission there was great distension of the intestines and bladder and complete flaccid paralysis of both legs with anæsthesia as high as Poupart's ligaments. The cremasteric and all the reflexes of the lower limbs were absent. Both legs became atrophied in their whole length, including the glutei. At the upper part of the buttocks two acute decubital sores formed. He grew steadily weaker, the urinary sepsis increased, the temperature rose, rigors occurred, and he died on Feb. 24th. At the necropsy no irregularity of the spine could be made out either externally or after opening the canal. There was no clot outside the dura mater. There was marked softening of the lumbar enlargement of the cord with brown staining indicative of hæmorrhage, but there were no clots. There were also early hypostatic pneumonia at the left base, septic cystitis, pyelitis, and

abscesses in the kidneys. After hardening in formalin the cord showed much blood in streaks through several segments of the lumbar enlargement. A segment about a quarter of an inch long was thinner than the rest and appeared to have been crushed. Opposite this, entangled in the loose fibrous tissues outside the dura mater, was an irregular circular flat mass of firm white tissue which looked like the pulp of the centre of an intervertebral disc. Microscopic examination showed the characteristic structure of this pulp. The mass was 15 millimetres in diameter and 5 thick. Its margins were ragged; a few red blood corpuscles adhered to them entangled in the shreds. Microscopic examination of the cord showed advanced softening amounting almost to necrosis in the central parts and much diffuse blood infiltration extending above and below the crushed segment. There was early secondary degeneration of the various tracts. Unfortunately, the portion of the intervertebral disc was not noticed until the day after the necropsy, when further examination of the spine was impossible. But injury or displacement of the vertebræ of the common types had been searched for and could be excluded. From the position of the injury of the cord it seemed that the disc which gave way was that between the twelfth dorsal and first lumbar vertebræ. When the injury took place the back must have been bent with the lumbar and abdominal muscles in full action. This would powerfully compress the intervertebral discs with the anterior margins of the vertebræ approximated—a favourable position for displacement of the pulp of the intervertebral disc backwards. A case presenting some similarity in respect to injury of an intervertebral disc has been recorded by Kocher. A man fell 100 feet and sustained various injuries, including rupture of the bowel, from which he died in some hours. The disc between first and second lumbar vertebræ was smashed and squeezed out from between the bodies, which appeared to be undamaged. Both cases show the possibility of injury to the intervertebral disc without visible injury to the vertebræ.

THE PREVENTION OF MALARIA IN ATHENS.

THE name of the Athenian Ilissus awakens in many of us ideas of beautiful scenery. Images are evoked by its name such as succeed in our minds at the mention of the streams of Yarrow, Thames, or Liris. Consequently it is a shock to find the Ilissus accused of causing the malaria which has long hung about Athens. That is the charge brought against it by Professor Cardamatis of Athens, who has explained in the *Archiv für Schiffs- und Tropen-Hygiene* for August how he has freed the Ilissus from this disgrace. As he says, there are two conditions required for the spread of malaria: patients there must be, infected and infective, as well as mosquitoes to carry the infection; remove one or other of these factors and the malaria ceases. Either, that is, cure the patients by the administration of quinine, or get rid of the breeding places of the anopheles, or combine both methods. Professor Cardamatis reports that New Anchialos was freed from malaria by quinine, while at Marathon he and a colleague got rid of it by quinine and improved drainage. In Athens the controlled treatment of all individuals by quinine was impossible, so he attacked the state of the Ilissus, a sluggish stream which spreads itself into many wide shallow semi-stagnant pools, the very places for mosquito larvæ, further sheltered as these are by the weeds which grow in the slow-moving water. He cleaned the river bed, by embankments and deepenings narrowed its course and expedited its flow, and he has the new bed swept out every week to get rid of anopheles' eggs which may have become deposited. These works were begun in 1906. In the years 1901–1905 inclusive the children of the neighbouring schools found to be infected with malaria had averaged 80 per cent. The number at once began to fall, and in 1906 and subsequently the proportions found infected were successively, per cent., 60, 21, 2⅔, ⅔, and none. Thus the course of the Ilissus has been freed from malaria, and Professor Cardamatis deserves credit from every lover of Ancient or Modern Greece and from every sanitarian for the striking improvement he has secured by measures so simple and so sagacious.

BEER AS A CONDIMENT.

ALTHOUGH beer does not contain a large amount of nutrient material there appears to be little doubt that in the healthy individual it favours the assimilation of food in a manner akin to such condimental substances as meat extract, pepper, salt, vinegar, mustard, and so forth. Recent investigations on this point at all events show that malt extractives contained in beer, added to a dietary almost devoid of organic condiments, increase the assimilation of non-nitrogenous food-stuffs, particularly fats. In addition 86 per cent. of the extractives of beer themselves are assimilated and yield about 81 per cent. of their thermal energy to the system. Beer supplies, however, a negligible amount of proteins, but the stimulus of its alcohol increases protein absorption from nitrogenous foods. In these scientific terms, therefore, the practical observation that beer, bread, and cheese make an appetising nutritious whole receives definite endorsement. Physiologists have put forward from time to time various explanations of the fulness and plethora which often succeed the habitual and excessive drinking of beer—it is strikingly exemplified in the brewer's man—and it now appears that this effect is not due to the nutritives of the beer, but to the tonic or condimental action of the malt extractives, which increase the assimilation of the foodstuffs partaken with it. Some valuable scientific contributions upon this and related subjects appear from time to time in the *Journal of the Institute of Brewing*, in which will be found the reports of the International Physiological Research Institute founded for the purpose of carrying out investigations on the physiological effects of beer and other alcoholic beverages. These researches will be welcomed as calculated to throw light upon the hygienic aspects of the national beverage.

SCARLET RED AS A STIMULANT TO THE EPITHELIATION OF GRANULATING SURFACES.

IN 1906 B. Fischer drew attention to the remarkable growth of epithelium produced by the subcutaneous injection of a saturated solution of the dye known as scarlet red in olive oil into the rabbit's ear, and suggested therapeutic possibilities. His experiments have been confirmed and extended by a number of investigators. Schmieden first adopted his suggestion and in 1908 reported rapid healing of sluggish ulcers. He used an 8 per cent. ointment and alternated it every 24 hours with some bland ointment on account of the irritating properties of the scarlet red. He insisted that the granulations must be perfectly clean and flat, and that it was useless to apply the ointment to an unclean ulcer. Kaehler modified Schmieden's technique and obtained good results in unhealthy granulating wounds. Krajea then used scarlet red in conjunction with partial Thiersch grafts and found that their edges, as well as those of the wound, were stimulated. In the *Johns Hopkins Hospital Bulletin* for June, 1909, Dr. John Staige Davis reported 60 cases in which he had used scarlet red with satisfactory results, and in the number for June, 1911, he has returned to the subject. Carrel, the well-known American surgeon, states that when at the end of the period of "granulous retraction" of a large wound the edges of

the old epidermis are still at a distance of 20 to 25 millimetres the new epidermis cannot spread on the granulations and cicatrisation comes to a standstill. In almost all the wounds treated by Dr. Davis "granulous retraction" had long ceased, epidermisation had come to a standstill, and the areas were for the most part very large. Nevertheless, marked epitheliation took place from the once sluggish edges, and subsequent rapid healing. Several chemically different dyes are sold under the name of scarlet red, of which Dr. Davis has used three. He has obtained the best results from toluene-azotoluene-β naphthol. He obtained marked epithelial stimulation even when the wounds were unhealthy and the discharge profuse, but the most rapid results were obtained in flat healthy granulating surfaces. His technique is as follows. Cleanse the wound thoroughly with boric or salice solution and dry. Peroxide of hydrogen may be used before the boric solution if the granulations are unhealthy. Nitrate of silver stick is freely used to keep down exuberant granulations. Tincture of iodine (U.S.P.) may follow the silver or be used on alternate days and is a powerful and rapid cleanser of granulations. The scarlet red ointment is usually of 8 per cent. strength, and it is alternated every 24 or 48 hours with some bland ointment. The ointment is applied as follows. Anoint the skin around the defect with some bland ointment to within 1 centimetre of the wound, to prevent irritation. Spread the scarlet red ointment on a thin layer of perforated old linen and apply to the wound either along the edges or over the whole surface. A light dressing of sterile gauze completes the procedure. A 4 per cent. ointment may be used on partial skin grafts of all kinds and causes rapid growth of epithelium from the wound edges and the grafts. Dr. Davis has also used with equally good results amido-azotoluol, a component of scarlet red. Some writers have gone so far as to claim that by the use of these substances skin-grafting can be abolished. Dr. Davis thinks that this is claiming too much, but he has no doubt that wounds can be healed which otherwise could be closed only by grafting. The skin produced is stable and resistant, and of normal appearance macro- and microscopically. There is no tendency to subsequent contraction, and the skin becomes moveable on the underlying tissues.

THE DANGERS OF BRIQUETTE MANUFACTURE.

LAST year the Secretary of State certified the manufacture of patent fuel (briquettes) with addition of pitch to be dangerous, and draft regulations were issued which it was proposed to apply to this industry in pursuance of Section 79 of the Factory and Workshop Act, 1901. Objections were subsequently received by the Secretary of State, who thereupon directed an inquiry to be made. For this purpose Mr. Alfred Herbert Lush, barrister-at-law, was appointed, and his report has just been issued. On the whole, he concludes that the industry is not an unhealthy one—in many respects, indeed, it is said to be exceptionally healthy. But there are two elements of danger, he adds, due to the action of pitch fragments or dust on the eyes and of pitch dust on the skin. The dust induces chronic changes in the corneal and sclerotic coats of the eye, and wounds are sometimes inflicted by flying fragments during digging or breaking pitch which are difficult to heal, and impaired sight or even blindness frequently follows. The so-called pitch warts form on the body after a considerable period of working in the briquette factory. Usually these warts are not malignant in character, save when they occur in particular parts of the body—the lips or genital organs, and more especially the scrotum—producing that scrotal epithelioma which, though a rare disease amongst the general population, is frequent amongst chimney-sweeps who are exposed to soot in the same way as are fuel-workers to pitch dust. Remedies are proposed in the draft regulations which include the prevention of dust, the wearing of overalls and goggles, and frequent washing. It has been agreed to institute trials in order to find out the practicability of applying the suggested regulations. Meantime it seems desirable to attack the question as to what is the harmful substance in pitch with the view of eliminating it.

HOSPITAL FINANCE IN LONDON.

THE statistical report on the ordinary expenditure of London hospitals for the year 1910, which has recently been issued by King Edward's Hospital Fund for London, is a very interesting document. Statistics relating to 106 institutions are dealt with in the report, the first section of which consists of an alphabetical series of tables giving general statistical particulars, total expenditure, cost per bed occupied, and per out-patient attendance. The other sections of the report analyse in detail the expenditure of such of the hospitals as can be conveniently grouped together. As pointed out in a prefatory note, it can hardly be expected that the hospitals, whose expenditure has now been analysed for several years, should show further reductions in cost on the same scale as those which followed the issue of the first report. The fact, however, that the report for 1910 shows a saving of £2000 over the previous year's economies, in spite of the development of new methods of treatment and the sustained rise in prices, speaks well for the way in which the hospitals of the metropolis are managed. In 1905 economical methods effected a saving of £21,000 in the case of 16 hospitals; and in 1906 48 hospitals showed an additional saving of £18,000. In the following period a change was made in the keeping of hospital accounts, and comparisons were impossible till 1908–09, when a further saving of £6000 was shown by 55 hospitals. The document, which can be obtained from Messrs. Spottiswoode and Co., Limited, 5, New Street-square, London, E.C., is published at 1s. net, or 1s. 3d. post free.

THE DANGERS OF INTRAVENOUS INJECTION OF ALKALINE SOLUTIONS.

THE use of large doses of carbonate of soda and other alkalies in the treatment of various forms of acidosis, and especially that of diabetic coma, is a well-established practice; but it appears from the experiences of Dr. Léon Blum, published in *Semaine Médicale* of Sept. 13th, that there is a limit to the safety of this measure, especially when the intravenous method of administration is used. One of the cases described by him will serve as an illustration of certain untoward effects, which are apparently to be ascribed to the toxic action of sodium. The patient, a woman, 34 years of age, was in an early stage of diabetic coma, and it was decided to administer sodium carbonate intravenously. A 5 per cent. solution was used, and a vein on the bend of the left arm was exposed and the cannula introduced. After a few drops of the solution had been poured into this vein it swelled up for a distance of six centimetres, and no further fluid could be induced to run in. The injection seemed to be painful. A further attempt was made with another vein of the same arm, but with an equally unsatisfactory result, and the skin and subcutaneous tissues in immediate relation with both veins became discoloured by infiltration with blood. The cephalic vein of the right arm was next used; here, however, the same phenomena were repeated, the vein swelling to the size of the little finger as far as the axilla. By means of massage of this vein it was possible to introduce 750 cubic centimetres of the solution, though with difficulty and at the cost of giving the patient evident pain. Almost immediately after the injection was

completed the state of somnolence which had served as the chief indication for its use deepened into coma, and both pulse and respiration became feeble. Between this and death, which followed about four hours later, there were several severe attacks of clonic convulsions. A post-mortem examination disclosed no gross injury of the central nervous system; the veins of the left arm were normal, while that in the right arm was filled with clot, though there was apparently no phlebitis. Blum produces various experimental and clinical facts which are in accord with this experience, and go to prove that alkaline solutions, if of too great a strength, are capable of producing venous spasm and various evidences of central nervous poisoning. Convulsions, which have been described as occurring with the very greatest rarity in diabetic coma, are especially related to the injection of these solutions, so that there is little room for doubt as to their causation. Blum believes that it is the sodium of the salt that is toxic, for various ill-effects have been noted after the injection of so innocuous a compound as the chloride. Unhappily, as he points out, it is not so easy to balance the effect of sodium in alkaline injections as in those designed for the introduction of the neutral chloride; in the latter potassium and calcium chlorides are added to the sodium salt, but in the former the use of calcium, at least, is precluded by the formation of insoluble calcium carbonate. In default of such a plan Blum recommends the use of bicarbonate of soda in a 6 per cent. solution. This should be boiled for a quarter of an hour, not only to sterilise the solution, but also to render it less toxic by converting the bicarbonate into the carbonate of soda.

THE BACILLUS COLI AND PLANT DISEASES.

AN interesting inquiry has been undertaken by Mr. John R. Johnston, for the Laboratory of Plant Pathology, United States Department of Agriculture, as to the relation between bacillus coli and certain plant diseases. The inquiry arose in this way. In August, 1909, two different cocoanut trees in Cuba were found to be very seriously affected with bud-rot. Certain bacterial organisms were isolated therefrom and seven apparently healthy trees were inoculated with the cultures. In about three weeks a soft white rot, typical of bud-rot disease, was found in each case. Isolations made from these artificially diseased trees were then sent to Washington for study. Four of these, from different trees, were inoculated into four cocoanut seedlings, and typical soft rots resulted. Isolations were again made from these rotted tissues and further inoculations were practised, with similar results, the organisms recovered being the same as those found in the first artificially infected trees. It thus seemed as though at least one organism capable of causing the bud-rot of the cocoanut palm had been identified. Examination of this organism showed that its cultural characters corresponded to those of the bacillus coli, so that the principal means of identifying the bacillus coli were applied to the cocoanut organism, and the two organisms were subjected to a close comparison in great detail, with the result that "it was found impossible to ascertain any characters by which the cocoanut organism could be distinguished from the bacillus coli received from the animal pathological laboratories.' The converse experiment was then made, and it is this that forms the subject of Mr. Johnston's paper.[1] Cultures of bacillus coli of animal origin, obtained from different laboratory sources, were inoculated on different occasions into the heart tissues of 11 cocoanut seedlings about 1 metre high in a greenhouse in Washington, three other seedlings receiving a plain inoculation as checks. In every instance the result was a water-soaked area about the inoculation hole, and in three cases also a soft-rotted area. The checks, however, showed neither water-soaked nor rotted area. Inoculations of bacillus coli were next made into three cocoanut trees in Cuba and infected the trees, producing brown, wet-rotted areas. Ten subsequent inoculations into seedlings in a greenhouse showed browning of tissues in six cases, two showed good brown rots, one a typical soft wet rot and a brown stain, and one a wet rot. Bacillus coli was recovered from six of the first batch of seedlings inoculated, and from each of the three trees; no platings were made from the second batch of seedling inoculations. The identification of the bacillus coli was in each case made by all the usual methods. Mr. Johnston concludes that the finding of very closely allied forms in the many cultures made, together with the presence of a form indistinguishable from bacillus coli, indicates a probable greater importance of this organism in relation to the vegetable world than has heretofore been recognised. Comparative pathology, even among different members of the animal kingdom, is a science of comparatively recent growth. Its extension to the correlation of animal and vegetable pathology may open up unsuspected factors in etiology

[1] Is Bacillus Coli a Plant Parasite? By John R. Johnston. Phytopathology, vol. i., No. 3. June, 1911.

AN ALLEGED MURDEROUS ASSAULT EXPLAINED AWAY.

MEDICAL evidence and the fact that corroboration of her story was not forthcoming proved fairly conclusively, at a recent inquest held at Chelsea, that an account given of certain injuries by a lady residing in a flat in Park Walk, S.W., was the outcome of delusions on her part. Miss Ada Solly Flood, 54 years of age, was found by her servant, who had been out from 3.30 to 11.30 P.M., to be suffering from cuts on her head, and to her, as well as in a letter to her medical attendant, Miss Flood told a story of two men wearing motoring caps who came to the door of her flat, which she opened. According to her, one of them then struck her on the head with a weapon, and when she came to her senses she found that a purse containing money had been stolen from her flat. The police made inquiries, but could not find any trace of the flat having been invaded as described, and the manager of the establishment gave evidence at the inquest to the effect that he believed it was impossible that the alleged incident could have taken place. It was stated, however, by the servant that a purse had in fact disappeared. Miss Flood after the evening in question became very ill and was medically attended, dying three days after the supposed attack upon her. A cousin deposed at the inquest that she suffered from hallucinations, and the evidence of her servant left no doubt that she was an alcoholic subject. The medical evidence was to the effect that the injuries of the deceased might have been due to a fall, and that death was from heart failure and had been accelerated by alcoholic excess. The jury gave a verdict accordingly, saying nothing as to the alleged assault. Such cases as these are not uncommon in the records of forensic medicine, and sometimes put the equipment of the medical practitioners consulted to a severe test. It is not difficult to see that in analogous circumstances there might be considerable risk of a miscarriage of justice.

INCORPORATED ASSOCIATION OF MEDICAL OFFICERS.—The following are the principal papers announced to be read during the ensuing session of the Association of Medical Officers which opens on Friday, Oct. 20th: Mr. H. C. Barker, superintendent of the out-patient department of the London Hospital, on "Medical Treatment of London County Council School Children"; Mr. Godfrey Hamilton, secretary of the National Hospital for the Paralysed and Epileptic, on "Hospital Appeals"; and Mr. L. H. Glenton Kerr, secretary of the Great Northern Hospital, on "Paying Hospitals of the Future."

ASYLUM REPORTS.

Down District Lunatic Asylum, Downpatrick (Annual Report for the Year 1910).—At this asylum the daily average number resident was 753. The admissions numbered 133, being 14 less than the number admitted the previous year. Of these, 103 were first admissions and 30 readmissions. The discharges numbered 70, and of this number 65 were recovered; the recovery-rate on the admissions stands at 48·9 per cent. Deaths numbered 54, being a rate of 7·2 of the daily average number resident. The deaths are registered as due to heart lesions in 20 cases, to phthisis and other tuberculous affections in 17 cases, to pneumonia in five cases, and to general paralysis, organic brain disease, and liver disease in two cases each. Mr. M. J. Nolan, medical superintendent, remarks that the Inspectors of Lunatics in their fifty-ninth report lament that the county councils have failed to avail themselves of statutory provisions "by which a common laboratory might be provided and a pathologist appointed." He fears that the subject is one which is so removed from the trend of county affairs that it will remain a dead-letter so long as the provisions are optional. He points out that though special rates are levied for a variety of purposes of questionable utility, some at least of which are either sentimental or intangible, yet that in Ireland no organised effort scientifically to investigate the causes of the burden of insanity is made.

Joint Counties Asylum, Carmarthen (Annual Report for the Year 1910).—The average daily number resident was 680. There were admitted during the year 109 patients. Of the admissions the attack occurred for the first time in 64 cases, and of these 35 were admitted within three months of the onset of the mental disorder, and therefore constituted the most favourable group for treatment; 38 cases showed symptoms of mental disorder, about which little or no hope of recovery could be entertained from the first. In 16·7 per cent. of the admissions (excluding statutory readmissions) there was ascertained a history of hereditary insanity or allied disorders. Mental stress, sudden or prolonged, was attributed as an etiological factor in 43 cases; while alcoholism was assigned either as an exciting or a predisposing cause in 13 cases, or 12 per cent. of the total admissions. There were 43 discharges, and of these 27 were recovered. Of the cases discharged recovered 10 were in residence from one to three months; 9 from three to six months; 3 from six to nine months; 1 from nine to 12 months; 2 from one year to two years; and 2 from two to three years, the average duration of residence being seven months, and the average age of the patients 39 years. The deaths numbered 54, and necropsies were performed in 41 cases. Tuberculosis still figures highly as a cause of death, but it is satisfactory to know that the proportion per cent. of tuberculosis deaths in all cases, namely 18·5, in the past year is the lowest recorded for 12 years, and that it has shown a steady decline since 1906, when the rate at this asylum was 38·9. One male patient died from senile decay at the advanced age of 106. An interesting point in his case was the fact that he had not lost a single tooth during life.

Kent County Lunatic Asylum at Barming Heath (Annual Report for the Year 1910).—The average daily number on the registers was 1627. There were admitted 405 patients; 15·3 per cent. of the direct admissions were over 60 years of age. 66·6 per cent. of the patients had been ill for more than a month previous to admission. Of the direct admissions, 27·5 per cent. had previously been discharged recovered, this being rather a lower percentage than usual. Dr. H. Wolseley-Lewis, medical superintendent, points out that this high rate means that there are a number of unstable people who, under the ordinary stress of life, break down mentally, and that, unfortunately, this mental instability is a quality likely to be transmitted to their offspring should they have any. In 50·9 per cent. of the admissions hereditary defect was ascertained. The discharges numbered 183, of whom 132 were recovered. 65·1 per cent. of the recoveries took place within a year from the commencement of the attack; 50 per cent. of those discharged recovered had a neurasthenic history, and in 65·1 per cent. the form of disease from which recovery took place was either recent melancholia or recent mania. There died 207 patients, being a percentage of 12·7 on the average daily number on the registers. In 85 per cent. of the deaths necropsies were performed. The chief causes of death were phthisis, 17·3 per cent.; morbus cordis, 16·4 per cent.; general paralysis, 13·5 per cent.; senile decay, 11·1 per cent.; and dysentery, 5·3 per cent. Of the 1629 patients who remained in the asylum on Dec. 31st, 1483 were considered quite incurable.

Kent County Lunatic Asylum, Chartham Downs, Canterbury (Annual Report for the Year 1910).—At this asylum the average daily number on the registers was 1014. There were admitted during the year 224 patients. There were discharged 99 patients, of whom 72 were recovered, being a rate of 32 per cent. on the total number of admissions. The deaths numbered 135, being 17 less than the previous year.

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

County of Rutland.—Dr. Christopher Rolleston in his report details the method of medical inspection and the steps taken to ensure the coöperation of the parents; the routine is somewhat elaborate. As a rule, not more than 24 children are examined in any one day, and ten minutes are taken for each case, weighing, measuring, and vision-testing being done by the medical officer. A letter of notification is sent to the parent by post from the education office, and the exact time at which the child will be inspected is stated on a gum slip affixed to the letter. The time of the parent is thus saved and also the inconvenience caused by a crowd of waiting parents. The ordinary schedule of the Board of Education is followed, but in addition the method of feeding and upbringing in infancy and early youth is inquired into, and also the age at which the child began to talk and walk. The name of the family medical man is ascertained, and any defects revealed are notified to him by letter at the close of the examination. At the expiration of three months the school medical officer pays a return visit and re-inspects the children found defective at the previous examination; if the children have not been treated a second letter is then written to the parents urging them to get advice, and asking them if they have any difficulty in obtaining treatment to write to the superintendent medical officer and inclosing a stamped addressed envelope. Despite these methods, the result is not encouraging—of 344 cases referred to medical men only 58 sought advice, a percentage of 16·8. Dr. Rolleston suggests that if local committees could be formed (presumably care committees) better results would be obtained, but the difficulties of treatment in Rutland are considerable; for instance, there is no X ray apparatus in the county, and the parents usually obtain some expensive quack remedy for the treatment of ringworm from the grocer or chemist. "This," says Dr. Rolleston, "is dabbed on the victim's head from time to time when the parent has nothing else to do." The statistics of nutrition have a special interest because of the facts collected with regard to the method of feeding in infancy. In the group "Entrants and Leavers" 2·8 per cent. of boys and 1·8 per cent. of girls are returned as having very poor nutrition; in the group "Specials," 10·4 per cent. boys and 2·1 girls. Of the "Special" cases information as to the infantile feeding was obtained in 74, and of these 51 were entirely breast-fed and 23 artificially reared. Of the 51 cases 13 were puny, and of the 23 artificially fed 9 showed signs of imperfect nutrition. Among the children in the "Entrants and Leavers" classes, information was obtained about 503, of whom 350 were reared entirely on the breast; of these 350, 58 were badly nourished or showed signs of rickets; of the 153 who were artificially fed, 31 showed similar disabilities. Dr. Rolleston says: "Personally, I should have expected a higher difference between breast and bottle feeding, but it must be remembered that breast feeding is extraordinarily mismanaged." In many cases breast feeding is continued for two years, and in a few for three or four years. It is further noted that the percentage of perfectly nourished children decreases with age, as is also, by the way, the case with the percentage of perfectly clean children. In discussing the question of mental deficiency Dr. Rolleston reports, with regard to the after-employment of such children, that the best results are obtained in agriculture, and that

they are in some parts of the country much sought after by farmers on account of their docility and the absence of any desire to change their employment or to ask for higher wages. The review of the hygienic conditions of the schools is not very encouraging; three of the schools are stated to be good, but methods of cleansing, water-supply, and lavatory accommodation are in some cases seriously objectionable.

Royal Leamington Spa.—Dr. Edward Burnet's report deals with ten schools and 3320 children, and shows in a striking way the superior administrative efficiency of the small as compared with the large educational areas. Dr. Burnet is also medical officer of health, and therefore able to maintain the closest personal and official relations with all agencies which affect school life. The small number of the schools makes it possible for every department of every school to be visited at frequent intervals, "usually once a week," and also to see cases needing medical certificates or information and advice of various kinds at the public health office between 9 and 10 in the morning. "Twelve months' experience," says Dr. Burnet, "of this early morning's work has convinced me of its very great value. As a result of this the relations between the children, the parents, and myself are most intimate and cordial." No doubt it is due to the establishment of these relations that the report is able to state that "in every instance where remediable abnormal conditions had been pointed out, successful treatment had been adopted." Dr. Burnet also considers that as a direct result of medical inspection, and the direction of parents' attention to classes of defect noticed in school work, the improvement in remediable conditions "has been extended to many who were not at that time [that of medical inspection] of school-attending age." It is to be hoped that due notice will be taken of the sentences which say that "the school should make up for the deficiencies of the home. In none of the schools have I seen the marked presence of soap and clean towels." Facilities for treatment of vision defects, of dental caries, of otorrhœa, and of skin diseases are seriously lacking, and in view of the optimistic report on treatment quoted above one is forced to conclude that these ailments are, in the absence of such facilities, classed as non-remediable. Dr. Burnet recommends that the education authority should arrange for vision defects to be treated by special arrangement with the only resident ophthalmic surgeon.

County of Kent.—The question of mental deficiency is discussed at some length in Dr. W. J. Howarth's report, and a valuable map supplied of the distribution of these children over the county. It is pointed out that mentally defective children are a serious difficulty in county areas, being so few in number that no convenient centre can be arranged for a special day school, the only alternative being a residential institution. As facilities for such special treatment do not yet exist in Kent, exclusion from ordinary schools is not advised unless the cases are of such a nature as to distinctly interfere with efficient administration. There are in the county 338 cases, and 61 others are under observation with special reference to their mental condition; there are some 80,000 children altogether on the rolls, the mental defectives contributing, therefore, about 4·2 per 1000 of the school population. A table of the schools at which such children attend is also given, from which it appears that as a rule not more than one or two children attend in any one department. But in a few cases there are three children, in two cases six, in two cases seven, and in one case 15. Dr. Howarth suggests that so far as counties are concerned State provision of the necessary accommodation is the way out of the difficulty. There were, further, 76 cases of epilepsy, in not a single case of which was it possible to obtain special treatment. Here, again, is a strong case for State provision, as practically nothing is done for this class of case anywhere. Statistics are given of the total number of defects requiring treatment in 1909 and 1910, and the total number which obtained it, but inasmuch as these include treatment at home and by druggists, and are not checked as to whether the treatment was effective, they have not much weight. Also defects are mentioned, not children, and therefore one is unable to estimate the influence of social circumstances and social groupings so easily as would otherwise be the case.

Lindsey County.—Dr. R. Ashleigh Glegg reports that in the case of 1649 children showing 2079 defects no advice was sought for in over 79 per cent. It must, however, be noted that no special facilities for treatment exist in the area. Reporting on nutrition, 2·6 per cent. boys and 3·14 per cent. girls are returned as "bad nutrition," but out of 6749 children 7 per cent. were markedly anæmic and 14 per cent. anæmic in a lesser degree. These two sets of figures appear contradictory. Dr. Glegg urges the necessity of definite education on the subject of choice of food and cookery. In an appendix codes of instructions and regulations for the guidance of the assistant medical inspector are given, as well as the forms used in connexion with medical inspection and for giving information in regard to infectious diseases.

County of Essex.—Dr. H. W. Sinclair presents an interesting report very fully supplied with useful statistical tables. In certain schools children with ringworm are allowed to attend if (1) the whole of the hair is cut very short; (2) the affected portion of the head is daily covered with ointment; and (3) a clean cotton cap is worn, covering the whole head and securely fastened. At Loughton, Buckhurst Hill, and Woodford experimental dental clinics have been started.

County of Hertfordshire.—A useful analysis is given in table form of the differences in defects found in rural and urban children. Some are very marked. The proportion of eye defects (rural to urban) is, for instance, 84 to 52 for all children, for boys 109 to 61, and for girls 137 to 103. The defects in girls' vision are worse than the boys' at each age both in urban and rural areas. Open-air classes are held throughout the county in summer. Mr. F. E. Fremantle hopes to extend their use.

Dunfermline.—An interesting account, with photographs, is given of the school clinic started in February, 1910. Two rooms have been set apart for this in the institutions of the Carnegie Dunfermline Trust, and the sending of cases to the clinic is in the hands of private practitioners, who send what they consider suitable cases after they have been medically inspected and referred to them, in the first instance, by the inspector. Mr. J. C. Bridge urges the establishment of an open-air recovery school.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns, having an estimated population of 16,157,797 persons in the middle of this year, 7781 births and 5266 deaths were registered during the week ending Sept. 23rd. The annual rate of mortality in these towns, which had steadily decreased from 21·2 to 17·1 in the four preceding weeks, further declined to 17·0 per 1000 in the week under notice. During the first twelve weeks of the current quarter the annual death-rate in these towns averaged 16·7 per 1000, while in London during the same period the mean annual death-rate did not exceed 15·5 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 5·3 in Handsworth (Staffs), 6·1 in Hornsey, 8·3 in King's Norton, and 10·2 in Tottenham, to 24·5 in Gateshead, 25·7 in Liverpool, 26·9 in Burnley, and 30·0 in Stockton-on-Tees. The 5266 deaths from all causes in the 77 towns last week were 24 fewer than the number returned in the previous week, and included 1559 which were referred to the principal epidemic diseases, against numbers decreasing from 2900 to 1701 in the four preceding weeks. Of these 1559 deaths from the principal epidemic diseases, 1377 resulted from infantile diarrhœa, 61 from whooping-cough, 42 from diphtheria, 40 from enteric fever, 26 from measles, and 13 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 5·0 per 1000, against 6·7 and 5·5 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had steadily decreased from 2714 to 1540 in the four preceding weeks, further declined to 1377 last week, and caused the highest annual death-rates of 9·3 in Northampton, 9·9 in Hull, 10·0 in Stockton-on-Tees, 10·3 in Burnley, 10·4 in Swansea, and 11·4 in Middlesbrough. The deaths referred to whooping-cough, which had been 58, 58, and 55 in the three preceding weeks, rose last week to 61, and included 15 in London, 4 in Sunderland, and 3 each in Birmingham, Bury, Manchester, Leeds, and Hull. The fatal cases of diphtheria, which had been 35, 40, and 27 in the

three preceding weeks, rose to 42 last week; 13 deaths were recorded in London, 5 in Liverpool, 3 in Bristol, and 3 in Stoke-on-Trent. The deaths attributed to enteric fever, which had steadily increased from 11 to 41 in the five preceding weeks, were 40 last week, and of these 12 were registered in London, 3 in Liverpool, and 3 in St. Helens. The deaths referred to measles, which had declined from 59 to 25 in the five preceding weeks, numbered 26 last week, and included 7 in London and its suburban districts, 3 in Liverpool, and 3 in Salford. The 13 fatal cases of scarlet fever were equal to the number returned in the previous week; 4 deaths were registered in London, 2 in Bristol, and 2 in Stoke-on-Trent. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1327, 1349, and 1454 at the end of the three preceding weeks, had further increased to 1532 on Saturday last; 240 new cases of this disease were admitted to these hospitals during the week, against 168, 217, and 264 in the three previous weeks. These hospitals also contained on Saturday last 853 cases of diphtheria, 225 of whooping-cough, 142 of enteric fever, and 86 of measles, but not one of small-pox. The 1356 deaths from all causes in London last week were 33 in excess of the number in the previous week, and included 113 which were referred to diseases of the respiratory system, against 95 and 97 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 171 and 169 in the two preceding weeks, further declined last week to 160, and 326 inquest cases were registered. The causes of 32, or 0·6 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death last week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Portsmouth, and in 47 other smaller towns. The 32 uncertified causes of death in the 77 towns last week included 4 in Birmingham and 2 each in London, Liverpool, St. Helens, Manchester, Salford, and Preston.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 835 births and 547 deaths were registered during the week ending Sept. 23rd. The annual rate of mortality in these towns, which had been 17·2, 16·4, and 15·7 in the three preceding weeks, rose to 16·7 per 1000 during the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these Scotch towns averaged 15·2 per 1000, and was 1·5 per 1000 below the mean rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 13·0 and 14·6 in Paisley and Greenock to 19·0 in Dundee and 20·3 in Perth. The 547 deaths in the eight towns last week were 31 in excess of the number in the previous week, and included 95 which were referred to the principal epidemic diseases, against 105 in each of the two preceding weeks; of these 95 deaths, 65 resulted from diarrhœa, 12 from whooping-cough, 5 from measles, 5 from scarlet fever, 5 from diphtheria, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 2·9 per 1000, and was 2·1 below the death-rate from the same diseases in the 77 large English towns. The deaths attributed to diarrhœal diseases, which had been 113, 78, and 80 in the three preceding weeks, declined to 65 last week, and included 59 of infants under two years of age; 36 deaths were recorded in Glasgow, 11 in Dundee, 10 in Edinburgh, and 4 in Aberdeen. The deaths referred to whooping-cough, which had been 10, 12, and 8 in the three preceding weeks, rose to 12 last week, and included 5 in Aberdeen, 3 in Glasgow, and 3 in Dundee. The 5 fatal cases of measles, which were slightly in excess of recent weekly numbers, were all recorded in Glasgow. The deaths from scarlet fever, which had been 2 in each of the two preceding weeks, rose to 5 last week, of which 3 occurred in Glasgow. The deaths attributed to diphtheria, which had been 5, 8, and 10 in the three previous weeks, fell last week to 5, and included 2 in Glasgow. The 3 fatal cases of enteric fever were all registered in Glasgow. The deaths referred to diseases of the respiratory system, which had been 24, 53, and 41 in the three preceding weeks, rose to 57 last week, but were 7 below the number returned in the corresponding week of last year. Of the 547 deaths from all causes in the eight towns last week, 166, or 30 per cent., were recorded in public institutions, and 22 deaths were attributed to different forms of violence. The causes of 21, or 3·8 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes last week did not exceed 0·6 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 514 births and 444 deaths were registered during the week ending Sept. 23rd. The annual rate of mortality in these towns, which had been 22·1 and 19·4 in the two preceding weeks, rose to 20·4 per 1000 in the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these Irish towns averaged 18·3 per 1000; in the 77 English towns during the same period the mean annual death-rate was equal to 16·7, whilst in the eight Scotch towns it did not exceed 15·2 per 1000. The annual death-rate last week was equal to 22·6 in Dublin (against 15·6 in London), 20·2 in Belfast, 19·7 in Cork, 12·8 in Londonderry, 23·1 in Limerick, and 24·7 in Waterford; whilst in the 16 smallest of these Irish towns the mean annual death-rate did not exceed 14·8 per 1000. The 444 deaths from all causes in the 22 Irish towns were 16 in excess of the number returned in the previous week, and included 122 which were referred to the principal epidemic diseases, against 130 and 134 in the two previous weeks; of these 122 deaths, 111 resulted from diarrhœal diseases, 5 from whooping-cough, 3 from scarlet fever, and 3 from enteric fever, but not one from small-pox, measles, or diphtheria. These 122 deaths from the principal epidemic diseases were equal to an annual death-rate of 5·5 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 5·0, while in the eight Scotch towns it did not exceed 2·9 per 1000. The deaths attributed to diarrhœal diseases, which had been 141, 117, and 121 in the three preceding weeks, declined last week to 111, and included 106 of infants under two years of age; 48 deaths occurred in Belfast, 46 in Dublin, and 5 in Cork. The 5 fatal cases of whooping-cough were equal to the number in the previous week; 3 deaths were registered in Dublin and 2 in Belfast. The 3 deaths from scarlet fever were also equal to the number in the preceding week and were all recorded in Dublin. The 3 fatal cases of enteric fever, all of which occurred in Dublin, were slightly in excess of recent weekly numbers. The deaths referred to diseases of the respiratory system, which had been 31, 44, and 42 in the three preceding weeks, were 43 last week. Of the 444 deaths from all causes in the Irish towns last week, 104, or 23 per cent., were recorded in public institutions, and 6 deaths were attributed to different forms of violence. The causes of 16, or 3·6 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·6 per cent. in the 77 large English towns, but was equal to 3·8 per cent. in the eight Scotch towns.

THE SERVICES.

1ST LIFE GUARDS.

Surgeon Lieutenant-Colonel Benjamin W. C. Deeble retires on retired pay (dated Sept. 27th, 1911).—Surgeon Captain Robert M. Cowie from the 2nd Life Guards to be Surgeon-Major (dated Sept. 27th, 1911).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. Meek, at present holding medical charge of the military hospital at Cosham, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. An exchange of positions on the roster for service abroad has been sanctioned by the War Office between Lieutenant-Colonel J. H. Daly, serving at Limerick, and

Lieutenant-Colonel F. W. G. Gordon-Hall, holding medical charge of the military hospital at Glasgow. Major F. J. Brakenridge has been appointed a Specialist in State Medicine by the Army Council. Major L. P. More, on return from a tour of service in the Northern Army, India, has been detailed for duty in the Southern Command. Major G. T. K. Maurice has been transferred from the military hospital, Bulford, to Tidworth Park, Salisbury Plain. Major T. H. J. C. Goodwin, D.S.O., has arrived home on leave of absence from the military hospital, Quetta. Major C. R. Evans has been detailed for a tour of service in the Maltese Command during the coming trooping season, in succession to Major J. A. Hartigan, who has been ordered to proceed to North China. Major J. F. Burke has been selected for appointment as Medical Officer in Charge at Penally. Captain J. H. Brunskill has been appointed Specialist in Bacteriology by the Army Council. Captain A. J. Hull, on completion of a course of instruction for promotion to the rank of Major, has been appointed for duty in the London District. Captain F. W. W. Dawson has been transferred from Ticknock Camp to Dublin. Captain C. G. Thomson, on return to duty from leave of absence, has been posted to the Military Hospital at Edinburgh. Captain R. L. V. Foster has taken up duty in the Devonport District. Captain F. A. McCammon has arrived home on leave of absence. Captain H. H. J. Fawcett has been selected for appointment as Adjutant of the Home Counties Division School of Instruction, Royal Army Medical Corps. Captain T. W. Browne has been granted an extension of leave. Captain S. M. W. Meadows has been appointed to the Tidworth District, Salisbury Plain. Captain R. H. Bridges has taken up duty at the Royal Victoria Hospital, Netley. Lieutenant C. G. Sherlock has been transferred from Rawal Pindi to the Station Hospital at Lahore. Lieutenant P. S. Tomlinson from the Military Hospital at Tidworth Park, Salisbury Plain, has taken up duty at Wedgenock Park.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel W. Vost has been appointed to officiate as a Civil Surgeon of the first class during the absence on leave of Lieutenant-Colonel J. Morwood. Lieutenant-Colonel B. B. Grayfoot has relinquished charge of the duties of Deputy Sanitary Commissioner, Sind Registration District. Major E. S. Peck has been granted six months' leave of absence home from India. Major G. H. Stewart has taken up duty as Deputy Sanitary Commissioner in Burma in succession to Major N. P. O'Gorman Lalor. Major A. Fenton, on transfer to Rangoon, has been succeeded as Civil Surgeon of the Mandalay District by Major P. Dee on return from leave. Major F. A. L. Hammond has been appointed Civil Surgeon at Bassein in succession to Captain E. A. Walker. Captain E. Owen Thurston, on return from furlough, has been appointed to officiate as Professor of Surgery in the Medical College, Calcutta, during the absence on leave of Major C. Stevens. The services of Captain E. Bisset have been placed temporarily at the disposal of the Government of the United Provinces for plague prevention duties. Captain S. B. Mehta has been granted privilege leave of absence for 30 days. Captain F. P. Mackie has been appointed to officiate as Civil Surgeon of Farrukhabad. Captain S. C. Pal, at present holding medical charge of the depôts at Fatehgarh, has been appointed to officiate as Civil Surgeon to the Fatehgarh District in succession to Captain H. R. Nutt, transferred to Ayamgarh. The services of Captain J. Morison have been replaced at the disposal of the Government of India. Captain F. W. Sumner has been transferred from Bijnor to Shahjahanpur to officiate as Civil Surgeon in succession to Lieutenant-Colonel J. Morwood, who has been granted leave of absence.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant John R. R. Trist is confirmed in his rank.

FRENCH NAVAL DISASTER.

The sympathy of England, in common with that of every other civilised country, was spontaneously offered to the French nation when the terrible disaster which occurred to the battleship *Liberté* became known. The vessel caught fire in Toulon Harbour in the early morning of Sept. 25th, and after a series of explosions broke in two and sank.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—Before the profession pledges itself to any particular course in regard to the above, I think a great deal more consideration should be given to the various points than there has been up to now, and it appears to me that the interests of medical men at present holding club appointments have not been safeguarded or even considered. These appointments have in some cases been held for generations in the same family, in other cases they have been bought by the payment of substantial sums. The appointments are now it seems to end without compensation, and the work and its emolument are to be thrown open to every practitioner in the district, and even out of it, and every one assured to have the "free choice of a doctor."

The Chancellor offered to relieve the profession acting under the Bill of the expense of drugs and to grant a very much higher scale than that at present in force in contract practice. His offers have been declined, and there has been no stipulation for an enhanced, reasonable, but adequate minimum scale. It is almost past belief that it has been seriously proposed that the whole matter of the payment for medical services shall be left an open question, to be arranged by medical men in each district with the Local Health Committee. The control of Friendly Societies has been bitterly opposed, yet at the same time the control by the Local Health Committee is accepted.

I can only point out that the printed Bill has apparently never been read, for the Health Committees are to be constituted as follows: one-third by members of local sanitary authorities, one-third elected by Friendly Societies, one-third elected by the assured workmen. Health Committees thus constituted would naturally have no sympathy for the interests of medical men, and would be more difficult to deal with even than with the great Friendly Societies. Medical men, knowing the methods of local sanitary authorities in the past, will agree to this. Again, it is inconceivable that medical men in each district are to be left to bargain with committees of laymen, two-thirds of whom are working men wishful to do the best for their society. What would it mean? Different scales in different districts; the present club practices would be split up among many practitioners, each appointment being worth next to nothing, the most capable and better qualified medical men, of course, declining to have anything to do with the working of the Act.

The "free choice of a doctor" is in the opinion of everyone who has had experience certain to lead to an immense amount of malingering, and the doctor who gives certificates freely will get the practice, and the honest, conscientious practitioner will lose it. There will be temptations which should not be put before struggling professional men. The attitude taken up in some quarters is, I think, a mistake, as the suggestion of a strike is an insult to the profession and also impracticable; the non-safeguarding the interests of club doctors who have faithfully carried out work under extreme disabilities is unfair, and there will be humiliation brought to every medical man who is reduced to squalid bargaining with laymen as to his remuneration.

With an intimate knowledge of all ranks of the profession, and looking at the matter from an unbiased and outside point of view, I can only urge that the "free choice of a doctor," the splitting up of the work of the clubs among many, with the question of remuneration not settled by the Bill but left to irresponsible bodies of laymen, to be fixed upon after consultation with keenly competing practitioners, will destroy the profession in the eyes of the public, and in the interests of the State and the well-being of the people would be absolute madness.

It may be asked, Is there an alternative? Is it possible to secure the best medical service to the people without undue expense to the State, and with honour, and sufficient emoluments to medical men? I say "Yes," in one way, and in one way only, by a "State Medical Service," every

man appointed to have the right to the title of State Medical Officer. That in itself would be a valuable asset. The members of the profession holding club appointments, being otherwise properly qualified, should in the first instance be appointed in country districts, and where suitable; but gradually in large towns there should be established clinics, with whole-time medical officers, admitted to the Service by examination, with good expectations of promotion, and in old age a pension.

The control of Friendly Societies has been objected to. I have shown that the control of a Health Committee would be practically the same thing, or worse, yet it is perfectly certain that there must be control, and I venture to say that such control should only be in the hands of a Secretary of State, responsible to Parliament. Friendly Societies and Health Committees will be certain to be interested, and their advice will in many cases be valuable, but I think it will be agreed that they should have no power over medical officers of the State, who should be called upon to do their duty without fear or favour.

It must be remembered that under the Bill the State will be very largely interested, as also every class of employer and employed, and it must be essential to the financial success of the Act that only those assured persons who are really disabled by ill-health are allowed to obtain benefit. On the Friendly Societies and Health Committees will be cast the duty of dispensing the weekly payments, and they will have to depend, in the first instance, on the certificates of the medical officers attending the assured.

I yield to no one in my belief in the honesty of the great mass of the working classes. I have seen in numberless cases the greatest anxiety to get back to work, but I have also been obliged to come in contact with many cases of exaggerated claims or absolute malingering. Seeing that the Act will apply to a much greater number of persons than ever were dealt with under the Workmen's Compensation Act, it is impossible to ignore the fact, that there must be a large amount of malingering under the National Insurance Act, unless provision is made for dealing with it from the very beginning. Medical officers with every desire to do right will have, in any case, a delicate duty to perform in discriminating between just and unjust claims, and they should be subjected to no outside influence which might by any stretch of imagination be supposed to bias their judgment.

Again, the profession is not only interested in medical officers attending the employed. There must be medical men appointed as referees to act when the condition of an insured person is in dispute, and these referees, if they are to retain the confidence of the public, must be absolutely unbiased and above any sort of influence, exerted by either Friendly Societies desirous of reducing claims on their funds, or by assured persons exaggerating their disability or inventing it.

I feel sure that medical officers can only obtain a position, unsubjected to outside influence, by appointment by the State, and controlled only by a State department, the head of which is responsible to Parliament.

I am, Sir, yours faithfully,

South Hampstead, Sept. 25th, 1911. ALBERT BENTHALL.

CONDENSED MILKS IN THE INFANT DIETARY.

To the Editor of THE LANCET.

SIR,—Whilst agreeing with your very timely and wholesome condemnation of the low grade machine-skimmed condensed milks as foods for children, I fear the casual reader will mistake your remarks for an attack on condensed milk in general. Milk, to be a desirable food, must contain all its natural fat, but that is not all; it must also be clean. The commodity sold by the itinerant milkmen is never very clean and often revoltingly dirty, as was shown by the late Mr. Ernest Hart.[1]

Some of the pasteurised milk sold is unfit for food by the time it reaches the consumer. In January of last year a sample of pasteurised milk was seized by the authorities of St. Marylebone and found to contain 22,415,000 germs per cubic centimetre, with other etceteras, including pus. The high-grade condensed milks sold in every grocer's shop throughout the country are clean, and in this lies their value when compared with the fresh milk ordinarily sold. Many more children have been killed by filthy fresh milk than ever contracted rickets from being fed on Swiss or other good brand of full-cream condensed milk. It is one thing to diagnose rickets in a child fed on condensed milk, but quite another to prove that the condensed milk caused the rickets.

The late Dr. H. Ashby wrote[2]—

> I do not doubt that a good condensed milk is better and more wholesome for the infant than much of the so-called fresh milk which is retailed to the poorer classes in our large cities; and it is a useful substitute for fresh milk when, as often happens in the summer, the milk-supply is swarming with micro-organisms.

In a properly managed condensery all the milk employed is obtained from carefully selected and regularly inspected farms; after the addition of the sugar it is condensed in a vacuum pan at a temperature of 120° F. Surely this is far less likely to injure milk than the rough and ready sterilisation to which fresh milk is subjected in the domestic saucepan. My own five children began to take Swiss milk when only a few days old, and none of them have shown any signs of rickets. I have seen hundreds of other people's children similarly fed, and equally healthy. By all means let us order fresh milk whenever we can do so with confidence, but not unless we can truthfully say that fresh milk is clean milk.

I am, Sir, yours faithfully,

London, S.E., Sept. 23rd, 1911. JOHN ROUND.

To the Editor of THE LANCET.

SIR,—At a general meeting of the Condensed Milk Clearing House and Defence Association held this day, at which all the principal manufacturers and importers of skimmed milk (representing 95 per cent. of that trade) were present, the recent report of Dr. Coutts to the Local Government Board was considered, also the article which appeared in your issue of Sept. 16th.

The manufacturers and dealers in skimmed condensed milk have no desire to represent the article as other than it is. They label it "machine skimmed milk" in accordance with the requirements of the legislature, and they do not desire to represent that it is in ordinary cases a suitable food for young infants; but they strongly resent the suggestion that it should be labelled "unfit for infants' food," as they consider that this would convey a false impression that it is unwholesome, and it would unnecessarily injure the sale of a useful and cheap article of food, which is a great boon to the working classes.

The meeting considered the wording proposed by the writer of your leading article and they desired me to express their thanks for the suggestion, not only because it conveys in an unobjectionable form all the Local Government Board report proposes, but it defines very happily the period during which condensed milk should be avoided in infant feeding. The following resolution was unanimously passed and will immediately be carried into effect:—

> Resolved that all labels on tins of machine-skimmed condensed milk in addition to the words "machine skimmed" as required by the legislature shall bear in clear type the words "not a substitute for mothers' milk" in accordance with the suggestion made by THE LANCET.

I am, Sir yours faithfully,

U. A. CLEEVE, Chairman.

69, Mark-lane, London, E.C., Sept. 26th, 1911.

To the Editor of THE LANCET.

SIR,—I have read with considerable interest Dr. F. J. H. Coutts's report to the Local Government Board on condensed milk and your leading article thereon. I take it that this represents the medical view of condensed milk, but I think the commercial side of the question is also worthy of your consideration.

The condensing of machine-skimmed milk is the utilisation of the otherwise waste product of butter-making. Skimmed milk can only be used for the feeding of pigs, preparation of skimmed cheese, making of milk-powder or machine-skimmed milk, and of these the latter is probably

[1] Brit. Med. Jour., vol. i., 1897, p. 1167.
For details of the bacteriological and chemical examination of various brands of condensed milk see "Condensed Milk," by H. Dold and E. Garrett, *Journal of Royal Institute of Public Health*, 1910, vol. xviii., p. 294.

[2] Ashby, Health in the Nursery, p. 101.

the most valuable and the most easily assimilated form. All the manufacturers of condensed skimmed milk are butter manufacturers, and derive the bulk of their profits from the butter part of the undertaking.

Dr. Coutts states that he finds there is a considerable consumption of machine-skimmed milk for infant feeding, but he gives no figures whatever to prove his contention; in fact, the only figures given show that the total amount of infants fed on condensed milk is only 3·1 per cent. in Brighton (all kinds), 8 4 per cent. in Derby (all kinds), and in Salford 0·4 per cent. (skimmed only).

The manufacturers of machine-skimmed milk are convinced that only a very small part—probably only 1 per cent.—of their condensed milk is used as a sole food for infants, and every indirect test (since a direct test is impossible) tends to confirm this view. The other 99 per cent. are used for ordinary household purposes where the absence of fat is either unimportant or even desirable. It is nearly always used undiluted, and in a form which Dr. Coutts admits to be an unfavourable medium for the development of many bacteria. If it were correct, as stated by the Select Committee on Food Adulteration, that machine-skimmed milk was largely used for infant feeding, the effect of the notification on the label that the milk was machine skimmed should have lessened the consumption, but, on the contrary, it increased. It increased still more when a few years ago all the manufacturers who are members of the Condensed Milk Clearing House Association voluntarily decided they would henceforth put on their labels an indication that machine-skimmed milk was not suitable as sole food for infants, and such increase would not have taken place had any large proportion been used for this purpose.

The manufacturers of this article would probably have no objection whatever to stating on their labels that the milk is "not a substitute for mothers' milk," as suggested by you, since they have never sold it for that purpose; but the words which are often suggested, viz., "unfit for infants," are objected to, as it is felt that nine-tenths of the persons who use this milk would assume that what was unfit for infants was also unfit for children and adults, and they would not be able to understand that the unfitness lies merely in the absence of fat, and that the age of the infant is a governing factor. This same article which is nutritively insufficient for a child of 3 months becomes, for a child of 3 years, an excellent food if spread on bread and butter, and, in the case of the poorer classes where cheapness is a leading consideration, it is in this way almost an ideal food. It is certainly better than jam or golden syrup, and cheaper than meat; it contains more proteids than bacon and nearly as much as fat mutton or other meats. The superiority of machine-skimmed condensed milk, used as suggested, over potted "delicacies" is so evident that it is remarkable that medical men have not more often advised it as an item in the dietary of poorer households.

I think it is scarcely fair to conclude your article with the words "the State should step in ..... to render more difficult the commercial game of making things appear what they are not," thus suggesting that the manufacturers of machine-skimmed milk are endeavouring to foster its sale by misleading the public. I believe I am right in saying that they are the only manufacturers who describe as fully the article sold by them, and who point out the uses to which it should *not* be put. Your righteous condemnation of certain commercial methods would apply better to many of the patent foods which are advertised "for infants and invalids," and which are even less suitable than machine-skimmed condensed milk for the feeding of infants, at any rate so far as proportion of fat is concerned. I would refer you to Dr. R. Hutchison's book on "Food and the Principles of Dietetics," and many of your readers who condemn machine-skimmed milk would be surprised to find that patent foods they have recommended are even more incomplete.

I venture to say that no action should be taken with regard to the very limited sale of machine-skimmed condensed milk for infant feeding unless the same tests be applied to all patent or infant foods—whether sold under a fancy or proprietor's name or otherwise—and if a percentage of only ½ per cent. or 1 per cent. of butter fat be a reason for labelling 100 tins of this milk "unfit for infant food" (of which only one is likely to be used for that purpose) that any other so-called "infants' food" which contains too low a percentage of fat shall be labelled in the same way.

I am, Sir, yours faithfully,

CHAS. LEHMANN,
Director, R. Lehmann and Co., Limited.

Monument-street, E.C., Sept. 20th, 1911.

*** We publish this letter with pleasure. The policy of the members of the Condensed Milk Clearing House Association is obviously an upright one, and no praise is needed from us for the honest label which they agreed to adopt. The manufacturers do not object to the use of machine-skimmed milk being discouraged as a substitute for mothers' milk and put words to that effect upon the label. We have already agreed that machine-skimmed condensed milk, apart from its fat, is a valuable food, and our correspondent rightly draws attention to its useful applications in this direction. We agree, also, that there are several preparations upon the market masquerading as foods suitable for the suckling, which are totally unfit for the purpose, not only because they show a deficiency of fat, but because in several of them raw starch is present. On the other hand, some at least of these foods are clearly intended to be used as adjuvants to the milk diet, the directions on the label clearly stating that milk is to be added to the food before it is ready for the infants' use. Such a direction would, of course, appear superfluous in the case of a machine-skimmed product called milk. As a rule, however, the price asked for such foods is a good deal more than that commonly demanded for a tin of machine-skimmed milk. The great cheapness of skimmed condensed milk, which after all, as our correspondent points out, is a by-product in butter-making, is a strong reason for protecting the very poor from ignorantly using it to fulfil cheaply an object which it never can fulfil. The whole question of the sale of infant foods for rich and poor alike calls for a controlling measure to protect the public from acting upon statements which misrepresent physiological facts.—ED. L.

DESICCATED ANTIVARIOLOUS VACCINE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 24th, 1910, there is an annotation, "The Influence of Age and Temperature on the Potency of Diphtheria Antitoxin." This may not have interested the most of your readers, who are within easy reach of manufactories of sera, but for a few thousands who are not so situated it is extremely interesting. In a previous number (May 21st) you had already published "A Note on Desiccated Culture Media," which was, I am sure, welcomed by many of us outsiders. With the same object in view—i.e., to be of service to practitioners abroad—I would call attention to an article published in the *Bulletin de la Société de Pathologie Exotique*, séance du 21 Juillet 1909, tome 2de, No. 7, par Pierre Achalme et Marie Phisalix, entitled "Contribution to the Study of the Preservation of Vaccine in Tropical Countries." The production (manufacture) of this desiccated vaccine appears to be simple, and its activity is guaranteed for one year at least, a future communication being promised as to longer duration. I am surprised that some institute has not taken up its manufacture. It would be a boon to many doctors and others.

In THE LANCET of Nov. 26th, 1910, in an article on "Sanitation in India," attention is called to the difficulty in preserving lymph, even with the use of thermos flasks. In the *Medical Record*, N.Y., May 14th, Dr. Heiser, director of health, at a meeting of the Far Eastern Association of Tropical Medicine, says that glycerinised lymph loses its efficacy in ten days. Previously, in the same periodical, another practitioner made a similar observation. Even in Peru, where there has been a vaccine institute for more than 12 years, there is an extensive field for the use of desiccated vaccine. Some portions of the Republic are more than a month's journey from the capital; many others have no doctor, and even if

tubes of glycerinised lymph are sent the tubes are not used at once, or they may be opened and kept open, and so used for days. In fact, if I were asked, Has small-pox diminished since the establishment of the vaccine institute? I should hesitate in giving an answer. Reliable statistics for years before or after the foundation of the institute are not obtainable. This is perhaps not much to be regretted, as there is a tendency to look askance at statistics, as if one were trying to prove what is untrue.

Here we have not yet arrived at that ultra stage of civilisation which produces antivaccinationists. What we have to contend with are carelessness, curious ideas, and inefficient vaccination. As to curious ideas—immunity to small-pox is conferred by being born in a year of a solar eclipse or a leap year, or being a seventh child, or other equally mysterious "secret of nature"—quite unknown to doctors, but an open book to *sages femmes*. There is another obstacle in the way of vaccination. A rumour gets about that the vaccine is "infested." The people then refuse to have their children vaccinated. I tried to find out what was meant by "infested," but could get no proper explanation. The word had been heard and the people were terrorised. At first I thought it meant that the vaccine was contaminated with syphilis. Against this was the fact that I had never seen a case of vaccine syphilis, and that, 40 or 50 years ago, syphilis might be said to be non-existent here. Within the last 30 years or so this is being remedied (?)—civilisation and its apparently almost necessary accompaniment, syphilisation, have made considerable advances. After puzzling over the "infested" vaccine for some time I came to the conclusion that it meant that the vaccine would cause small-pox. I came to this conclusion as I observed that this rumour got about particularly when there was already an epidemic of variola and one was advising the people to get their children vaccinated. As the children had been visiting or playing with other children convalescent from the disease, it was not strange that they got the disease; if they had been vaccinated two or three days previously, naturally the vaccination was blamed as being "infested."

With reference to inefficient vaccination:—Is it to be expected, especially amongst the poor, that they will take the time or trouble to have their children vaccinated three or four times, seeing that it has not taken? No, they will naturally ascribe the accident to one or other of the above-mentioned "secrets of nature." Many of these evils would disappear if one had a thoroughly reliable vaccine such as this "desiccated" seems to be. As it would be easily carried and would not require constant renewal it might be constantly taken in ocean-going passenger steamers, so, perhaps, saving some lives and shortening quarantines. Explorers might also find it useful for vaccinating their baggage carriers before entering suspected country.

I am, Sir, yours faithfully,

Arequipa, Peru. J. DICKSON HUNTER, M.D. Edin.

INDIGESTION AND CATARRH OF THE THROAT AND NOSE.

To the Editor of THE LANCET.

SIR,—Some years ago I had occasion to point out in your columns that not all coughs and colds were related to disorders of the lungs; indeed, I showed conclusively that cough as a symptom was more often not associated with lung trouble. I pointed out that taking the respiratory tract as a whole and dividing this into the upper respiratory tract and the lower respiratory tract, or all that portion above and below the cricoid cartilage, a very large percentage of cases of coughs were due to affections of the upper respiratory tract, a very few in reality due to affection of the trachea and lung proper. It followed from this that every physician who is called upon to diagnose and treat coughs should be an expert rhinologist and laryngologist.

The amount of medicine that is annually swallowed by patients attending the out-patient departments of our hospitals, who apply for the relief of coughs, is appalling and regrettable. Most of these cases are due to affections of the upper respiratory tract requiring some local application of an astringent or soothing nature. It is unreasonable to conceive that nature would expose a vital organ such as the lung to all the petty troubles and grievances due to the ever-changing conditions of the atmospheric environments. The same argument applies with equal force to the stomach. Indigestion is one of the commonest of troubles, yet in but few cases is the stomach itself at fault.

The alimentary tract extends from the lips downwards, yet the possible causes of indigestion existing in the mouth, nose, and pharynx are mostly ignored. As one who is interested in diseases of the upper respiratory and alimentary tracts one is struck with the quite common associations of catarrh of the upper respiratory tract and indigestion. The relation of these two functions is close and intimate. The respiratory tract crosses the alimentary tract at a point in the pharynx, and both the lungs and stomach are open and liable to be infected and disturbed by abnormal conditions of either the mouth or nose. Septic conditions of the mouth, teeth, tonsils, and other glands, and catarrhal conditions of the nose and post-nasal space are quite common affections in these temperate latitudes.

In post-nasal catarrh and catarrh of the pharynx large quantities of unhealthy germ-laden mucus find their way into the stomach and are a common associate of indigestion of the fermentative or flatulent type. A careful examination of the upper respiratory tract and upper alimentary tract in all cases of coughs and indigestion is thus imperatively necessary if a proper diagnosis is to be arrived at.

I am, Sir, yours faithfully,

Harley-street, W., Sept. 25th, 1911. MAYO COLLIER.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—I have read the correspondence under the above heading, and should like to make a few observations on certain points which it raises.

In the first place it is not easy in these days to sympathise with the writer who thinks that morality is threatened by the campaign against the propagation of degenerates. One understands that society is bound to take care of its "undesirables," but surely there is something morbid in the idea that in this matter "cure" is better than prevention, or that the abolition of some few of the more conspicuous hereditary ailments will leave the philanthropist without a sufficient field for the exercise of his benevolent instincts. Like the parallel argument that to destroy poverty would be to abolish the Christian religion because paupers are required to incite to charity in this world, and to populate the Kingdom of Heaven in the next, the theory may be suspected to be one of those familiar devices under which those who have a vested interest in error are wont to disguise their resistance to salutary change. In saying so I do not, of course, question the sincerity of the writer, who is inclined to look upon eugenists as subverters of morals. Many bad theories have been recommended with the most praiseworthy motives. Many good men have "done harm with the best intentions."

Still more amazing is the opinion favoured by another of your correspondents, which upholds the unrestricted multiplication of the feeble-minded on the ground that the individual, not the race, is the proper subject of moral solicitude. We have hitherto been under the impression that highest reverence is due to the unseen benefactors whose disinterested labours have prepared a happier future for mankind. But this, it seems, is a mistake. Duty is owed only to contemporaries, whose comfort is to be promoted however much it may conflict with the well-being of future generations. The latter may perhaps be entitled to some measure of consideration when to give it would not entail the smallest sacrifice on the part of actually existing people. Thus viewed "in the dry light of intelligence," and apart from sentiment, the doctrine appears so preposterous that it would have been unnecessary to refer to it were it not that the attitude of a good many sociologists towards this question of degeneracy seems to lend it a measure of countenance. Like the fear for morality it is, however, rather a pretext than a creed, and will not, it may be hoped, seriously affect the judgment of the future upon the philanthropy of our age.

A third theory, referred to in your columns—the notion, viz., that in suppressing degeneracy we may be eliminating genius—though in the past supported by high authority, is now admitted to be based very largely upon error. The idea,

e.g., of a connexion between genius and epilepsy, never very widely favoured by physicians, may now be regarded as definitely disproved. Nor are the weak and diseased tendencies, of which genius has been actually convicted, of a kind which any sensible person would regard as prohibitive of marriage. In a quite different category, however, from these is the case in which an individual who possesses genius may have constitutional proclivities which make it likely that his children, if he had any, would be insane or tuberculous or epileptic. Under such circumstances the possibility that genius might be transmitted would be no excuse for the physician who should recommend marriage; nor, *a fortiori*, could the fact that genius has had a tendency to occur in a family which has produced many lunatics be considered to palliate the marriage of a member of such a family who was himself neither a genius nor quite sound mentally. It is significant in this connexion that none of the distinguished men who have advocated the degeneration theory have even hinted that it is wrong to discourage "philoprogenitiveness" in degenerates. It has remained for your correspondent to make the suggestion.

Not only are some of us living in an antediluvian world, in which contemporary tendencies play no part, but we often seem blind to facts of every-day experience. The facts which I have more especially in view are to be met with at any school-attendance committee meeting in our large cities. There, for their part not a little astonished at the special attention they receive, families present themselves, organised on a basis like this. A father who is a drunkard or epileptic, incapable of steady employment, occasionally picking up a few shillings in the lowest lines of casual labour; a wife supporting the family by her earnings; six or seven weak-minded children, who in the necessary absence or frequent confinements of the mother stay at home to do the work of the house. Is this, one is tempted to ask, a fair illustration of the working out of that latest discovery in the higher ethics, the precept, i.e., that we ought to care for the individual and leave the race and the future to look after themselves?

As regards the outlook, were we to judge by the views of some of your correspondents there would indeed be grounds for serious misgiving. For my part I have much confidence in the growth of a saner opinion, of which there are everywhere so many indications, and cannot doubt that, under the pressure of these new ideas, we shall have in the near future a large and wholly beneficent extension of sterilisation as a remedy for the terrible evils from which we at present suffer.

I am, Sir, yours faithfully,

Stoke Newington, Sept. 23rd, 1911. I. B. MUIRHEAD.

THE NOMENCLATURE OF SPINAL DEFORMITIES.

To the Editor of THE LANCET.

SIR,—In your issue of Sept. 2nd appears an article on Spinal Curvatures and their Treatment, &c. Will you allow me space to call attention to the confusing terminology adopted by the author of that article, and to urge upon him and others interested in these deformities the use of a more accurate nomenclature? He writes of several conditions which I will enumerate in turn. 1. In the title of his paper he uses the phrase "spinal curvatures" to include all deformities of the spine—e.g., Pott's angular kyphosis, scoliosis, kyphosis, lordosis, spondylitis, &c. 2. On p. 667, line 23, he uses "spinal curvature" to mean scoliosis. 3. On p. 668, line 9, he writes of "lateral deviation," and in the next line of a "more or less fixed scoliosis" (4) 5. On p. 668, line 47, he writes of "scoliosis." 6. On p. 669, line 23, of "simple lateral deviation." 7. On p. 669, line 24, of "'a curve in the second degree of severity'—that is, a 'true scoliosis,' but not yet fixed" (8). 9. On p. 669, line 40, he uses "fixed curvature" to mean the angular kyphosis of Pott's disease. And finally, (10) on p. 671, line 10, he writes of "lateral curvatures"

Now, Sir, these terms are so used throughout his article that it is very difficult to follow the author's line of thought. Yet by using the simple method I now suggest all confusion would disappear. 1. Omit the phrase "spinal curvatures" of his title altogether and substitute for it "spinal deformities" 2. Write of the deformity produced by Pott's disease as "spinal caries deformity" or "Pott's angular kyphosis." 3. Write of the lateral curvature of the spine in which there is as yet no bony deformity as "postural scoliosis," or "postural lateral curvature." 4. Write of the lateral curvature of the spine in which bony deformity is present as "osseous scoliosis," or "osseous lateral curvature."

Let future authors drop all such terms as "lateral deviation," "more or less fixed scoliosis," "true scoliosis," "fixed curvature," and "a curve in the second degree of severity"; then we shall know exactly what the authors mean.

I am, Sir, yours faithfully,

Harley-street, W., Sept. 25th, 1911. PAUL B. ROTH.

CHRONIC OBSTRUCTION OF THE BOWEL IN A HYDROCEPHALIC IMBECILE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 16th, p. 820, a very interesting case is described under the above heading by Dr. A. L. E. F. Coleman and Dr. H. D. Everington. I should like to point out that this case is a typical example of so-called "congenital dilatation of the colon," better called "congenital hypertrophy and dilatation of the colon" (known in Germany as Hirschsprung's disease). The dilatation and thickening of the bowel were not due, as the authors supposed, to chronic constipation, but were the cause of it. I collected a number of these cases for the Jacksonian Essay of 1908, and they will be found in my book on "Diseases of the Colon."

I am, Sir, yours faithfully,

P. LOCKHART MUMMERY.

Cavendish-place, W., Sept. 20th, 1911.

BRITISH HEALTH RESORTS FOR FOREIGN INVALIDS.

To the Editor of THE LANCET.

SIR,—For the furtherance of a movement which may prove advantageous to two great and friendly countries may I ask you to be so very kind as to inform your readers that, taking cognisance of Dr. Neville Wood's paper "British Health Resorts for Foreign Invalids," read before the Royal Society of Medicine and published in THE LANCET of Jan. 7th, p. 12, the French Government has commissioned me to visit the principal health resorts of Great Britain and to issue a report on their suitability for various categories of French invalids, and at the same time to inquire into the practice and teaching of hydrology in the medical schools attached to universities.

I hope at an early date to arrive in London, where my postal address will be the Royal Society of Medicine, 15, Cavendish-square. Thanking you in anticipation,

I am, Sir, yours faithfully,

GUSTAVE MONOD, M.D. Paris, L.R.C.P. Lond., M.R.C.S. Eng.,

Sept. 23rd, 1911. Médecin Consultant à Vichy.

ANÆSTHETICS IN INTESTINAL OBSTRUCTION.

To the Editor of THE LANCET.

SIR,—Following the publication of my clinical notes (of a death under an anæsthetic) in your issue of May 20th last there were several interesting and valuable comments and suggestions in your correspondence columns. All the methods advised for the prevention of such "drowning fatalities" are quite adequate, but some of them have the defect of being complicated to a degree which must lessen the patient's chance of recovery. I refer more particularly to the operation of preliminary tracheotomy with packing the larynx.

In a recent case of complete obstruction, a very old woman, who had fæcal vomiting, a preliminary injection of morphine ¼ gr. and atropine $\frac{1}{150}$ gr. was given. This produced deep somnolence. After administering a very few drops of chloroform on a flannel mask the operation was begun, and at the same time the mouth was opened and sponged out; some dark matter being present, the œsophageal tube was passed and the stomach

washed out. The tube was retained until the end of the operation, when the stomach was again washed out, and the patient, who showed no evidence of shock, was returned to bed. This simple method of preliminary injection, by causing temporary paralysis of peristalsis, made any massive regurgitation impossible, while so little chloroform was required that the presence of the œsophageal tube was no obstacle to the anæsthetist. The essential detail in this method is to grade the dose of morphine according to the patient's age and general condition. One-sixth of a grain will generally be insufficient, except where the patient is emaciated and exhausted; one-third will be too much, unless the patient is big, robust, and alcoholic. If the first dose of morphine prove insufficient to produce somnolence and intestinal paralysis, any second injection must contain atropine, hyoscine, or scopolamine only.

I am, Sir, yours faithfully,

DONALD J. MUNRO.

Great Portland-street, W., Sept. 25th, 1911.

TOXIC EFFECT OF ASPIRIN.

To the Editor of THE LANCET.

SIR,—In answer to Mr. H. Ewan Waller's letter in your issue of Sept. 23rd, I cannot say that either person whose symptoms of aspirin poisoning I mentioned showed signs of minor thyroid inadequacy, but it is perhaps noteworthy that the male patient usually has a brachial blood pressure of only 65 mm. Hg. I am, Sir, yours faithfully,

ALEXANDER BROWN, M.B. Lond.

Bartholomew-road, N.W., Sept. 23rd, 1911.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Recommendations by the Bristol Health Committee.

A REPORT from the Bristol health committee to the city council contains certain very important recommendations. A decision in favour of compulsory general notification of phthisis is urged, as well as the adoption of the Notification of Births Act, 1907, and the transference of the administration of the Midwives Act, 1902, from the watch committee to the health committee. The committee further recommends the appointment of a qualified lady practitioner at a salary not exceeding £100 per annum, to act under the medical officer of health as supervisor of the midwives, the lady health visitors, and such helpers as may be provided by voluntary organisation with the approval of the committee; and it also asks to be authorised to appoint two lady health visitors at salaries not exceeding £80 per annum each, to visit the homes of the poorer classes and give advice as to the care and management of infants and of the homes generally, and to report to the lady practitioner such cases as may require medical advice and assistance. These recommendations prove that the committee and the medical officer of health are impressed with the value of the work done by the school for mothers (to which allusion has been made more than once in these columns), work which they are seeking to promote on a municipal basis by means of the steps recommended.

Bristol Eye Hospital.

Mr. Edmund King, chairman of committee to the Bristol Eye Hospital, has issued an appeal to the public in which he states that, Sept. 30th being the end of the hospital's financial year, the committee finds with regret that it is likely to end the year with a deficit of £700 on the current account, unless this sum is speedily made up by donations. This is partly due to the fact that there have been no large donations towards expenses during the past year.

Hydrophobia from a Fox-bite.

Mr. Richard Bower, master of the South and West Wilts Hunt, died at Sutton Veny, near Warminster, on Sept. 22nd, from a disease stated to be hydrophobia. He was ill only five days. His fatal illness is attributed to the fact that some months ago he was bitten by a fox.

The Gloucestershire Memorial to the late King.

The total amount subscribed to the Gloucestershire Memorial Fund to the late King is £2932. After deducting necessary expenses, the balance will be invested and the income applied towards the promotion of nursing in the county, including the city of Gloucester.

Proposed Memorial Hospital to the late Sir Charles Dilke.

At a large meeting held in Cinderford, Gloucestershire, it was decided to erect a general hospital in the Forest of Dean as a memorial for the political and other services rendered by the late Sir Charles Dilke during his 20 years' political connexion with the district. A committee composed of members of both political parties has been appointed to further the object, and Mr. H. Webb, M.P., stated that there were people in all parts of the world who would welcome the opportunity to aid such a scheme.

The Devon County Asylum.

At a meeting of the Devon county council, held on Sept. 21st, it was stated that Miss Enid Walters, M.B., B Sc. Lond., had been appointed fourth assistant medical officer and pathologist to the Devon County Asylum at a salary of £130 per annum, rising to £140. Lord Clifford said that the asylum committee had never had a lady medical officer appointed before, and the committee was divided about the appointment. Another speaker remarked "that they could not get a male medical officer because of the remuneration offered."

The Devon County Council and the Treatment of Tuberculosis.

At the last meeting of the Devon County Council it was decided to draw the attention of all sanitary authorities in the county to the extensive powers conferred upon them by the Public Health Acts, including the provision of dispensaries for the benefit of persons suffering from tuberculosis. It was also decided to expend £25 on the distribution of suitable pamphlets on the subject at the discretion of the county medical officer of health.

The Exeter Sanatorium.

The Exeter sanitary committee has recommended that permission should be obtained from the Local Government Board to borrow £15,500 for the purpose of enlarging the city sanatorium. It is proposed to enlarge the existing administrative block of buildings and to erect an observation and discharge block; scarlet fever block, with wards to accommodate 22 patients; nurses' rooms and bathrooms; block with wards for diphtheritic cases, to contain 14 beds; a block for enteric fever cases, with eight beds; a laundry, mortuary, stables, ambulance shed, and other necessary offices.

Infantile Cholera at Plymouth.

At the last meeting of the Plymouth borough council Mr. W. Paul Swain stated that 29 infants, aged from 2 to 3 months, who were suffering from "choleraic diarrhœa," had been treated at the corporation hospital from Sept. 2nd to 11th with sea-water injections. Of this number two had died, one from pneumonia (contracted before admission) and the other from diarrhœa. Mr. Swain considered the results eminently satisfactory, as all the children admitted were in a very serious condition. He added that the removal of the infants from unwholesome surroundings and the hospital treatment might have been important factors in their recovery.

A Health Visitor for Devonport.

Acting upon the recommendation of its medical officer of health (Mr. O. Hall), the Devonport borough council has appointed a health visitor and school nurse, with the object of reducing the infantile mortality in the town.

A Board of Guardians' Subscription to an Infirmary.

The Local Government Board has sanctioned the proposal of the Barnstaple (Devon) board of guardians to subscribe £78 to the funds of the North Devon Infirmary.

Proposed Public Abattoirs for Weston-super-Mare.

A Local Government Board inquiry was recently held at Weston-super-Mare (Somerset) into the application of the urban council for permission to borrow £3405 for the purchase of land for the purposes of public abattoirs.

A Workhouse Medical Officer and Anæsthetics.

At the last meeting of the Bridgwater (Somerset) board of guardians it was decided to allow Mr. Penrose Williams, the medical officer to the Workhouse Infirmary, the sum of

10 guineas for one year for the purpose of covering the expense of an anæsthetist in necessary cases.

Tuberculosis Shelters for Tiverton Isolation Hospital.

The Tiverton town council and the Tiverton rural council, the authorities controlling the Tiverton Isolation Hospital, have decided to place shelters for the treatment of consumptive patients in the grounds of the institution. The Tiverton Association for the Prevention and Cure of Consumption will provide the shelters. The patients will be charged for their treatment if they are in a position to pay, otherwise the expenses will be defrayed out of the rates. The Local Government Board has approved of the scheme provided proper precautions are taken.

Death of Surgeon-General C. K. Colston, I.M.S.

Surgeon-General C. K. Colston, of the Indian Medical Service (retired), died at his residence in Teignmouth (Devon) on Sept. 21st, aged 78 years. After his retirement he took up his residence at Teignmouth, where he soon became very popular. He took a great interest in all local matters connected with the town, and more especially in matters connected with education. He was for some years a member of the old Teignmouth School Board.

Death of Surgeon-Major John Raby, I.M.S.

Surgeon-Major John Raby, I.M.S. (retired), who accidentally poisoned himself with an overdose of a narcotic at Paignton recently, qualified as L.R.C.P. & S. Edin. and M.R.C.S. Eng. in 1865, and had been retired from the Indian army for many years. He saw active work in the Abyssinian expedition, and for his services received official recognition from the Government of India. Before going to Paignton he had resided for a long time at Taunton, where he was very popular. He was a great sportsman and very well known in the hunting field and took many prizes at horse shows. He was a successful competitor at various steeplechases in the West of England. Surgeon-Major Raby was highly esteemed at Paignton and much sympathy is felt there for his widow and family.

Sept. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Dr. James Andrew.

THE death of Dr. James Andrew, which took place on Sept. 19th at Edinburgh, has removed from the medical profession in Edinburgh one of its senior members and from the public a much-esteemed physician. Dr. Andrew, who was the son of the late Dr. James Andrew, a well-known physician of his day, received his medical education at the University of Edinburgh and afterwards studied in Vienna and Berlin. He graduated in the University of Edinburgh in 1866, when he took the M.B. and C.M. degrees, receiving the M.D. degree two years later. In 1869 he became a Member, and in the following year a Fellow, of the Royal College of Physicians of Edinburgh. He was President of the College from 1898 to 1900. For five years he was one of the managers of the Edinburgh Royal Infirmary, and was a member of the Scottish branch of the Queen Victoria Jubilee Institute for Nurses. Among the many medical appointments which he held were those of physician and physician-accoucheur to the Royal Dispensary, Edinburgh, examiner in medical jurisprudence to the Royal College of Physicians of Edinburgh, physician to the Royal Asylum for the Blind, physician to the Royal Hospital for Sick Children, Edinburgh, and lecturer on diseases of children at the University of Edinburgh. He was a Fellow of the Obstetrical Society of Edinburgh, a member of the Harveian Society and also of the Royal Medical Society of Edinburgh. For some years Dr. Andrew had been in failing health, and two years ago he retired from active practice. He had always taken the keenest interest in everything pertaining to his profession, and his death will be felt as a personal loss by a very large circle of friends, both medical and lay.

Sanitary Association of Scotland.

The annual congress of the Sanitary Association of Scotland was held at Oban last week, where a very pleasant and also profitable few days were spent. Dr. John Glaister, professor of public health at the University of Glasgow, read a paper on the Latest Aspects of the Problem of Tuberculosis. He said that it had now come to be recognised that the potent factors in the development of tubercular disease were not so much the condition of the soil or altitude of a place as the intimate home life of a people and the conditions of their employment, environment, and consanguinity. The country generally was beginning to recognise the importance of the adoption of reasonably uniform administrative measures for the repression of the disease. The sanatorium was of great service, but it was not suited for all kinds or degrees of cases, and he thought that too high hopes had been built on the sanatorium as a curative institution for phthisis. There was certainly a crying need for the isolation of phthisical patients in the expectorative stage, and also in the hopeless stage, but although sputum was one source of infection, he thought too little emphasis was laid upon the transmissibility of the disease by milk and fresh meat. In his opinion there should be systematic periodic inspection of milk cows by the tuberculin test, compulsory notification to a central authority of all affected animals, destruction of all animals so diseased as to be able to transmit the disease to other animals, and complete isolation of animals slightly affected, and the slaughter of these as the disease tended to develop. Local authorities, rural and urban, should jointly or severally appoint full-time veterinary officers to carry out these duties. Also the Government should by statute empower the Local Government Boards of the United Kingdom to issue regulations and to see that they were carried out, for a uniform system of meat inspection, so that the present conflicting practices should cease. He added that it was futile to expect much further reduction in the total number of cases of phthisis unless notification and provision of hospital and sanatorium treatment became general. Another paper was read on "The Milne Treatment of Scarlet Fever," and after discussion the following conclusions were arrived at: That the value of hospital isolation in the case of scarlet fever had been greatly over-estimated; that more discrimination should be exercised in the selection of cases for removal to hospital; that the Milne treatment of cases in hospital was not justified by the results (but it must be remembered that Dr. Milne's treatment was proposed for cases dealt with *in situ*, not for cases treated in a fever hospital); that the Milne treatment, with any modifications which might suggest themselves, should have a fair trial over the country in cases retained at home which would otherwise be removed to hospital, the particulars being precisely noted. But it was pointed out that it was generally only in towns, where a nurse or nurses could carry out or superintend the treatment of the patients, that the home treatment could be efficiently carried out. "The Difficulties of Sanitary Administration in the Highland Counties" formed the subject of another paper, which was highly interesting in relation to the recent melancholy exposure of sanitary conditions prevailing in Lewis. The difficulties were partly due to geographical conditions, and partly also to the impossibility of removing wholesale the houses which existed in so many Highland villages, which had been handed down from past generations who possessed very crude notions as to sanitation and general hygiene. The great need there was money, and the Government would have to realise that there were cases where the district or parish had not the funds to fulfil the requirements of the Public Health Acts. In these cases it was not only logical, but necessary, that the responsibility should fall back on higher powers—on the counties, and failing them on Parliament. If they got the powers of the Board of Agriculture enlarged and defined so that they could deal with these matters steps might be taken to remove the difficulties which at present existed, and to improve to some definite extent the sanitary condition of the Highlands. It was suggested that a small deputation should wait on the Secretary for Scotland, and after some discussion the suggestion was remitted to the executive committee.

Glasgow Tuberculosis Exhibition.

The Scottish Exhibition at Glasgow, like various other large modern exhibitions, has a section devoted to tuberculosis. This exhibit was opened on Friday, Sept. 22nd, by the Duchess of Hamilton, under the presidency of the Lord Provost of Glasgow, Sir A. McInnes Shaw. An address was given by Sir James Crichton-Browne.

Sept. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Report of the Local Government Board for Ireland.

The annual report of the Local Government Board contains much interesting information concerning the work of the Poor-law Service in Ireland. The removal of the pauper disqualification in connexion with old age pensions had a marked effect on the statistics of poor relief. In one week at the beginning of the year the workhouse population diminished by 3512, and the number in receipt of outdoor relief by 15,391. It would seem, however, that many of those who left workhouses early in the year shortly returned, for at the end of March the number of aged infirm in workhouses was only 2187 less than in the previous year. The average pauperism for the year was 20·9 per 1000 as compared with 22·4 in the previous year. The number of children boarded out or in certified schools was 2623, being 58 less than in the previous year, while there were 5213 healthy children in workhouses. Both the Vice-Regal Commission and the Royal Commission have declared that maintenance in workhouses should no longer be recognised as a legitimate method of dealing with children. The number of mentally afflicted in workhouses has diminished by 90, but there are still 2230 other than those sick in hospital, confined in workhouses. The deaths in workhouses were 10,406 in number, of which 1548 were due to phthisis. The deaths of 15 centenarians were recorded 781 infants under one year old died and 408 from 1 to 5 years of age.

The total amount spent on poor relief in the year was £1,361,062. Of this amount a sum of £118,793 was spent in salaries to permanent and temporary dispensary medical officers. The total number of patients attended was 642,759, of whom 479,644 were seen at dispensaries, and 163,115 at their own homes. The number of vaccinations and revaccinations performed was 81,412. The Board notes continued niggardliness in the matter of the granting of pensions to medical officers. In one instance, in the year under review, a medical officer with an excellent record of over 40 years' service and eligible for a pension of £207 8*s* 2*d*. was awarded £80 a year by the guardians. As is pointed out, "pensions are a reward for past good services, and should be regarded as deferred pay and not as compassionate allowances."

Having recalled the case of a medical officer who was deprived of office on account of having been reported by an election court for bribery at a Parliamentary election, the Board make the following somewhat astonishing comment: "We consider that Poor-law medical officers, owing to the nature of their duties and responsibilities, should act with respect to the election of Members of Parliament with the same degree of reserve that members of the permanent Civil Service observe at such elections, and that they should refrain from interfering in such contests beyond exercising any statutory right to vote they may possess. A similar line of conduct should, we think, be followed by medical and other Poor-law officers in connexion with the local elections for Poor-law guardians and councillors."

Only one case of small-pox occurred during the year. There were several outbreaks of typhus fever in the counties Galway and Clare, and several cases occurred in the towns of Waterford, Dublin, Galway, and Arklow. In the causation of enteric fever milk had a prominent part. In Dublin last winter, 50 cases were definitely connected with the milk-supply of two inter-related dairies. Two outbreaks in the north of Ireland were traced by Dr. B. O'Brien to carriers. In 1908 the Local Government Board promulgated the "Dairies, Cowsheds, and Milkshops Order," designed to safeguard the health of the community from insanitary milk supplies. In only 244 out of 309 sanitary districts have any steps been taken to obey the terms of the Order.

The Board notes with regret the retirement from its inspectorships of Surgeon-Colonel D. Edgar Flinn, who was appointed Chief Inspector of Industrial Schools and Medical Member of the Prisons Board, and of Dr. C. J. Clibborn, under the 65 rule. Their places have been filled by Dr. C. J. MacCormack and Dr. Brian O'Brien.

Belfast and the late Sir Robert Hart.

It is with deep regret that Belfast has learned the death of Sir Robert Hart. In many respects he was by far the most remarkable Ulsterman of the last century; indeed, his romantic career is only equalled by that of Sir Hans Sloane, the founder of the British Museum, who came from the same province, and who was a member of the medical profession. Born in 1835 at Portadown, Sir Robert Hart was a brilliant student of Queen's College, Belfast, and in 1854 he joined the British Consular service in China, and in 1863 was appointed inspector-general of foreign customs and took up his duties at Peking. From this time forward his career is history and need not be recapitulated here. It is enough to say that no foreigner ever wielded such influence as he did in China, and no person ever occupied a more important position in the East than did this brilliant Irishman. Sir Robert Hart married in 1866 a daughter of Dr. Alexr. Bredon, a well-known medical man who practised in Portadown. In 1908 he revisited Belfast and received the freedom of the city. He was a pro-Chancellor of the Queen's University of Belfast, and now, owing to his death, as well as to the decease of Judge Shaw, who was appointed pro-Chancellor in the place of Sir Donald Currie, one of the four who occupied that position only one is left, Lord Pirrie, K.P. It is a remarkable fact that Ulster has contributed three ambassadors to China (in addition to Sir Robert Hart, who was not during the greater part of his career in the English service): Lord Macartney, the first ambassador; Sir Henry Pallinger, Bart.; and Sir John Jordan, who is now the *doyen* of all the diplomatic representatives in Peking, and who was only two years old when Sir Robert Hart, in 1854, entered the consular service in China. Like Sir Robert Hart, Sir John Jordan is an honorary freeman of the city of Belfast.

Sept. 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Drinking Water of Paris.

IN a previous letter[1] I referred to the difficulties encountered each year by the city of Paris in furnishing its inhabitants during the hot spells with an adequate supply of pure drinking water. I called attention especially to the suffering that has been occasioned by the lack of water this year. If, however, as the season passes, the immediate preoccupation with the matter is relaxed, the proper authorities have not lost sight of it, but are giving it their continued attention. The best means of disposing of this problem with the most satisfactory results consists of leading new water sources into the capital. Recently water has been taken from Lake Geneva for analysis with this end in view. On the other hand, at a meeting of the Council of Hygiene Dr. Chantemesse, member of the Academy of Medicine and a professor of the Faculty of Medicine, read a letter from the Prefect of the Seine, who stated that a preliminary project was under consideration for a supply from the sources of the Voulzie, the Dutreint, and the Dragon. This plan would increase the supply of potable water by from 65,000 to 70,000 cubic metres daily. After the reading of this letter Professor Chantemesse, in a report thereon, formulated conclusions favourable to the adoption of this plan, and after some discussion the report was adopted.

Deaths of Dr. Courtault and Dr. Brouardel.

Some years ago an interesting medical enterprise was established under the title of the *Maison des Médecins*, concerning which I have already written. The president was Dr. Courtault. This new enterprise, which already is working well, has recently sustained a great loss in the person of its president. Dr. Courtault was very fond of the sea, and was taking a voyage as ship's surgeon on board the *Emir*. After a trip to Algeria the vessel was spending an evening at Gibraltar, when, during the night, the *Emir* was run into by the *Silverton* and sank in 700 metres of water in a minute. Dr. Courtault perished immediately. The medical profession has been saddened also by another death, in this case

[1] THE LANCET, August 12th, 1911, p. 428.

that of a martyr to professional duty. Dr. Louis Brandet, professor of anatomy at the Medical School of Rheims, contracted from one of his patients a malignant anthrax of so severe a nature that he succumbed.

The Crusade against Tuberculosis in the Marine.

The fight against tuberculosis, a disease that reaps annually a large number of victims among seamen, needs pursuing in the interests not only of the patients themselves, but still more in those of the ship's crew as a whole. The Minister of Marine, M. Delcassé, has appointed a commission to inquire into all the means of arresting the progress of tuberculosis among both the ships' crews and the workmen in the naval depôts. Modern ships with their excess of warmth in the cabins are foci of pulmonary congestion and consequently of tuberculosis. It is the same in the arsenals, the construction of which is for the most part antiquated and devoid of any reference to hygienic principles. The sea services are to be rigorously barred to the tuberculous; persons attacked with the disease will either be sent to their homes or isolated. The existing sanatorium at Trébéron, near Brest, is reserved for patients coming from northern ports, and the construction of a similar institution in the south is under consideration to receive those patients coming from Toulon or Rochefort. As to the incurables, the Marine Service will ask from Parliament power to grant them in a comprehensive measure either proportionate pensions or assistance.

Sept. 26th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Syphilitic Affections of the Heart.

AT the last meeting of the Berlin Medical Society before the summer vacation Dr. Breitmann of St. Petersburg read a paper on Syphilitic Diseases of the Heart and their Treatment. He said that syphilis of the heart had no specific symptoms, but that the combination of certain symptoms and the mode of their development were characteristic. According to him the following manifestations made a syphilitic affection very likely: (1) rapid development of cardiac disease without pyrexia or other acute symptoms; (2) enlargement of the cardiac dulness and hypertrophy without an obvious cause; (3) the existence of a severe affection of the heart simultaneously with the absence of valvular symptoms, œdema, or pain; (4) early development of arterio-sclerosis; (5) the presence of other syphilitic symptoms, such as exanthemata or gumma, together with the cardiac affection; (6) a positive Wassermann reaction; and (7) the good result of specific treatment. The diagnosis of syphilis of the heart is of great importance, because treatment commenced in good time gave excellent results, whilst a delay might lead to early death. Sudden death was observed by Dr. Breitmann in from 33 to 50 per cent. of the cases, especially after bodily exertion or over-indulgence in alcohol. Endarteritis was frequently present in those cases. Every case of angina pectoris during the younger period of life was open to the suspicion of syphilitic origin. With respect to treatment, Dr. Breitmann said that the first thing to be done was to strengthen the heart; narcotics, anæsthetics, hydrotherapy, massage, and every form of treatment requiring exertion should therefore be avoided. In sclerosis of the coronary arteries the administration of digitalis might be directly fatal. The development of troubles of the circulation in syphilitic diseases of the heart must be combated by mercurial treatment, which usually made the threatening symptoms disappear; afterwards the administration of iodine was necessary. Salvarsan having a tendency to weaken the action of the heart was absolutely contra-indicated in syphilitic diseases of that organ. In sclerosis of the coronary arteries and in myocarditis cardiac failure might follow the administration of salvarsan.

The Indications of the Wassermann Reaction in the Treatment of Syphilis.

At the same meeting of the society Professor Plehn, physician to the Urban Hospital in Berlin, read a paper on the practical application of the Wassermann reaction in the treatment of syphilis, especially in the tertiary form. He said that in order to test the efficacy of the Wassermann reaction it had been performed in 200 cases under his care, the patients including not only persons suspected to be syphilitic, but also others suffering from a variety of diseases, such as rheumatic affections, arterio-sclerosis, nervous diseases, &c. In 139 of these cases there was no previous history of syphilis, and the reaction in these cases was negative. In seven cases, however, the reaction on being made several times was alternatively positive and negative without any antisyphilitic treatment. In two of the cases there was a history of chancre, but there were no discoverable syphilitic symptoms, the patients having been brought to the hospital for an apoplectic seizure and for neuralgia of the trigeminus nerve respectively. In one case the post-mortem examination did not show any sign of syphilis, although there had been a well-marked positive Wassermann reaction; on the other hand, in four cases syphilis was recognised at the post-mortem examination, although the reaction had been negative. Of nine patients, aged between 55 and 75 years, without any suspicion of syphilis in their history and without symptoms of that disease, the reaction was negative in five and positive in four cases. With respect to diseases of the central nervous system Professor Plehn said that of three tabetic patients having no history of syphilis two gave a negative and one a positive reaction. Of four tabetic patients with a syphilitic history three gave a positive and one a negative reaction; the blood of four patients with general paralysis gave a negative reaction, but the cerebro-spinal fluid of one of them gave a positive reaction. Of two patients with tabo-paralysis one admitted but the other denied having suffered from syphilis. In all these cases the reaction was repeated six times, always with the same result. Patients suffering from arterio-sclerosis gave in the majority of cases a negative reaction. Professor Plehn expressed the opinion that in cases where the Wassermann reaction had been positive, although neither manifest syphilitic symptoms were present nor was there any history of syphilis, the explanation was that syphilitic infection had taken place at some former time, but with symptoms so insignificant that the patient had not noticed it, and that the disease had subsided without any treatment. Spontaneous recovery from syphilis was more frequent, he said, than was believed. The opinion that syphilis remained in the active state as long as the Wassermann reaction was positive, and that the treatment must be continued till the reaction became negative, was an error; a negative reaction obtained after antisyphilitic treatment might again become positive and a negative reaction did not always mean a definitive recovery. On the other hand, the reaction might be always positive without any concurrent clinical phenomena, so that a positive reaction did not prove the syphilitic nature of suspected symptoms. Professor Plehn concluded that the utmost precaution was necessary in using the Wassermann reaction for differential diagnosis, because the results obtained were often misleading, and it must never by itself be accepted as an indication either for or against specific treatment, except in the early stages of the disease.

Sept. 25th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Public Health Exhibit at the Toronto Exhibition.

UNDER the direction and management of Dr. W. S. McCullough, chief health officer of Ontario, an excellent public health exhibit was held at the recent Toronto annual exhibition. This was a development of the travelling tuberculosis exhibit which was established by the Ontario Board of Health some few years ago. The exhibit this year embraced a large variety of subjects, and although the space allotted was limited the display was remarkably good. The Provincial Board of Health of Ontario showed a collection of well-mounted photographs of sanatoriums in Great Britain, Germany, Scandinavia, the United States, and Canada, together with models of tents, sanatoriums, and huts for the care of consumptives. The Toronto Health Department displayed charts, banners, and literature. Perhaps the outstanding feature of the exhibit was the contribution of the United States, and

especially the charts and mechanical models lent by the Department of Health of Chicago. Dr. C. St. Clair Drake of Chicago, the designer of the models, was in charge. The first model was illustrative of infant mortality in Chicago, and took the form of a revolving cylinder worked by clockwork. A succession of dolls appeared, and every fourth doll was destroyed by a figure representing the Angel of Death. Another model illustrated ventilation and its lack. Two rooms of the same size were shown in which were dolls in beds. By means of an ingenious contrivance vapour was seen to issue from the noses of the dolls at the ordinary breathing rate. One of the rooms had its doors and windows open and the atmosphere remained clear, while in the other room, where windows and doors were closed, the air was soon seen to be quite thick. These models excited great interest and thus the desired object was attained. It was instructive to listen to the questions and comments of the crowd of women who continually surrounded these practical demonstrations during the exhibition. In a commodious theatre, situated in the women's building, a series of health talks was given daily by men and women versed in preventive medicine. The lectures were illustrated by pictures on a screen, showing good and faulty milk conditions, the danger of flies, &c. Among the lecturers were Dr. Charles Hastings, Dr. Helen MacMurchy, and Dr. Connell of Kingston. Great interest was manifested in these lectures, and such instruction of the general public in the causes and modes of prevention of disease should bear good fruit.

Hospitals of Toronto.

The buildings of the new General Hospital of Toronto are being proceeded with rapidly. The administrative block and the surgical and medical wings which face College-street are externally nearing completion, and the façade is imposing and workmanlike if not altogether a thing of beauty. It is stated that the pathological wing will be completed and ready for occupation on Oct. 1st. The new Western Hospital on Bathurst-street is rapidly approaching completion; so also is the addition to St. Michael's Hospital, which will more than double its in-patient accommodation. The city of Toronto is about to construct a large modern isolation hospital. Lastly, a private hospital with ample accommodation will soon be opened.

Resignation of Dr. Charles Sheard.

Dr. Charles Sheard, who recently resigned the medical officership of health of Toronto, has now also resigned the professorship of preventive medicine in the Medical Faculty of Toronto University. Dr. Sheard had been a lecturer at the University since 1882, and as an exponent of public health matters his experience and ability enabled him to put his knowledge into clear and forcible language.

Sept. 19th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The New Union Health Organisation.

THE names of the health officers for the Union have now been announced. Dr. F. A. Arnold is appointed medical officer of health for the Union, stationed at Pretoria; and Dr. J. A. Mitchell, Dr. L. G. Haydon, and Dr. P. T. Adams the assistant medical officers, stationed respectively at Cape Town, Durban, and Bloemfontein. Dr. Arnold entered the service of the late Transvaal Government in 1905, when he was appointed a district medical officer and shortly afterwards assistant medical officer of health for that colony. He became medical officer of health in January, 1910, in succession to the late Dr. Walker. Dr. Mitchell has been the assistant medical officer of health for Cape Colony since 1901, Dr. Haydon the assistant port health officer, Durban, since 1904, and Dr. Adams the assistant medical officer of health, bacteriologist, and analyst for the Orange River Colony since 1903. The profession in South Africa will extend its cordial congratulations to these officers on their new appointments, though it can hardly fail to continue its opposition to the Ministerial policy which these appointments imply. Ever since the retirement on pension of Dr. George Turner, the medical officer of health for the Transvaal has been purely an advisory officer, and the actual administration of public health in that colony has been relegated to a comparatively junior clerk in the department of the Colonial Secretary and, since Union, of the Interior. It is public knowledge that the appointment has been a sinecure without any real work or responsibility. It is feared that this will be the case also with the new appointment of medical officer of health for the Union. In any event, in his new capacity Dr. Arnold will hardly ever be able to leave his headquarters and to get into touch with the needs of the country or even of the province in which he is stationed, and the same remark applies also to the assistants. Thus Dr. Mitchell has been appointed also the administrator of the Food and Drugs Act in the Cape Province, work which, though probably trifling in amount, would seem effectually to prevent him from travelling. Dr. Haydon is apparently to continue his port health duties, and Dr. Adams is to continue in charge of the bacteriological and analytical laboratory at Bloemfontein. These officers therefore will obviously not be available for many public health duties outside the respective towns in which they are stationed. It is understood that the assistant medical officers are not to be under the control of Dr. Arnold, but will each be directly responsible to the lay officials in the Department of the Interior. Moreover, the work is to be concentrated at Pretoria, to which all communications on public health matters, including the returns of notifications of infectious diseases by local authorities, have now to be addressed, in direct violation of existing laws. In other words, the Government has adopted a system of administration which, besides being illegal in certain provinces, has been condemned by leading men, commissions, public bodies, and the medical profession in South Africa after prolonged trial, and seems in bringing such system into operation to have deliberately tied down the technical officials to the towns in which they are stationed, so as to prevent them from undertaking useful and urgently needed work at other centres.

The Census Returns.

The unaudited figures for the Census of the Union were published a few days ago in the form of a Government Blue-book. An examination of these figures shows that the population has increased by 15·12 per cent. since the Census in 1904. Europeans have increased by 14·44 per cent., natives by 16·19 per cent., and all other coloured races by 9·84 per cent. The total other than European population has increased by 15·31 per cent. during the septennium. Whilst the latter rate may be said to represent almost entirely the natural rate of increase amongst the coloured races, this cannot be stated of the European rate, for in this case the figures are vitiated by the effects of immigration and emigration. Unfortunately, no steps can be taken for ascertaining the exact rate of the natural increase in Europeans, for the immigration and emigration statistics are quite unreliable. It is believed, however, that the emigration has far exceeded the immigration during the period. In 1904 in the territories of the Union the white population numbered 21·58 per cent. of the whole. This position has been practically maintained, for on May 7th the European population numbered 21·45 per cent. of the whole. In other words, the white man has barely maintained his position in South Africa. From this point of view it was inevitable that the Cape returns should prove the least satisfactory of the four provinces, for the prolonged depression was undoubtedly felt most acutely at the Cape, and during the period of retrenchment a very large number of people emigrated. Moreover, the revival of industrial activity on the Rand took place before the effects of the depression had passed away, and naturally there was an exodus from centres where employment was hard to obtain to the centre where there was a demand for labour. In the Cape Province the white population shows a growth of only 3436, or 0·59 per cent., while the total coloured population has increased by 149,784 persons, or 8 18 per cent. Natal for similar reasons has remained almost equally stagnant in respect of its white population, which has increased merely by 1473 persons, or 1·52 per cent., while the total coloured population in this province has increased by 81,731, or 8·08 per cent. The Transvaal population now numbers a European population of 420,831, an increase of 41·56 per cent., and the Free State has increased its white inhabitants by 22·96 per cent. to 175,436. The other than European population in these two provinces have increased 29·11 and 43·67 per cent. respectively.

The figures for the two sexes show that the females

within the Union have increased somewhat more than the males, the latter having increased since 1904 by 14·44 per cent. as compared with 15·85 per cent. in respect of the former. Thus the number of females in the Union to every 100 males is now 94·11 as compared with 92·97 in 1904. European males have, however, only increased 8·08 per cent. as compared with 22·81 per cent. the rate of increase for European females. In the case of the other than European population, however, the rate of increase has been 16·42 per cent. for males and 14·19 per cent. for fema'es. The number of females to every 100 males in the Union is for Europeans 86·18 per cent. as compared with 75·84 in 1904, and for other than Europeans 96·40 per cent. as compared with 98·28 per cent. in 1904. But when one comes to examine the figures for the four provinces it is seen at once how the depression in trade has operated on the Coastal Provinces. Thus in the Cape of Good Hope the European male population has actually diminished by 16,825, a decrease of 5·28 per cent., and in Natal by 3927, or 6·92 per cent. In these provinces European females increased by 7·76 and 13·38 per cent. respectively. On the other hand, in the Transvaal and Free State the European male populations increased by 33·12 and 15·99 per cent., and the European female populations by 54·2 and 32·25 per cent. respectively. And in the Cape and Natal the other than European male populations only show an increase of 6·04 and 4·23 per cent. as compared with the corresponding rates of increase for females of 10·27 and 11·75 per cent. respectively. In the Transvaal the rate of increase has been for coloured males 39·13 per cent., and coloured females 17·38 per cent. In the Orange Free State the rate of increase for coloured males has been 43·29 per cent., and for coloured females 44·09 per cent. The number of females to every 100 males in the Cape of Good Hope is for Europeans 93·28, as compared with 82·00 in 1904, and for the coloured races 107·37, as compared with 103·25 in 1904. In Natal, for Europeans 86·6, as compared with 71·09 in 1904, and for the coloured races 112·41, as compared with 104·84 in 1904. In the Transvaal the proportion is for Europeans 77·35, as compared with 66·78 in 1904, and for the coloured population 72·14, in contrast to the proportion in 1904, when it was 85·51. In the Free State the proportion is 85·42 for Europeans, as against 74·91 in 1904, and 90·85 for coloured, as compared with 90·34.

The changes which have taken place in the European populations are largely accounted for, as already stated, by the depression in the Coastal Colonies and the fact that the mining areas in the inland colonies are becoming more and more settled communities. The emigration of Europeans from the Cape and Natal was largely amongst unmarried men, whilst besides the large influx of European males to the mining areas there was a proportionately greater immigration of European females. The changes in the sex composition of the coloured populations of the four provinces are, of course, explained by the fact that very much larger numbers of coloured males from the Cape and Natal are now working on the Transvaal mines than was the case in 1904. As far as particular areas are concerned, it is of interest to note that in the Cape Peninsula (excluding Simonstown) the total European population decreased by 20,233, or 17·92 per cent., and that the coloured population increased by 6412, or 7·23 per cent., resulting in a net decrease in the total combined population of 13,821, or 6·86 per cent. On the other hand, the European population of the Witwatersrand increased by 72,624, or 60·25 per cent.; whilst the coloured population of this area increased by 150,218, or 99·58 per cent. The following table shows the population of the different provinces of the Union on May 7th last, viz. —

Province.	European.	Native.	Other coloured.	Total.
Cape of Good Hope	583,177	1,545,308	434,539	2,563,024
Natal	98,582	951,808	141,568	1,191,958
Transvaal	420,831	1,224,155	31,625	1,676,611
Orange Free State	175,435	339,811	11,660	526,906
Total	1,278,025	4,061,082	619,392	5,958,499

Johannesburg Hospital.

The management of the Johannesburg Hospital has recently come in for a good deal of criticism in the lay press, and in particular allegations have been made of undue delays in the attending to casualty patients. These were investigated by a committee appointed by the board of management, which reported that the complaints were without foundation. At the same time, however, it has been recommended, and the board has agreed, that two wards in the main block should be appropriated and converted to the uses of a casualty ward and receiving room with necessary offices. It would thus seem as if there may after all have been some justification for the newspaper crusade against the hospital. It is understood that the authorities at this hospital have agreed to take in insane patients from Oct. 1st, the date when the new Prisons and Reformatory Act comes into operation. In this Act it is, *inter alia*, provided that into no jail of any district in which there is a public hospital or asylum shall any lunatic or alleged lunatic be admitted. Hitherto all such cases, if not kept under observation in their own homes pending removal to the asylums, have been detained in the jail hospitals. In view of the new Act the Government has approached hospital boards with the object of getting such patients received into the hospitals. Nearly all the hospital boards have refused point-blank to have anything to do with such patients on the ground of lack of accommodation. It is not known whether the board of the Johannesburg Hospital intends to provide special accommodation or whether it proposes to treat merely selected cases in the general wards of the institution. The great and pressing need throughout the Union is for more asylum accommodation, as for many years past grave delay has occurred in removing patients to the asylums after certification, and this has been due solely to lack of accommodation. It is satisfactory to note that the question of enlarging the asylums is now receiving attention.

August 29th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Kasauli Pasteur Institute.

THE tenth annual report of the Kasauli Pasteur Institute, relating to the year 1910, states that the number of persons treated was 2073, a higher figure than in any year since the opening of the institute in 1900. The percentage of failure in treatment was 0·19; the lowest percentage of failures previously had been 0·36 in 1908. It is true that 26 deaths occurred from hydrophobia among the cases treated, but 14 of these died during, and 8 within 15 days of completion of, treatment; only the 4 cases that died later than 15 days after completion of treatment are accounted to be failures. The institute completed the first ten years of its existence on August 9th, 1910; Major W. F. Harvey, I.M.S., very opportunely therefore presents us with a review of the changes which have taken place in anti-rabic treatment and in some of our conceptions regarding the disease. The most important of these has been the substitution of the method of Högyes (that is, the injection of high dilutions of "living and virulent" virus at first, followed by gradually diminishing dilutions) for Pasteur's original "dried cord" method (that is, commencing the treatment with a dead virus and following it up with an attenuated living virus). Further, by the employment of Negri's method of microscopic diagnosis in brain tissue the necessity for using animals as tests for the presence of the virus has been almost entirely done away with. In considering the factors that make for fatality the depth of the wound is one of importance; of the 26 fatal cases, 22 were bitten deeply and 4 only were superficial bites. Interposition of clothing is, of course, a great protection; all the fatal cases but one were bitten on the bare skin, and in this one case the clothing was torn. Cauterisation, if done quickly and thoroughly, is able to avert infection; of the 26 fatal cases, 18 had been either not cauterised at all or with an inefficient caustic, or later than one hour after the bite. As to the proper measures for the prevention of rabies in India, where extermination of the contagion is impossible, Major Harvey holds that the true prophylaxis begins with

the rabid animal. For the European officer class he lays down three injunctions: (1) let no one allow his own or his friend's dog to lick him; (2) let no one allow his dog to sleep on his bed; and (3) let everyone treat a sick dog as if he were a rabid dog. For the protection of other classes of the population he advocates the registration of dogs and their muzzling for, say, three months at a time. This would be, indeed, an Augean task. Local treatment with pure carbolic acid thoroughly applied at once, or the application of a Bier's bandage above the part bitten (so as to cause congestion), or of a Bier's vacuum glass, or cauterisation, are recommended. In Great Britain, thanks to the energy and determination of Mr. Walter Long, any dread of hydrophobia has ceased; in India, we fear, it can never be exterminated; but since the establishment of Pasteur institutes the cause for anxiety has been greatly diminished. If Sir David Semple's method of using a vaccine prepared from a killed virus and diluted with carbolised saline solution[1] be adopted, the necessity for travelling long distances to the Pasteur institutes would be done away with and the patient could be treated without delay. In any case the work of the Kasauli Institute will stand out as one of the most beneficent of the results of British rule in the sphere of prevention of disease. It is most gratifying to see announcements of liberal contributions from the Maharajahs of Gwalior, Benares, and Patiala, and from other native rulers, as well as from many municipalities towards the erection of new buildings, including accommodation for all classes of Indian patients, at Kasauli; it is evidence that the work of the institute is thoroughly appreciated.

Septic Tank Latrines.—Accidents in Factories.

The use of these is extending, and they appear to work satisfactorily in the tropical climate of Bengal. A recent report reminds us that they are not without dangers. An explosion occurred in the septic tank at the Kankinara jute mills last winter; it had been closed for purposes of cleaning. About 1 A.M. a party of eight sweepers came to examine the tank and introduced a naked light into the manhole; this was immediately followed by an explosion. Two men were killed outright, the remaining six were badly injured, and the building was completely wrecked. There was a considerable increase in factory accidents during the year, 1235 compared with 957 in the previous year; 77 were fatal.

Bengal Water-supply.

Local self-government is carried out in Bengal through the medium of district boards. These authorities are not always inclined to devote much expenditure to matters affecting health, in which respect they are not very unlike local sanitary authorities in other parts of the world. Attention has been called to the necessity for improving the water-supply in certain areas, but without leading to any action in consequence; whereupon it is noted that unless local bodies will of their own initiative pay greater attention to this important item of administration, the Bengal Government will have no alternative but to earmark for this purpose a portion of the grants made to district boards, as it is impossible to acquiesce in the persistent disregard of the instructions in this matter.

Sept. 6th.

[1] See THE LANCET, July 15th, 1911, p. 173.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Mr. Major Greenwood, jun., F.S.S., statistician to the Institute, will begin a course of lectures and demonstrations on "Statistical Methods and their Applications in Preventive Medicine and Pathology," on Monday, Oct. 16th, at 5 P.M. The lectures will deal with the aims of statistical science and the classes of problems to which its methods can be applied; the study of variation and the commonly observed types of frequency distribution; associated or correlative variations, and methods employed in their quantitative study; errors of sampling, outline of the theory and its practical applications. This course is open, without fee, to all medical men and to others interested in the subject. Further particulars, together with information as to the conditions under which those desirous of undertaking research work in medical statistics are admitted to the institute's laboratory, can be obtained on application to the secretary of the governing body, Lister Institute of Preventive Medicine, Chelsea Bridge-road, London, S.W.

Obituary.

FREDERICK WILLIAM PAVY, LL.D. GLASG., M.D. LOND., F.R.C.P. LOND., F.R.S.,

CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

Frederick William Pavy, who died at his residence, 35, Grosvenor-street, W., on Sept. 19th, in his eighty-third year, was born at Wroughton, Wiltshire, on May 29th, 1829. He was educated at Merchant Taylors' School. He proceeded thence in 1847 to Guy's Hospital. In 1852 he took the M.B. of London University, gaining honours in physiology and comparative anatomy, surgery, obstetric medicine, and medicine, in which last-named subject he was also medallist. In the following year he proceeded to the M.D. degree. After serving as house surgeon and house physician at Guy's Hospital he went to Paris to continue his studies, where he came into contact with Claude Bernard, then at the height of his fame. In 1854 he was appointed a lecturer on anatomy at Guy's Hospital. In 1856 he became lecturer on comparative anatomy, physiology and microscopical anatomy at the same school, holding the former post until 1864, when he relinquished it to Dr. P. H. Pye-Smith, who also succeeded him in 1877 in the lectureship on physiology. In 1859 he was appointed assistant physician at Guy's, and a lecturer on clinical medicine during the summer session. In this year he published in the *Guy's Hospital Reports* a paper on Lesions of the Nervous System producing Diabetes, thus identifying himself with the special subject in medicine with which his future career was to be so closely associated. In the same year he delivered the Lettsomian lectures on Certain Points Connected with Diabetes. These lectures were published in THE LANCET in November and December, 1860, and show very well how scientific was the spirit in which Pavy was approaching great scientific problems. In the same year he was elected a Fellow of the Royal College of Physicians of London, and in 1861 his first communication was made to the Royal Society, in which he detailed his researches on sugar formation in the liver; this paper was published in the society's Philosophical Transactions for that year. He delivered the Goulstonian lectures on Assimilation and the Influence of its Defects on the Urine in 1862–63.[1] These lectures were published in full in THE LANCET, and, taken in conjunction with contributions to the Guy's Hospital Reports on allied subjects, marked their author out, while still a young man, as a leader of thought in the profession. In 1872–73 he became an examiner at the Royal College of Physicians, which function he again fulfilled in 1878–79. He was a councillor of the College for 1875–77 and again for 1888–90. In 1871 he was appointed full physician to Guy's Hospital, and Lecturer on Medicine at its medical school, holding these offices until 1890 and 1886 respectively. In 1878 he delivered the Croonian lectures before the Royal College of Physicians of London, choosing for his subject Certain Points Connected with Diabetes.[2] These lectures were subsequently published in book form, and the clearness and terseness with which the observer stated his views, and the dignified moderation with which he has answered the objections raised against them, established him firmly in the good opinion of the scientific members of the medical profession.

In 1882–83 Dr. Pavy became Censor of the Royal College of Physicians, an office which he again held in 1891. In 1886 he was Harveian Orator of the Medical Society of London, his oration being published in our columns on Oct. 23rd. In 1888 he received the honorary degree of LL.D. at Glasgow University. In 1890 he passed on to the consulting staff at Guy's Hospital. On Oct. 8th of that year he formally handed over to the gymnasium committee of the Guy's Hospital Students' Club the gymnasium generously built and equipped by him for their benefit. He was President of the Royal Medical and Chirurgical Society in 1893, and in 1894 he was again Croonian lecturer of the Royal College of Physicians of London, while in 1897 he delivered a Supplementary Croonian lecture on Points Connected with the Pathology and Treatment of Diabetes, which was published in THE LANCET of Nov. 20th and 27th. In

[1] THE LANCET, Dec. 6th, 1862, and April 25th, May 2nd, May 23rd, July 25th, and Sept. 12th, 1863.

[2] THE LANCET, March 30th, April 6th, 20th, 27th, May 4th, 18th, July 6th, 20th, August 3rd, 31st, and Sept. 7th and 21st, 1878.

FREDERICK WILLIAM PAVY, LL.D., M.D., F.R.C.P., F.R.S.

(Reproduced from a photograph by Messrs. Maull and Fox.)

1901 he was awarded the Baly gold medal by the Royal College of Physicians for his distinguished work on Physiology. In 1908 he delivered before the Royal College of Physicians some lectures on the Pathology and Treatment of Diabetes Viewed by the Light of Present-day Knowledge. These lectures also were published in our columns, and contain his last pronouncements on the subject that he had made his life-long study. In 1909 Dr. Pavy became a Lauréat de l'Académie de Médecine de Paris, receiving the Prix Godard for his physiological researches.

In 1909 also fell his eightieth birthday, which was commemorated by the medical profession in a marked manner. It was generally recognised that Pavy was among the best known and most learned of our physicians and physiologists, while despite the weight of years he was maintaining himself in the van and fighting for truth as keen and vigorous a battle now as ever he did when he was winning his spurs over 50 years earlier. The Physiological Society at its meeting at Oxford on June 26th chose the occasion to pay him honour, for Professor F. Gotch then presented to him on behalf of the society a silver bowl in token of affection and admiration.

Dr. Pavy's learning was widely recognised throughout the medical world, as is shown by the honorary distinctions conferred on him by his medical *confrères* in foreign lands. He was a corresponding member of the Société d'Anatomie de Paris, of the Medico-Chirurgical Society of Edinburgh, and of the Verein für Innere Medizin of Berlin, and a Corresponding Fellow of the Pathological Society of Montreal; an honorary member of the Philadelphia County Medical Society, a foreign honorary member of the Royal Academy of Medicine of Belgium, and a Member (and former Vice-President) of the Paris Medical Society. His distinguished physiological work gained him the Fellowship of the Royal Society. He was President of the Association for Advancement of Scientific Research and Chairman of the National Committee of International Medical Congresses.

Dr. Pavy's literary work was both voluminous and important. It was mainly devoted to the physiology of digestion and the subject of diabetes. In addition to the lectures and contributions to medical literature already named he was the author of the following books: (1) "Researches on the Nature and Treatment of Diabetes" (1862), which reached its second edition in 1869. (2) "A Treatise on the Function of Digestion; Its Disorders and their Treatment" (1867). This work also reached its second edition in 1869. (3) His "Treatise on Food and Dietetics," published in 1874, and reaching a second edition in the following year, received a hearty welcome from the medical profession. Definite pronouncements from the pen of one who had devoted so much attention to his subject, and who was so high a scientific authority on all questions relating to digestion and assimilation, were sure from the first of the circulation which it deserved. Not pretending to contain much original research, the book presented an admirably clear, full, well-digested account of all-important facts and theories on the supply of force and material to the human organism. (4) "The Physiology of the Carbohydrates, their Application as Food and Relation to Diabetes," was published in 1894. (5) His last work, which was on "Carbohydrate Metabolism and Diabetes," was published in 1906, and like all the author's writings on the subject of carbohydrate metabolism and diabetes proved of interest and importance to students of a fascinating problem, embodying the views of one who had devoted his life's work to this branch of physiology and pathology, and who had pursued the path of investigation with exemplary diligence and pertinacity. Dr. Pavy's antagonism to the theory of glycogenesis as usually held was shown by his rapid departure from this theory to the enunciation of his own position, that so far from the passage of absorbed carbohydrate from the intestine to the liver being a normal process it is only when an undue amount of sugar is present in the alimentary canal that it reaches the portal system at all.

As an extraordinary proof of the concentration of Pavy's interests we reproduce here the titles of a few of the principal communications that have appeared in our own columns from his pen, excluding lectures and others that have been already mentioned. They are: "On a case of Cholera," THE LANCET, August 5th, 1865; "Paroxysmal Hæmaturia," THE LANCET, July 14th, 1866; "Hydatid of Liver, Treated Successfully by the Injection of the Extract of Male Fern into the Cyst," THE LANCET, Sept. 1st, 1866; "On the Alleged Efficacy of the Peroxide of Hydrogen and Ozonic Ether as Remedial Agents in Diabetes Mellitus," THE LANCET, March 13th, 1869; "Contributions on the Physiology and Therapeutics of Food," THE LANCET, Dec. 2nd, 16th, 23rd, 1871, Jan. 13th, 27th, Feb. 10th, and March 23rd, 1872; "The Effect of Prolonged Muscular Exercise upon the Urine in Relation to the Source of Muscular Power," THE LANCET, Nov. 25th, Dec. 9th, 16th, 23rd, 1876, and Jan. 13th, 1877; "A New Method for the Quantitative Determination of Sugar in Blood," read before the Royal Society, June 14th, abstract in THE LANCET, July 7th, 1877; "The Physiology of Sugar in Relation to the Blood," read before the Royal Society, June 21st, 1877, THE LANCET, July 14th, 1877, p. 53; "A New Line of Research Bearing on the Physiology of Sugar in the Animal System," read before the Royal Society, June 8th, 1881, THE LANCET, July 2nd, 1881; "Introductory Note on the Physiology of the Carbohydrates in the Animal System," read before the Royal Society, April 12th, 1883, THE LANCET, April 21st, 1883; "On the Physiology of the Carbohydrates in the Animal System," read before the Royal Society, Dec. 20th, 1883, THE LANCET, Jan. 5th, 12th, 19th, 26th, Feb. 2nd and 9th, 1884; "On the Quantitative Determination of Sugar for Clinical Purposes by the Ammoniated Cupric Test," THE LANCET, March 1st, 1884; "On Cyclic Albuminuria (Albuminuria in the Apparently Healthy)," read in the Section of Medicine, British Medical Association (Cardiff), 1885, THE LANCET, Oct. 17th, 1885; "Introductory Address to the Discussion on the Clinical Aspect of Glycosuria," read in the Section of Medicine, British Medical Association (Cardiff), 1885, THE LANCET, Dec. 5th and 12th, 1885; "Ferrocyanic Test Pellets for Albumin," THE LANCET, June 13th, 1885; "A Further Contribution on Cyclic Albuminuria, with Observations on the Effect of Various Conditions upon the Diurnal Appearance of the Urine," THE LANCET, March 6th, 1886; "Cyclic Albuminuria," THE LANCET, April 14th, 1888; "On the Diagnosis of Cases of Albuminuria, with special reference to Life Insurance," THE LANCET, August 24th, 1889; "On the Principles of Treatment of Diabetes Mellitus," read at the International Medical Congress, Berlin, 1890, abstracted in THE LANCET, August 16th, 1890; "Differentiation in Diabetes," THE LANCET, June 16th, 23rd and 30th, 1900; "On the Acetone Series of Products in connexion with Diabetic Coma," THE LANCET, July 12th, 19th, 26th, August 9th, 1902; "On Diabetic Neuritis," THE LANCET, July 2nd and 9th, 1904; "Lectures on Carbohydrate Metabolism," delivered at the University of London, THE LANCET, June 24th, July 1st, and August 5th, 1905; "The Pathogeny of Diabetes," read at the Fifteenth International Congress of Medicine (Lisbon), April, 1906, THE LANCET, May 5th, 1906; "A Study of the Conditions producing the Anomalous Reaction not infrequently met with on Testing Urine for Sugar with Fehling's Solution," THE LANCET, July 27th and August 3rd and 10th, 1907.

What was exactly the scientific position of this distinguished man? In the first place his labours form a connecting link between the past and the present. He was the last survivor of a line of distinguished physician-chemists who in this country, during the earlier and middle years of the last century, did much to lay the foundations and advance the study of metabolic disorders. He was a worthy successor of Prout, Alexander Marcet, Bence Jones, and Golding-Bird, and a contemporary of William Marcet, Roberts, Garrod, and Thudichum; but he also ranks as a pioneer among the chemical pathologists of the modern school, who, in the light of a far more ample chemical science, and by methods far more exact and adequate, are carrying on, in Europe and in America, the work which those men initiated, and are expanding it in all directions. A pupil of Claude Bernard, Pavy realised to the fullest extent the truth that all advances in the study of disease must rest upon investigations into the normal processes of the body, and his memory is reverenced by physiologists, pathologists, and physicians alike. We associate with his name the recognition of postural albuminuria, and the theory that the living gastric wall owes its immunity from auto-digestion to the alkalinity of the blood; but it is chiefly in connexion with the study of carbohydrate metabolism that his name and work will be

remembered. He was the founder of the modern study of diabetes. His labours in that field covered a period of no less than half a century. His first public delivery on the subject dates from 1860, and he dealt with it with undiminished vigour in a course of lectures delivered before the Royal College of Physicians of London in 1908. Thus, even in old age he showed that the keenness of his interest in the subject which he had made his own suffered no abatement; he was ready at all times to defend his views, which, if not always in accord with the trend of contemporary opinion, were based upon his own experimental researches and clinical observation.

It was his work with Claude Bernard which first awakened his interest in such problems, and on his return to London his labours were directed to the extension of his teachers' observations to the domain of pathology. However, as his researches went on he was soon led to dissent from Bernard's views, and in the first edition of his book on diabetes, published in 1862, he expresses his inability to accept the glycogenic theory of carbohydrate metabolism as clearly as in his most recent lectures. He showed that during life the blood in the cavities of the right heart is not richer in sugar than that in other parts of the circulation, and so removed the basis of the theory, then prevalent, that the combustion of sugar is effected in the lungs.

In opposition of the view that sugar is liberated from the store of glycogen in the liver to meet the needs of the tissues he maintained that the small molecules of glucose, if present in a free state in the blood, are of necessity excreted by the kidneys, and that it is erroneous to suppose that only when a certain sugar content of the blood is exceeded does glycosuria ensue. He further maintained that in diabetes the fault lies in a malassimilation of sugar, a failure to incorporate it into larger molecules probably of protein nature, with the result that free glucose enters the circulation, and, as a necessary result, is excreted in the urine. These opinions led to the devotion of much time and labour to the demonstration of the trace of glucose in normal urine and of the carbohydrate fraction in proteins.

Pavy's influence upon the treatment of diabetes is difficult to estimate. There can be no question that during his lifetime great advances were made in the feeding of diabetic patients and in the provision of more satisfactory and less unpalatable bread substitutes for their use. It is certain, too, that he exerted a powerful influence in furthering this progress, as, for example, by the introduction of almond bread. Questions of diet interested him greatly, and apart from his well-known book on food and dietetics, no one has laid greater stress upon the importance of suitable limitations in the treatment of diabetes. In this disease he leaned to the side of strictness in elimination of carbohydrates from the food, holding that no good can result from allowing to the patient materials which he is unable to assimilate rightly. He was a strong upholder of the value of opium and its alkaloids in the treatment of the disease or group of diseases in question, and to him we owe the introduction of codeia as a substitute for opium in the treatment of diabetes. No future writers or workers on diabetes can omit to take Pavy's work into account, and his labours will always be respected, even by those who find themselves least able to accept his views. He has left to those who come after him the example of a long and active life devoted from youth to an honoured old age to the pursuit of scientific work in medicine, work which neither the claims of duty well performed in a large hospital and medical school, nor the strain of a large private practice, ever succeeded in suspending. Fifty years spent in the investigation of a disease, in the laboratory, in the wards, and in the consulting-room, confers an authority which none can gainsay.

We are indebted to Dr. Frederick Taylor for the following note upon Pavy as teacher and hospital physician. Dr. Taylor's words show clearly that Pavy's concentrated interest in his own line of work never seduced him from the discharge of his public or wider responsibilities; he maintained the proper balance between the *savant* and the man of affairs. Dr. Taylor writes: "It is well known that the man of much knowledge is not always a competent teacher, but Dr. Pavy as a lecturer on physiology, the subject in which he early made a reputation, was certainly successful. He was clear, precise, and in simple language put the facts lucidly before his audience, without attempting to enter into unnecessary discussions of theories, in which the majority of the students would probably have taken little interest. He lectured for over 20 years, and for all this period, except the last five years, when he was associated with Dr. Pye-Smith, he delivered the lectures during the whole of the winter session. These were the days before the Vivisection Act, and Dr. Pavy was in the habit of illustrating his lectures, to the great advantage, as I believe, of the student, with occasional demonstrations on the living animal—demonstrations which were judiciously selected and conducted with the greatest skill. The neatness with which Dr. Pavy would cut down upon the vagus, or ligature a vessel in the neck, was very striking. The writer has a vivid recollection of one such lecture, more than 40 years ago, in which Dr. Pavy refuted Bernard's dictum as to the sugar contents of the blood in the hepatic vein; and it has always been to him an instance of the superiority of ocular demonstration, whether by experiment, drawing, or diagram, over mere platform utterances. In his clinical teaching Dr. Pavy was simple, direct, even dogmatic, laying before the student the well-known facts of medicine, and not being inclined to spend time in the consideration of theories for which there might be little evidence. With his interest deeply centred, as no doubt it was, in the relations of diabetes, it might have been thought that his wards would have been full of examples of this disease. This, however, was not the case, though he always had some diabetics under treatment. Unfortunately the class of diabetic case which comes into a general hospital is that which is least suited, both in the form of the disease and in the mental attitude of the patient, to scientific research and observation. And I am afraid that his cases were as prone to resent the restriction of their diet and to partake of forbidden fruit, introduced on visiting days, as those of his colleagues. However, as a clinical teacher he dealt with all subjects alike, clearly and sufficiently if not profoundly, and he attracted a good class to his clinical visits up to the time of his retirement at the age of 61—a retirement which was delayed for one year at the request of the governors in consequence of the rapid depletion of the active medical staff by the loss of five physicians and assistant physicians in six years.

"Dr. Pavy was in all he did methodical, punctual, precise, and never in a hurry. He conscientiously attended all committees requisite for the management of the hospital and medical school, took his share in the responsibility for this very necessary work, and rarely pleaded urgent professional engagements as an excuse for absence. At the same time, as is well known, he had a large private practice, especially among the sufferers from the disease to which he had devoted so much labour, and in renal and digestive disorders. He never relinquished his practice, and saw patients at his house within a few days of his death. To the end he was wrapped up in his work and in his laboratory researches, and except in his holidays, when he was fond of travel, he was content with very little diversion in other directions."

Dr. Pavy married in 1855 Julia, daughter of Mr. William Oliver, by whom he had a daughter Florence, who married the Reverend Borradaile Savory, son of Sir William Savory the famous surgeon, and father of the present baronet.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. A. Hubbell, formerly professor of ophthalmology and otology in the University of Buffalo. Dr. F. W. Page, formerly professor of neurology and psychiatry in the University of Vermont, Burlington. Dr. V. Griffon, physician to the Paris hospitals. Dr. Friedrich Ernst, formerly professor in Zürich. Dr. A. Sitzenfrey, *privat docent* of gynæcology in the University of Giessen. Dr. Christian Gerhard Leopold, an eminent obstetrician and gynæcologist of Dresden, at the age of 65, from heart disease. He began his professional career as assistant to Professor Credé in Leipsic, where he was afterwards extraordinary professor. For the last 30 years he has been director of the Royal Clinic for Women in Dresden, from which post he had arranged to retire on Oct. 1st. He published many papers on obstetrical and gynæcological topics, and was one of the editors of the *Archiv für Gynäkologie*.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. Walter Kruse of Königsberg has been appointed to the chair of Hygiene in succession to Dr. Finkler, who is retiring.—*Budapest:* Dr. Bencze has been recognised as *privat-docent* of Medicine and Dr. A. Torday as *privat-docent* of the Pathology of the Circulation.—*Christiania:* At the centenary of the University the following have (amongst others) received the honorary degree of Doctor: Professor Rubner of Berlin, and Professor Strümpell and Professor Rabl of Leipsic.—*Groningen:* Dr. T. S. Steenhuis has been recognised as *privat-docent* of Forensic Medicine.—*Jena:* Dr. T. Meyer-Steinegg, *privat-docent* of the history of medicine, has been promoted to an Extraordinary Professorship.—*Kiel:* Dr. A. Bethe of Strasburg has been appointed to the chair of Physiology in succession to Dr. V. Hensen, resigned.—*Modena:* Dr. E. Cavazza has been recognised as *privat-docent* of Internal Pathology.—*Moscow:* Dr. P. Rybakoff has been promoted to the chair of Neurology and Psychiatry.—*Munich:* The title and rank of Extraordinary Professor have been granted to Dr. Siegfried Oberndorfer, *privat-docent* of pathological anatomy; Dr. Alexander Schmincke, *privat-docent* of general pathology and pathological anatomy; Dr. Otto Neubauer, *privat-docent* of medicine; and Dr. Rudolf Grashey, *privat-docent* of surgery. Dr. Alfred Schönwerth, *privat-docent* of surgery, has been appointed Honorary Professor. Dr. Franz Weber has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Philadelphia (University of Pennsylvania):* Dr. J. H. Austin has been appointed Adjunct Professor of Experimental Medicine.—*Prague (German University):* Dr. Josef Jerie has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Rome:* Dr. Amerigo Filia has been recognised as *privat-docent* of Pædiatry.—*Strasburg:* Dr. C. F. Wenckebach of Groningen has been appointed to the chair of Clinical Medicine in succession to Dr. F. Moritz, resigned.—*Tübingen:* Dr. Paul Linser has been appointed to the newly created chair of Dermatology.—*Vienna:* Dr. Richard V. Wiesner has been recognised as *privat-docent* of Pathological Anatomy.—*Warsaw:* Dr. N. K. Nézholoff of Kieff has been appointed to the chair of Gynæcology.—*Würzburg:* Dr. Martin Reichardt, *privat-docent* of Psychiatry, has been granted the title of Extraordinary Professor.

THE BIRMINGHAM OPEN-AIR SCHOOL.—The open-air school which Birmingham owes to the generosity of Mr. and Mrs. Barrow Cadbury has recently come into use. About 100 children are accommodated, and they have been carefully selected by the education committee's medical officer, Dr. G. A. Auden. Most of the children are suffering from anæmia, debility, malnutrition, and tuberculous glands. Only those whose home conditions were such that treatment received at the school was likely to be supplemented and followed up by home care and rigid adherence to medical advice were chosen, and a further condition that parents should contribute 1*s.* per week towards the cost of the meals served at the school has been readily complied with.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Sept. 15th. There were present Dr. F. de Havilland Hall, in the chair, Mr. H. P. Symonds (Oxford), Dr. H. A. Sansom, Dr. M. G. Biggs, Dr. F. C. Martley, Mr. J. Brindley-James, Dr. J. W. Hunt, Dr. F. J. Allan, Mr. J. F. Colyer, Dr. W. Knowsley Sibley, and Dr. J. B. Ball. The business of the society during the summer has been exceptionally good. The number of new entrants has been greater than in any similar period of the society's operations, and the sum paid out for sickness claims has been well under the amount expected and provided for in the tables of contributions. The success of the business has enabled the committee to grant a further bonus to the sickness members in the shape of a sum payable at death before the age of 65. The amount so payable varies from £12 to £24, according to the length of membership. Prospectuses and all further particulars on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The prizes will be distributed to successful students on Tuesday, Oct. 3rd, at 3 P.M., by the senior physician, Dr. Theodore Dyke Acland, in the Governors' Hall of the hospital.

A DEVONSHIRE CENTENARIAN.—Mrs. Gibbons, of Torquay, celebrated the hundredth anniversary of her birthday last week, and received a congratulatory message from the King.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—The distribution of prizes to students will take place in the out-patients' hall on Monday, Oct. 2nd, at 3.15 P.M., by H.R.H. the Princess Louise, Duchess of Argyll, president of the hospital. The school, in which extensive alterations have been made, will be open for inspection.

LITERARY INTELLIGENCE.—Messrs W. B. Saunders Company will publish shortly another volume of "Collected Papers" by the staff of the Mayo Clinic. This new work embraces the papers prepared for publication during 1910 by Dr. Chas. H. Mayo and Dr. Wm. J. Mayo and their associates at St. Mary's Hospital, Rochester, Minnesota. The text will be illustrated by some 300 original illustrations.

A WINDFALL FOR SCOTTISH MEDICAL INSTITUTIONS.—Under the will of the late Mr. Edward Davis of Cheltenham a magnificent bequest has been made to Scottish charities. Mr. Davis's fortune amounted to nearly £150,000, but only half of this sum will be required in satisfaction of specific legacies. The residue, which it is expected will amount to £75,000, has been left to trustees with instructions to divide it between such general hospitals and infirmaries in Scotland as they shall select.

THE CATHOLIC NURSING INSTITUTE.—We are frequently asked for the address of a nursing institution where patients are received for medical and surgical treatment for a small fee, so that our readers may be glad to have brought to their notice the Catholic Nursing Institute (60, Lambeth-road) where patients of any religious denomination are received for the sum of £1 1*s.* weekly. There are also a few private rooms for which the charge is £2 2*s.* weekly. The nursing is carried out by the Institute of Trained Nurses of Our Lady of Consolation, and patients are treated either by their own medical men or by the medical officers attached to the institution.

THE HEALTH OF BIRMINGHAM.—There was a considerable improvement in the health of Birmingham last week as compared with the previous week, the total death-rate being 16·7 per 1000, as compared with 20·4; and the zymotic death-rate 3·7, against 6·8. The decline in deaths from diarrhœa and enteritis was from 76 to 45. Stringent by-laws against spitting in the public streets and places within the city have been passed by the city council and are now in force, and the chief constable has been authorised to take such steps as he might consider necessary with regard to their publication and advertisement.

DEATH OF MR. WILLIAM WALTER HARRISON.—A promising career was ended on Sept. 17th by the death of Mr. William Walter Harrison, at the age of 35. Studying at Guy's, he took the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond. in 1899, when he was 23 years of age. He practised at Brighton for some time, and while there was house surgeon at the Brighton, Hove, and Preston Dispensary, and was a member of the local Medico-Chirurgical Society. Unfortunately, he did not have the best of health—in fact, he had to give up his practice and went abroad for a time. Returning, he became resident physician at Manor Valley Sanatorium, Peebles, but illness again overtook him, and he died at Nordrach-on-Dee, Banchory, N.B. He was buried at Keymer, Sussex, by the side of his father and mother.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANKLESARIA, H. N., F.R.C.S. Edin., has been appointed an Examiner in Surgery to the University of Bombay.

CAMPBELL, DONALD, M.D., C.M. Glasg., has been appointed Medical Officer of Health for the Calne (Wilts) Urban District.

DOBSON, J. R. B., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Royal Hospital for Diseases of the Chest, City-road, E.C.

KENNEDY, ROBERT, M.D., M.S. Glasg., has been appointed to the St. Mungo Chair of Surgery in the University of Glasgow.

KERR, J. M. MUNRO, M.D. Glasg., has been appointed to the Muirhead Chair of Obstetrics and Gynæcology in the University of Glasgow.

LEVIN, JOSEPH J., M.B., Ch.B. Edin., has been appointed Obstetric Assistant at the Ladies' Charity and Lying-in Hospital, Liverpool.

MCCULLOCH, J., M.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bexhill-on-Sea District of the county of Sussex.

MORRIS, R. OWEN, M.D. Edin., D.P.H., has been appointed Lecturer to the Welsh National Memorial inaugurated for the Treatment of Tuberculosis.

WALTERS, ENID, M.B. Lond., has been appointed Fourth Assistant Medical Officer and Pathologist at the Devon County Asylum.

WILSON, S. RAWSON, M.B., B.S. Lond., F.R.C.S. Edin., has been appointed Anæsthetist to the Salford Royal Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer and Resident Surgical Officer for six months. Salary in each case £80 per annum, with board, washing, and attendance.

BIRMINGHAM, CITY EDUCATION COMMITTEE.—Medical Officer for Inspection of School Children. Salary £250 per annum.

BIRMINGHAM CITY FEVER HOSPITAL, Little Bromwich.—Medical Superintendent. Salary £250 per annum, with board and residence.

BIRMINGHAM, UNIVERSITY OF.—Lecturer in Physiological Department. Salary £150 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

BURSLEM, HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and laundry.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CAMBERWELL PROVIDENT DISPENSARY.—Two vacancies on Medical Staff.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CARLISLE DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CARSHALTON, QUEEN MARY'S HOSPITAL FOR CHILDREN.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

CHARTHAM, NEAR CANTERBURY, KENT COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £192 per annum, with quarters, washing, &c.

CHESTER, CITY OF.—Assistant Medical Officer of Health. Salary £250 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, apartments, and laundry.

CROOKSBURY SANATORIUM, Farnham, Surrey.—Resident Medical Officer.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Two Junior House Surgeons. Salary £80 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, apartments, laundry, &c. Also House Surgeon, unmarried Salary £125 per annum, with apartments, board, laundry, &c.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, &c.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, all for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Honorary Anæsthetist.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea provided.

EAST SUFFOLK COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician and Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Medical Officer. Salary 25 guineas per annum.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £60 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board, residence, &c.

HULL ROYAL INFIRMARY.—Two Casualty House Surgeons. Salary at rate of £80 per annum, with board and lodging.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.

LINCOLN GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £300 per annum, with apartments, &c.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Two Resident Assistant Medical Officers. Salaries £120 and £100 per annum respectively, with apartments, &c.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry.

MELROSE, ROXBURGH DISTRICT ASYLUM.—Assistant Medical Officer Salary £160 per annum, with board, lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary of House Physician and House Surgeon at rate of £60 per annum, with board and washing. Salary of Assistant House Physician and Assistant House Surgeon at rate of £40 per annum, with board and washing. Also Ophthalmic Surgeon.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with board, attendance, and laundry.

NEWCASTLE THROAT, NOSE, AND EAR HOSPITAL.—Two Honorary Assistant Surgeons.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Three House Physicians, Four House Surgeons, One Accident Room House Surgeon, One House Surgeon to the Aural and Ophthalmic Departments, One House Surgeon to the Skin and Gynæcological Departments, and One House Surgeon to Out-patients.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100 per annum, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, washing, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary in each case at rate of £52 10s. per annum, with board and residence.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum. Also Assistant Surgeon.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon for six months Salary 50 guineas per annum, with board and residence.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—House Physician and House Surgeon for six months. Board, lodging, and washing provided. Also House Physician and House Surgeon (females) Board, lodging, and washing provided.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—Clinical Assistant. Also Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Honorary Gynæcologist.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and laundry.

THROAT HOSPITAL Golden-square, W.—Resident House Surgeon Salary £75 per annum, with board, residence, and laundry. Also Honorary Assistant Registrar.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WESTMINSTER HOSPITAL.—Assistant House Physician for three months. Board provided.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Caldicot, in the county of Monmouth; at Cardiff, in the county of Glamorgan; and at Portumna, in the county of Galway.

Births, Marriages, and Deaths.

BIRTHS.

BAGSHAWE.—On Sept. 21st, at the Manor House, Rickmansworth, to Dr. and Mrs. Arthur G. Bagshawe—a son.

VERNON.—On Sept. 21st, at Norham-road, Oxford, the wife of H. M. Vernon, M.D., of a daughter.

MARRIAGES.

COLLINS—HATCHARD SMITH.—On Sept. 20th, at Christ Church, Epsom, Michael Abdy Collins, B.S., M.D. Lond., to Sybil, youngest daughter of J. Hatchard Smith, F.R.I.B.A.

ILIEWICZ—HELE.—On Sept. 21st, at Holy Trinity, Balham, S.W., Fleet-Surgeon Henry F. Iliewicz, M.B., R.N., of H.M.S. *Indomitable*, to Bessie E. Hele, daughter of the late G. F. Hele, of Stoke Devonport, and of Mrs. Hele, of St. Ives, Hunts.

MUSGROVE—PETTIGREW.—On Sept. 20th, at All Souls, London, James Musgrove, M.D., F.R.C.S., to Elsie Bell Pettigrew, second daughter of the late Sir William Gray.

DEATHS.

ANDREW.—On Sept. 19th, at Atholl-crescent, Edinburgh, James Andrew, M.D., F.R.C.P.E.

CONOLLY.—On Sept. 19th, at Bassett-road, North Kensington, W., Stephen Fullom Conolly, M.R.C.S., L.R.C.P., in his 62nd year.

PAVY.—On Sept. 19th, at Grosvenor-street, W., Frederick William Pavy, M.D., F.R.S., LL.D., in his 83rd year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

CROSBY LOCKWOOD AND SON, London.

The Sewerage of Sea Coast Towns. By Henry C. Adams, Assoc.M. Inst.C.E., M.I.Mech.E., A.M.I.E.E., M.R.San.I. Price 5*s.* net.

GOLDSCHMIDT, J., Heiligegeiststrasse, 52. Berlin, C.2.

Hand- und Lehrbuch meiner Reflexmassage für den Praktischen Arzt. Ein neuer, praktischer Weg zur Diagnose, Therapie und Prophylaxe der Krankheiten. Von Dr. B. Barczewski, Stabsarzt d.L. Berlin-Schöneberg. Price M.3.50.

HARPER AND BROTHERS, London and New York.

Chemical Phenomena in Life. By Frederick Czapek, M.D., Ph.D., Professor of Plant Physiology in the University of Prague. Price, cloth, 2*s.* 6*d.* net.

The Ancient Egyptians and Their Influence upon the Civilisation of Europe. By G. Elliot Smith, M.A., M.D., F.R.S., Professor of Anatomy in the University of Manchester. Price, cloth, 2*s.* 6*d.* net.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.

The Hunterian Lectures on Colour-Vision and Colour-Blindness. Delivered before the Royal College of Surgeons of England on Feb. 1st and 3rd, 1911. By Professor F. W. Edridge-Green, M.D. Durh., F.R.C.S. Eng., Belt Medical Research Fellow. Price 3*s.* 6*d.* net.

MACMILLAN AND CO., LIMITED, London.

A Practical Handbook of the Diseases of the Ear. For Senior Students and Practitioners. By William Milligan, M.D., Aurist and Laryngologist to the Royal Infirmary, Manchester, Surgeon to the Manchester Ear Hospital; and Wyatt Wingrave, M.D., Pathologist (lately Physician) to the Central Throat and Ear Hospital, London, and to the Polyclinic, London. Price 15*s.* net.

UNIVERSITY OF BRISTOL, Registrar of, Bristol.

University of Bristol. Calendar, 1911-12. Price not stated.

UNIVERSITY PRESS, Cambridge.

A Text-book of Experimental Psychology, with Laboratory Exercises. By Charles S. Myers, M.A., M.D., Sc.D., of Gonville and Caius College, University Lecturer in Experimental Psychology, Cambridge. Second edition. Part I. Text-book. Part II. Laboratory Exercises. Price 10*s.* 6*d.* net.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, LIMITED, London.

Immune Sera. A Concise Exposition of the Main Facts and Theories of Infection and Immunity. By Dr. Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. Fourth edition, rewritten and enlarged. First thousand. Price, cloth, $1.50.

Manual of Psychiatry. By J. Rogues de Fursac, M.D., formerly Chief of Clinic at the Medical Faculty of Paris, Physician in Chief of the Public Insane Asylums of the Seine Department. Translated and edited by A. J. Rosanoff, M.D., Second Assistant Physician, Kings Park State Hospital, N.Y. Third American from the Third French Edition. Revised and enlarged. Price $2.50 net.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN MALTA.

A REPORT on the Malta Blue-book for the year 1910-11, prepared by the Hon. E. P. S. Roupell, D.S.O., has just been issued from the Colonial Office. According to a census taken on April 2nd, 1911, the civil population of the islands numbered 211,473. The birth-rate was 36·12 per 1000, as compared with 36·07 in the previous year, whilst the average birth-rate for the last 12 years was 38·26 per 1000. The death-rate of the civil population was 21·42 per 1000, as against 22·57 in 1909-10. The general state of health was satisfactory, and the colony was not visited by any epidemic. There were 43 cases of small-pox (with four deaths), all imported. The incidence of enteric fever was normal, and the cases were not confined to any particular town or village. Mediterranean fever has shown a considerable decrease among the civil population and has practically ceased altogether in the fleet and garrison. The number of vaccinations performed by district medical officers in Malta and Gozo was 6565, of which 6451 were successful. The death-rate amongst children under 12 months was 236·93 por 1000 births, as against 242·46 in the preceding year. There was also a slight decrease in the death-rate of children under five years. During the year several works under the general drainage scheme were carried out. The total number of persons admitted into the hospitals and maintained in the other charitable institutions of Malta and Gozo was 8182, as against 7309 in 1909-10. In addition to these, 119,893 persons were attended by the district medical officers at the Government dispensaries or at their own homes.

The mean temperature for the summer months was 73·9°, and for the winter months 53·7°. The highest temperature in the shade was 92·7° on July 20th, 1910, and the lowest 39·7° on Feb. 10th, 1911. The total rainfall was 18·976 inches, or 5·367 less than that of the previous year. The average rainfall for the last ten years was 22·260 inches.

HOW TO SPREAD INFECTION.

A MAN described as a working tailor, and living in [St. James's, S.W., was summoned at the Marlborough-street police-court recently for taking his son, whom he knew to be suffering from scarlet fever, in a public vehicle from St. James's to Bethnal Green. The medical man whom he had consulted gave evidence that he had told the defendant what was the matter with the boy, and Dr. F. J. Allan, medical officer of health to the City of Westminster, informed the magistrate that the defendant had said to him that he took his son in a taxi-cab to the East-end to the house of a relative because he did not believe in the medical practitioners of the West-end, preferring those of the East-end. Mr. Mead endeavoured to impress upon the defendant the cruelty of his conduct in recklessly exposing to infection a number of persons who might use the same taxi-cab afterwards, but taking into consideration his apparently humble position inflicted a fine of 15*s.*

A CLOSED CONGRESS.

A RECENT message from Reuter's Moscow correspondent, which appeared as a small paragraph in some English newspapers, must have given rather a shock to medical men in this country, who are unaccustomed to the idea of police interference in scientific discussions, and do not naturally associate neurological congresses with politics. The paragraph ran as follows: "Moscow, Sept. 17th. The Congress of Specialists in Nervous and Mental Diseases which was opened here to-day was closed by the police official in attendance owing to the sharp criticism of the Government contained in a speech made by Professor Sertsky."

ENDOLYTIC TUBES FOR CLINICAL DIAGNOSIS.

THE capillary tube and its well-known peculiar force supply an ingenious and delicate means of clinically testing urine for albumin or sugar. The endolytic tube represents a tiny test-tube in which a negative or positive result can be equally well observed. The capillary tube is charged with the sensitive and trustworthy agent, salicyl-sulphuric acid, for albumin; a column about half an inch long is left at the end of the tube, both ends being open. The capillary attraction is capable of drawing up a longer column than this, and so when the tube is dipped into the urine to be tested a column of urine of about equal length pushes the column of reagent forward. In a moment they mingle, and in the presence of albumin an unmistakeable turbidity appears, its density depending upon the quantity of albumin present. Similarly, capillary tubes are charged with Fehling's solution, and when some boiling water is poured over the tube, after some urine has been drawn up by capillarity, the reduction to red cuprous oxide is readily observed when sugar is present. The endolytic tubes are supplied sealed with a definite quantity of reagent in them. They are generally overcharged, so as to allow of the adjustment of a column of reagent at

the end of the tube sufficient for the reaction, and the fluid should be short of the full capillary attraction of the tube, so that when the endolytic tube is dipped into the urine a column of about equal length enters for the test. We have tried the use of the tubes with solutions of sugar and albumin, and the results were very plainly revealed. They should be very useful for clinical purposes, especially as they contain reliably prepared reagents which are kept sealed against any disturbing influences; they need not be opened until immediately prior to making a test. Specimens were submitted to us by the Endolytic Tube Co., Hampton-on-Thames.

Tropics will be grateful to readers of THE LANCET who can recommend him any book or books on the subject of tropical and sub-tropical diseases. "Is there any book or books," he asks, "not too extensive where one could get a short description of the diagnosis and treatment of such diseases, suitable for a man who has been appointed medical officer to a rubber estate in the Malay States?"

Medicus would like to hear from any reader of THE LANCET who may have observed attacks of asthma following the administration of ordinary doses of aspirin.

Scot.—It would be quite incorrect to style him "Dr.," and if he intends to finish his curriculum such action might be prejudicial to his future.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for October, 1911:—

April October.—Rome Exhibition (United Italy's Jubilee).
,, 29th-Oct. 26th (Turin).—International Exhibition.
May 3rd-Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th-Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th-Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th-October 31st (London, Shepherd's Bush).—Coronation Exhibition.
Sept. 19th-Oct. 31st (London).—Earl's Court Exhibition.
,, 23rd-Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th-30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th-30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th-30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September-November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 1st-4th (Liége).—Second Congress of Alimentation.
,, 2nd-4th (Frankfurt-a-Main).—Fifth Annual Meeting of the Society of German Neurologists.
,, 2nd-5th (Turin).—International Congress of Pathology.
,, 2nd-6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
,, 2nd-7th (Dresden).—Third International Housing Congress.
,, 2nd-7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
,, 3rd-5th (Turin).—Ninth National Congress of Medici Condotti.
,, 3rd-6th (London).—Dairy Show.
,, 5th-7th (Paris).—Fifteenth Meeting of the French Association of Urology.
,, 6th and 7th (Paris).—French Association of Pediatrics.
,, 9th-12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
,, 9th-13th (Cologne).—Seventh International Congress of Criminal Anthropology.
,, 10th (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
,, 12th-18th (Rome).—Fifth Annual Meeting of the Italian Society for the Advancement of Science.
,, 13th-16th (Turin).—Third National Congress of Professional Diseases.
,, 15th (The Hague).—International Opium Conference.
,, 20th-22nd (Roubaix).—Second National Congress of the Mutalité Maternelle.
,, 22nd and 23rd (Lyons).—Twelfth French Congress of Medicine.
,, 25th-27th (New York City).—Annual Conference of Sanitary Officers of the State of New York.
,, 26th-28th Rome).—Congress of the Italian Society of Laryngology. Otology and Rhinology.
,, 31st-Nov. 4th (London, Royal Horticultural Hall).—Twenty-second Universal Cookery and Food Exhibition.
October (Paris).—First Congress of the International Medical Association for the Prevention of War.
,, (Stoke-upon-Trent).—Church Congress.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.
OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—J. H. Targett, W. W. H. Tate), at 11, Chandos-street, W., at 8 P.M.
Specimens:
Dr. Maxwell: Unruptured Tubal Gestation at the Fourth Month.
Mr. Malcolm: Large Fibro cystic Tumour of the Perineum.
Dr. McCann: (1) Soft Fibroma of the Pelvic Connective Tissue forming a Large Perineal Tumour; (2) Hæmatometra and Hæmatosalpinx associated with Absence of the Vagina.
Dr. Macnaughton-Jones: Some Rare Books Presented by Prof. Klein of Munich.
Inaugural Address at 9 P.M.:
The President (Dr. Amand Routh).

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Opening Address:—Mr. B. G. A. Moynihan. Dyspepsia, Surgical View.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. D. Lister. Phthisis in Relation to Life Assurance.
TUESDAY.—4 P.M., Dr. R. C. Jewesbury: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. Hyslop: General Paralysis of the Insane.
WEDNESDAY.—4 P.M., Mr. C. Rowntree: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. F. Tredgold: Certifiable Lunacy.
THURSDAY.—4 P.M., Mr. W. F. Fedden: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. D'Arcy Power: The Treatment of Ulcerative Colitis.
FRIDAY.—4 P.M., Mr. E. Clarke: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Bishop Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. E. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—10 A.M., Radiography. 11 A.M., Dr A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. W. Stuart-Low: Methods of Examination.
FRIDAY.—3.30 P.M., Lecture:—Dr. Dan McKenzie: The Labyrinth Tests in Practice.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Essentials to the Study of Dermatology.

OPERS.

METROPOLIPITALS.

MONDAY (2nd).—London (2 P.rtholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. Ge.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), West2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, lians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Centra.), West London (2.30 P.M.), London Throat (9.30 A.M.), E (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street t. Mark's (2.30 P.M.), Central London Throat and Ear (Mincfajor 2 P.M.).

TUESDAY (3rd).—London (2 P.rtholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1Middlesex (1.30 P.M.), Westminster (2 P.M.), West Lon P.M.), University College (2 P.M.), St. George's (1 P.Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Ma (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-squar Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. anOphthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central Lonat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal Nationalhic (9.30 A.M. and 4 P.M.).

WEDNESDAY (4th).—St. Barthol.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.),ax (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.ion (2 P.M.), King's College (2 P.M.), St. George's (Ophtl P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminst.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Ca.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.)Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9. Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M.2 P.M.).

THURSDAY (5th).—St. Barthi (1.30 P.M.), St. Thomas's (3.30 P.M.), University College, Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.g's College (2 P M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.b-square (2 P.M.), North-West London (2 P.M.), Gt. Northeral (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), Lorroat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Thrden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Ort (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. (street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2), West London (2.30 P.M.), Central London Throat and Ear, 9 A.M., Major, 2 P.M.).

FRIDAY (6th).—London (2 P.M.artholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.3Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.g's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), London (2.30 P.M.), London Throat (9.30 A.M.), Samaritana.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Rotional Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children rmond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.),er's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., 2 P.M.).

SATURDAY (7th).—Royal Free), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.niversity College (9.15 A.M.), Charing Cross (2 P.M.), St. G(1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.ny's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 West London (2.30 P.M.).

At the Royal Eye Hospital (2 the Royal London Ophthalmic (10 A.M.), the Royal Westminstethalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.pital operations are performed daily.

EDITORIADTICES.

IT is most important that cunications relating to the Editorial business of THE ET should be addressed *exclusively* "TO THE EDITOR,1 not in any case to any gentleman who may be suppco be connected with the Editorial staff. It is urgently ssary that attention should be given to this notice.

It is especially requested that i intelligence of local events having a medical interest, oich it is desirable to bring under the notice of the prion, may be sent direct to this office.

Lectures, original articles, anaports should be written on one side of the paper onlND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTTHAT THE NAME OF THE AUTHOR, AND IF POSSIBLF THE ARTICLE, SHOULD BE WRITTEN ON THE BLO TO FACILITATE IDENTIFICATION.

Letters, whether intended for insion or for private information, must be authentroated the names and addresses of their writers—not necessarily publication.

We cannot prescribe or recommenractitioners.

Local papers containing reports news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publion, sale and advertising departments of THE LANCETould be addressed *"To the Manager."*

We cannot undertake to return MS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 27th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 21	29·43	S.W.	0·11	109	62	48	49	51	Fine
" 22	29·79	N.W.	0 02	99	62	47	47	49	Overcast
" 23	29·84	N.W.	...	108	67	49	53	56	Fine
" 24	29·81	N.W.	0·27	116	68	50	52	56	Fine
" 25	30·12	W.	...	107	68	48	52	54	Fine
" 26	30 10	W.	0·01	105	71	54	56	58	Fine
" 27	30 21	S.W.	...	111	70	54	56	59	Fine

The following journals, magazines &c., have been received:—Medico-Legal Journal, Medico-Surgical Journal of the Tropics, Archives of Internal Medicine, Recueil d'Ophtalmologie, Bristol Medico-Chirurgical Journal, Tuberculosis, Revue d'Hygiène, Revue de Gynécologie, Annales des Maladies des Organes Génito-Urinaires, Hospital Assistant, Malaya Medical Journal, Canadian Medical Association Journal, Journal of Tropical Medicine and Hygiene.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; *American Druggist*, New York, Manager of; A. N. B.; Messrs. Armour and Co., Lond.; Ardath Tobacco Co., Lond.; Dr. D. Alexander, Bristol; Anglo-Saxon Petroleum Co., Lond.; Messrs. Armbrecht, Nelson, and Co., Lond.; Addenbrooke's Hospital, Cambridge, Secretary-Superintendent of; Australian Book Co., Lond.; Anglo-American Pharmaceutical Co., Croydon; Messrs. J. W. Arrowsmith, Bristol.

B.—Bolingbroke Hospital, Lond., Secretary of; Bristol University, Registrar of; Dr. W. S. Bainbridge, New York; Sir Henry T. Butlin, Bart., Lond.; Birmingham, City of, Medical Officer of Health of; Birmingham Education Committee, Secretary of; Bury Infirmary, Secretary of; Dr. G. S. Brock, Lausanne; Mr. Arthur E. Barker, Lond.; Dr. C. A. Bentley, Bombay; Dr. Alexander Brown, Lond.; Miss C. S. Bremner, Bowerchalke; Mr. Henry Bazett, Lond.; British Malt Products Co., Lond.; Bureau d'Hygiène, Cannes, Directeur du; Mr. E. M. Beloe, King's Lynn.

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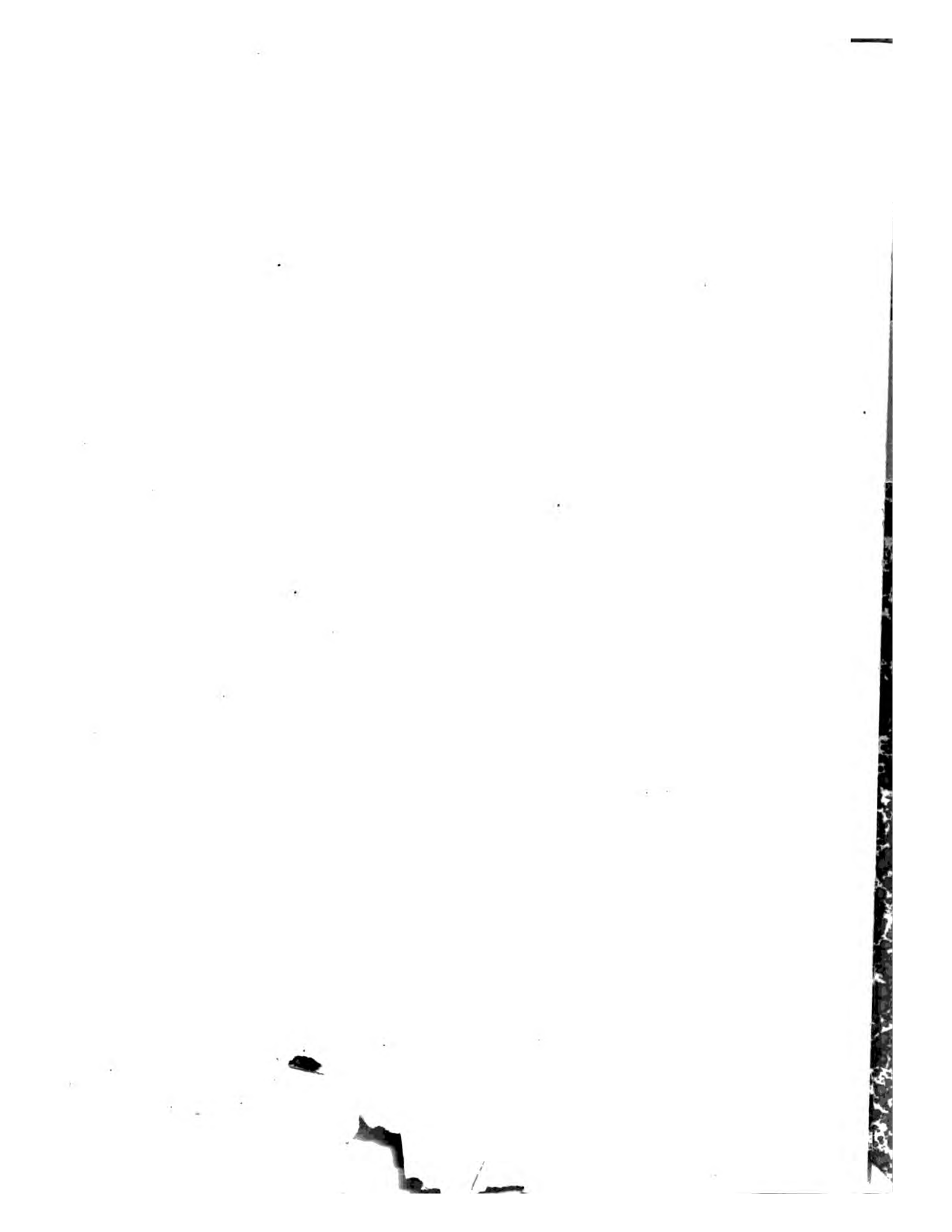

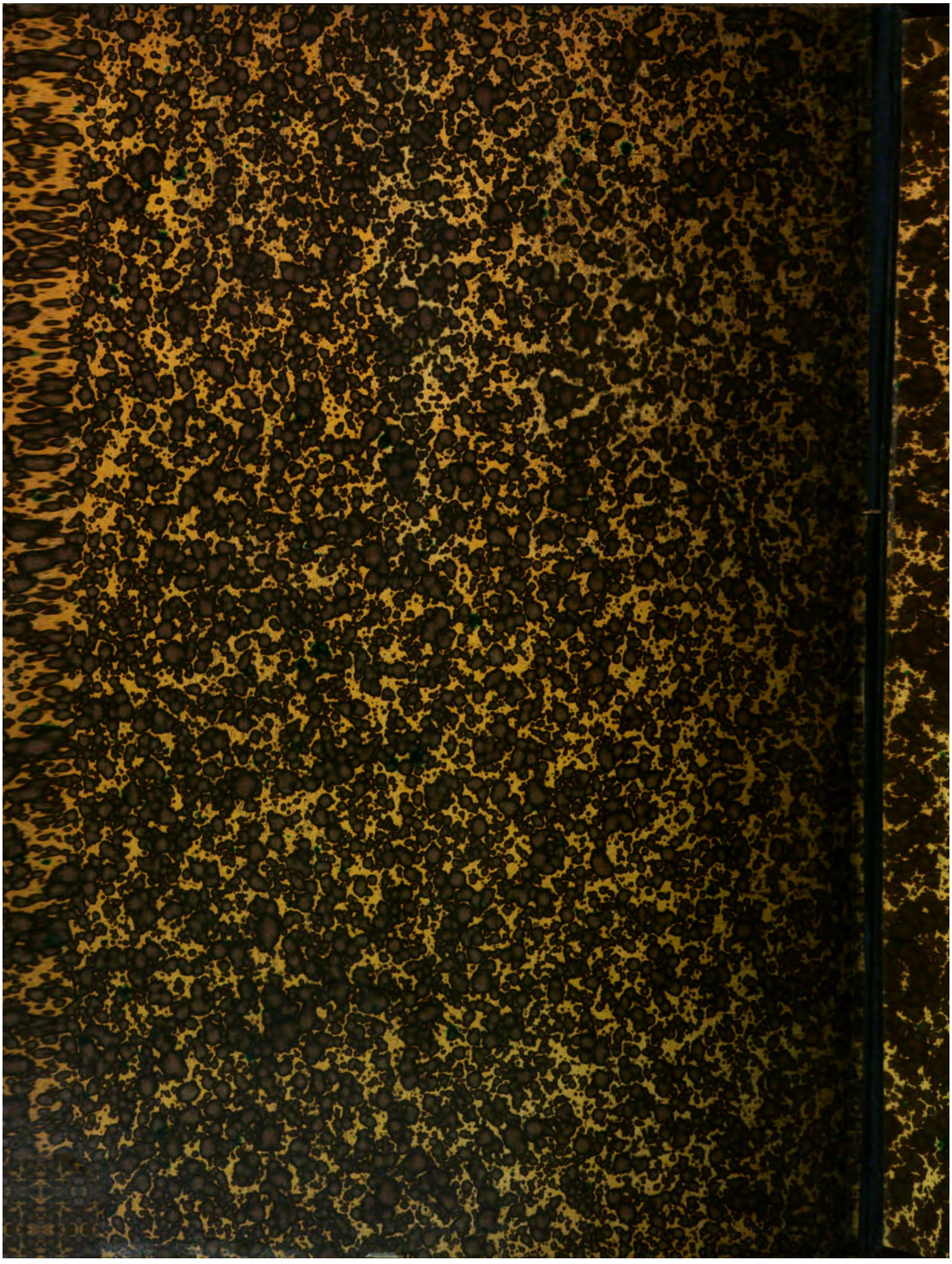

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